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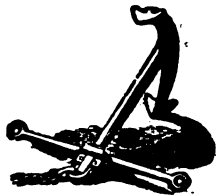
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FOR 1853.

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ON SUBJECTS CONNECTED WITH

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AND

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JANUARY, 1853.

NOTES OF A VISIT TO ROUND ISLAND, MAURITIUS.—THE BOASEN
BIRD.—By Col. A. J. Lloyd.

The countless flocks of sea birds inhabiting the desert islands in the immediate vicinity of Mauritius, suggested the conclusion that there might be some chance of obtaining a small supply of guano for the use of the planters of the Mauritius, and encouraged the desire of visiting Round Island and Serpent Island, more particularly as rumour* had fabricated a most dangerous reef, and pronounced it to be really growing up at some distance to the N.E. of the latter island.

As these inhospitable shores were said to be almost inaccessible during the winter months on account of the very heavy surf constantly rolling in with the S.E. trades, a favourable time was chosen in the hurricane months for visiting them, when the frequent and protracted calms might give a chance of a smooth sea, and the opportunity of pursuing some very desirable inquiries.

In the month of December, preparations for our little voyage were accordingly made; and having obtained by the kindness of his Excellency the use of the colonial schooner *Légère*, she was sent round to Flacq; and on the 16th of that month, with the barometer steady, and the weather apparently fine, with a chosen few we departed for that part of the island.

On our arrival at Flacq we found the *Légère* at anchor within the

* This rumour was not founded. See the Sailing Directions for the Island to follow.

dangerous reef, which, at a distance of about three miles fringes this part of the main land. But during the few hours which our journey had occupied, the whole aspect of the weather had become changed, and on our reaching the *Légère* the deep roar of the surf, and the light variable breeze, left us but little time to decide whether to pursue our voyage or not.

The most adventurous carried the day, and in a few moments we found ourselves in the most awful position that a strong current, a falling breeze, and a vessel unmanageable in a narrow channel with mountains of breakers within a few feet of us on either side could have placed us.

Our good fortune however prevailed, and after just escaping being engulfed in the tremendous surf which had set in with such terrific violence across the *Passé of Flacq*, we found ourselves in a clear offing. We had hardly advanced mid channel towards Round Island, before the troubled sea and the swiftly flying scud warned us that our haven must be near and our landing prompt.

The wonderful escape we had just had from the breakers of *Flacq Passé* determined us at all hazards to give that place a wide berth; and there being no shelter to leeward, we made up our minds to risk a landing at Round Island, the wind being yet in a favourable quarter for the attempt.

Our gallant little bark, half buried in the angry foam, quickly neared the shore, and with the assistance of a fine whale boat well anchored with a strong hawser, a determination to land at all hazards, a steady hand and quick eye, and above all with plenty of good fortune, we landed our party safely on this tremendous coast, with only a wetting, and the schooner lost not a moment in making sail, as had been previously directed, to Grand Bay, there to await in comparatively safe shelter what Providence should determine.

Our situation appeared forlorn enough; thrown on a desert island, apparently half buried in the lashing surf on all sides, with little or no shelter from sun or rain, a limited allowance of water, and no extensive larder. The sun shone however as yet gaily, and these very circumstances appeared to produce on all of us that peculiar excitement which it is the strange taste of some people to seek and enjoy; and we consequently, with light hearts and a bustling gaiety, commenced our allotted operations to make secure for the night.

Having rolled our water barrels so far up the shelving rocks as to preclude all threatened danger, indeed so far as to cause a laugh from the idlers at our unnecessary precautions, we looked to our means of personal shelter. Having entrusted this part of the arrangements (travellers like) to another, we found that it consisted entirely of one tarpaulin, with some thousand holes in it; so with one consent most friendly inquiries were made after sundry bags and cloaks hitherto left neglected below. With something like a hearty laugh at our imprudence, we set out in pursuit of adventure, and quickly found, from the swarms of rabbits and the forests of palm trees, that there was for the moment no danger of starving.

The sun still shone brilliantly although Mauritius was entirely out of sight; but the packed clouds, the suffocating heat, and the dull sigh of the now light winds told us we must prepare for a struggle with the elements, in which we should most probably come off the worst.

It is not necessary here to relate all our proceedings, nor the privations we endured in the heavy storm that came on, nor of our anxieties and hopes during a seven days' imprisonment at our chosen rendezvous; some of these days exposed to the tremendous blasts which at last did come; when we were without fire or the means of cooking our provisions, without any shelter but the crevices in the rocks; deluged with torrents of rain, and all our stock of fresh water washed away by the furious surf, although we had, with the greatest labour, removed the barrels again another 200 feet up the inclined plane, to be out of reach of the surf. But kind and anxious friends in Port Louis did not forget us, and there were those at their post whom we love and prize; and although the ships in the harbour had been in the greatest confusion, and imminent danger, matters had been so promptly looked to, that the moment our friends could with safety put to sea, they made all haste to our rescue; and it is to the namesake of our gracious prince the *Albert* steamer, with a crew of gallant fellows from H.M.S. *Conway*, that, at the risk of their lives, we owed our liberation.

During our forced sojourn we witnessed from our half sheltered nooks such a wonderful and impressive scene in the strife of the elements, and the indescribable magnificence of the monstrous waves, beating, with overwhelming violence, the crumbling precipices beneath our very feet, that we never shall forget a sight which but few mortals have had the opportunity of safely enjoying. It has given me besides an opportunity of addressing you on a subject which, perhaps, has been either not known or brought to notice by naturalists, and which my previous very simple narrative would not alone have warranted.

During the setting in of the gale, we remarked the busy and apparently restless motions of the red-tailed boason (*Phaeton phaenicurus*). Myriads of these birds exist on this island, and to our utter astonishment what we had previously remarked to be a most becoming ornament in the tail of these splendid sea birds, proved to be an essential portion of the beautiful mechanism which nature has afforded them to aid in their swift and varied motions, and that the two slender and delicate feathers of their tail serve them as a rudder or back water, which, with their feet, they work with the greatest ease and rapidity: on either side, to guide them in their evolutions in steering through the air.

It was not one but hundreds that we saw applying this most extraordinary power, and the suddenness and energy with which they used this simple machine, excited our admiration, when, on pursuing their course against the increasing gale, they discovered us behind a jutting rock, seizing their tail and placing it almost at right angles to their body, and their head outstretched in the opposition direction, they changed their course in the circumference of a few feet, almost indeed:

a few inches. But for witnessing the fact, I could have hardly credited the appliance of so frail a material to such a purpose; fortunately the corroboration of my friends does not leave the fact resting alone on my evidence.

As the histories of this bird in the "Cyclopaedia," and particularly that of Mr. Lesson, do not give any notice of their peculiar habits, although otherwise most faithfully described, the following may be acceptable as having come under my own observations, both as regards the red-tailed boasen and the white one, or *Phaeton Æthereus* of Linnæus, correctly termed "boasen," not, as in common, "boatswain."

Both species have a long slender tail, consisting of two feathers, in one white, the other of a beautiful red, which has obtained for them the distinct French names *paille en queue*, and *paille en queue rouge*. Their length of wing in proportion to their size is extraordinary, and shows them peculiarly fitted for long flight, and their progress is strikingly calm, quiet, and graceful, gliding along most frequently without any perceptible motion in the wings. On the contrary, their little webbed feet appear so disproportioned and so constructed that they have not even the power of waddling. They are consequently taken with the greatest ease, merely staring in a most laughable manner on being surprised. The mode we adopted for collecting the tail feathers, was for a moment to place the butt of the gun on their neck to prevent their snapping whilst the two feathers were plucked; which done, they merely shook their wings, apparently pleased to get off so cheaply, uttering a strange and lengthened croak.

They are, owing to this peculiarity, found immediately close to the shelving precipices, from whence, with one or two clumsy hops, they can launch themselves into their own element; and they generally return every evening to the same spot.

Their food consists entirely of fish; and they seldom search for prey in flocks, like other sea birds, but go either alone or with one companion: their sight is most keen; they soar, when on the look out, about 100 or 200 feet from the surface of the sea, when, on perceiving a shoal of fish, they close their wings and drop perpendicularly, with the velocity of a falling arrow, their tail maintaining them in such a vertical position that they are generally carried to a considerable depth under water, from whence they are seldom seen to rise without a fish.

Neither of these birds build any nest whatever, but lay in the ledges of the rocks, hatching but one egg, and rearing but one young one, the red-tailed species of which is a beautiful black speckled bird, apparently larger than the parent, with a plumage of chatoyant salmon blush, and silver hue.

With regard to Round Island, it is one of the most extraordinary spots I have ever visited, and from its striking formation and appearance, offers to geologists the most ample means of investigation of the theories of the oldest period.

Previous to offering any remarks on this interesting subject, a short general description of the island will be sufficient, I trust, to convey some idea of it.

Round Island is situated about thirteen miles and three quarters E.N.E.½E. of the northern point of the Mauritius, and although taken by all voyagers for an insignificant rock, only important as a sure landmark, is nevertheless of very considerable area, and possesses resources which might be turned to very great advantage. Its greatest length from north to south is about a mile, and its breadth three quarters of a mile. Its general appearance, when seen at a distance under the usual point of view, certainly much belies it, and it has the most barren aspect, standing out as a frustrum something elongated at its S.E. extremity. The best, indeed and almost the only, landing place is to the westward, and consists of a projecting rock only five feet above the level of the sea totally unapproachable with much sea on. Another hazardous landing place is found to the south-westward, opposite a deep ravine, which may in preference be approached when the wind is east or N.E. With these two exceptions a landing on the island cannot be attempted but in a dead calm, which seldom occurs owing to the rapidity of the currents and the set of the sea.

The form of the island as well as its surface is extremely irregular; the summit alone, which is 1049 feet above the level of the sea, having any pretension to smoothness is crowned with three remarkable blocks of basalt, above 500 or 600 feet distant from each other.

From N.W. to S.W. the island slopes gradually from the summit to within about 300 feet from the sea, and is closely intersected by deep ravines which radiate from the summit and assume the most curious and grotesque forms, increasing in depth, variety, and number towards the sea, forming tunnels, caves, and grottoes, of the most romantic description.

The whole island, to its very summit, is composed of a soft, trachytic lava and trifaceous breccia mixed up with volcanic sand, all in distinct strata, equal in regularity to the oldest sedimentary rocks. On the sea-worn surfaces, to the very top and in the sections of the ravines, are seen insulated masses of basalt, calcareous conglomerate limestone, and smaller boulders, with crystals of olivine held in a calcareous cement; the ground being intersected in lines nearly parallel to the ravines, with fissures from one foot in width to only the thickness of paper, filled with travectin, most of it of the colour and grain of "Gibraltar rock." The shore of the island, under whatever aspect it may be seen, is bold, scaled in steps, and rent throughout into vaults, chasms, and gaps, showing in all directions overhanging rocks, spires, columns, and pyramids, indicating the tremendous convulsions of nature; the strata in horizontal and serpentine layers of various tints and colours, disclosing to the wondering geologist, at each hour of the day, the most striking change in shape and beauty of shadow on the rocks, sometimes lengthening, shortening, and mixing with one another, giving hardly time to admire one scene of beauty and grandeur, before it is succeeded by another, ever varying, ever changing, until at last the fading light sheds one hue of the most brilliant purple on the whole mass.

The S.E. extremity of the island is covered with cinders, glittering

brightly with olivine and glassy feldspar, and studded with small masses of limestone, of the purest white, and of a rose-coloured hue. This spot is separated from the other part of the island by deep ravines, some of which contain, in rainy weather, a few pools of brackish water, which quickly filters through the porous rock.

The deeper ravines are crowded with palm trees of lofty growth, besides vacoas and ravinals; and the richness of the alluvial soil in which they grow, aided by the sheltered situation, promotes the most powerful vegetation.

From N. to N.E., the island is very steep and precipitous; caverns 200 feet broad, 30 to 50 feet deep, and 30 feet high, are formed by the overhanging but corroded and unstable ledges of rock, producing a most grand and picturesque effect; the few drops of water percolating from the roof reflecting in the sunbeams like glistening brilliants, their constant fall leaving little cavities as round as cups on the ground beneath. The section of this part of the island presents a series of stages, on which rest some three feet of the richest dark soil.

To the eastward there is a large semi-circular bay, where the sea runs fearfully heavy and cross, particularly during the ebb. From the level of the ocean to a very considerable height are a series of steps, retiring in the most regular gradation from the two horns of the half moon, meeting and being crowned in their centre by a precipice of some height, presenting the appearance of a vast and most beautiful amphitheatre.

The S.E. part of the island is the most barren, being exposed to the withering influence of the strong trades of the southern tropics, but in all other parts whereon there is sufficient soil (which is by no means wanting), the ground is thickly studded with dwarf cocoa-nut trees, and thousands of the refreshing palmistes.

There are some belts of forest wood on the upper part, but much stunted, such as "Bois de Ronde," ebony, and benjoin, giving, however, the most secure shelter to multitudes of rabbits, with which the whole island abounds.

The general direction of the strata is parallel to the surface of the island, and the rocks which have been so strangely abraded and undercut by the waves, bear invariable marks of the action of the sea having been parallel to that strata.

As already stated, the palm is found in great abundance, and although generally stunted in other parts, is in perfection in the numerous ravines, and affords by the destruction of the tree a most delicate vegetable, equal in flavour to the richest filbert.

The ravinal has too its use with the palm, in affording with its fan-like leaves an impermeable covering for the roof of huts.

The vacoa also is very fine, and affords a strong substance, used as a plat throughout the Mauritius for sugar bags.

The cocoa-nut tree is also very curious; the cabbage and leaves are the exact counterpart of one of a large growth, but the trunk is very thick and short, resembling in appearance an overgrown radish.

The principal grasses are the Chiendent, Gazon, Citronnelle, which

has a strong and very agreeable smell, and the Pourpier; the shore to windward is studded with Veloutiers.

The rabbits, as already described, are in immense numbers and fat; the other living creatures on the place are lizards, growing to a size of 14 to 18 inches in length. There are besides a few very large species of the terrapin, or land tortoise, of the Angola description.

Of winged visitors, excepting ants, moths, and swarms of troublesome flies, there are none but sea birds, including the Fouquet, known from its black bill, and its dismal cry of several notes when about to roost. The stately Frigate Bird is also here, which never fishes for itself, but robs its more industrious and weaker companions; and it is worthy of remark, that amongst these birds there appears to exist peculiar social habits, and they keep their society quite exclusive.

The red-tailed Paille en Queues, the Frigate Bird, and the Fouquet have the exclusive and sole possession of Round Island; the white-tailed Boatswain generally inhabits Gunner's Quoin; and Serpent Island appears to be the rendezvous of the Goelette, the Ton, and the Cordonniers.

NOTES OF A VISIT TO ALEXANDRIA.

On the evening of the 9th of July, 1851, I embarked at Marseilles, in the *Medina* steam-ship, which was to sail the following morning for Malta. The sea breeze proved most refreshing after the heat and fine dust of Marseilles, and, seen under the morning sun, (for we were detained till twelve noon, waiting for the mail,) the town and harbour looked highly picturesque. A little way out from the harbour lies the rocky islet on which stands the castle or stronghold called Chateau d'If, in which, according to Carlyle, the young Mirabeau was incarcerated by his father, because the said young Mirabeau was not an epitome of the elder Mirabeau. Numerous islets of the same character lie scattered around; all so white and barren, that, but for the blue waters around, they must have proved oppressive to the eye from the reflection of light. On the morning of the 11th we came in sight of Corsica, and could descry after the birth-place of Napoleon, with its white houses lying along the slope of the beach; and at mid-day we passed through what are called the Bear's Straits, from a mass of rock on the island of Sardinia, which looks in the distance like a bear. Sardinia, seen from the sea, appears very mountainous; and the mountains in the centre terminate in scathed peaks, which reminded me of Arran, only they are on a much grander scale. The coast seems barren in the extreme; not a patch of vegetation to be seen. Before us, on the morning of the 12th, lay the little island of Maritimo, which lies off the coast of Sicily, and passing between it and Sicily, we saw on the latter the sunny vineyard slopes and white mansions of Marsala. About noon, the following day, we anchored before the

town of Valetta, in the harbour for out-bound vessels; but the heat was so oppressive that I did not venture to land, and contented myself with sailing in one of the gaily painted Maltese barks, with its snowy awning, to the *Banshee* steamer, which lay in the harbour, waiting the mail and passengers for Alexandria. As soon as I was on board the *Banshee*, I was attracted by a party of Easterns, who, we were told, were going the pilgrimage to Mecca. The leader of the party, a Hadji, was a fine specimen of manhood. He was tall, robust, finely formed, his features were strongly marked, his eyes dark, and his countenance expressive of benignity and the repose of strength. His dress was truly magnificent. He wore a very ample white turban; a blue tunic, embroidered with yellow and red, the sleeves of which were slashed to the elbow, and lined with red, while muslin undersleeves covered the arm to the wrist. Round his waist he wore a crimson sash or scarf of great amplitude, which, from repeated coils, formed a prominence on which he rested his arms, while he looked around on the other passengers with the serenest dignity. His trousers were nankeen, very full, and reaching to the knee, the legs being bare, and on the feet yellow slippers, which were duly thrown off during devotions. While I looked at him, he spread his mat and began prayers, kneeling, and bending the body so as to touch the ground with his forehead. So soon as he finished, the others came forward, one by one, and performed the same ceremony. Their dress was equally picturesque, though not so rich. Some wore the turban, some the tarboush, or Greek cap, embroidered. The dress of two was a white woollen envelope, such as that of Arabs which I had before seen in Paris; while the others wore a coarse striped woollen cloak, with a sort of hood that could be drawn over the head at pleasure. They seemed loving and kind to each other, but, though generally serene, there was a fiery expression in the eye which convinced one that these sons of the desert, though calm and tranquil now, could become hot and impetuous if roused to anger.

The speed of the *Banshee* was much greater than that of the *Medina*, her average being 12 knots an hour, her maximum fifteen. On the 16th at half-past 11, we came in sight of the coast of Africa, and about two in the afternoon anchored before Alexandria. A succession of windmills extend all along the flat, sandy coast towards the west, while on the other side is the pasha's palace, skirted by a range of low, square, mud cabins, which, on a closer inspection, prove to be a native Egyptian settlement. Numbers of native boats surrounded our ship, manned with swarthy, half-naked Arabs eager for employment, one of which was selected for our party, and we were at length landed on the shores of Africa, among turbaned men, veiled women, camels, donkeys, and *bizzarerie* of every description. Our drive to the hotel was exciting and full of interest, everything around was so new and strange. The apartments selected for us were spacious and pleasant, the front windows looking out upon the great Place or square, the back looking into the okella or court-yard of the hotel; so that we had, as it were, a glimpse of both out-door and in-door life. The

largest room was above 40 feet long, and very lofty, the upper end being thrown into windows, which were shaded, as all the windows were, by green *jalousies*, the lower division of which could be raised by an iron rod, so as to admit the air. The beds, which were iron, with two mattresses, one cotton, the other stuffed with dried millet stalks, with a space left open, in order that the hand might be put in to toes up the millet, were very hard, after the pleasant spring-beds of Paris; and the bedsteads were all hung with bobinet curtains to exclude the mosquitoes. Before each bed was a rug, which proved, as I afterwards found, a great harbour for fleas, which were very numerous. In each room there were long *deewans* for the siesta, and mirrors, in the French style, in the compartments of the walls. Our party was waited on at table by two Arabs and a French major-domo, who carved each dish, as required, in the French manner, and the Arabs handed it round. Our dragoman stood behind his master's chair, and only assisted on an emergency. The composure of the Arab is very pleasing. His elastic gait enables him to move quickly, and there is a native dignity in his manner, especially to a female, which throws the *fassiness* of the French waiter into the shade. These Arabs also took charge of our bedrooms, making the beds and cleaning the floors, as indeed the waiters in the south of France also do.

After dining we drove out, proceeding all round the town, while our dragoman pointed out each remarkable object. I was rather disappointed with the so-called Cleopatra's Needle, after seeing the obelisk of Luxor, at Paris; still it is beautiful and wonderful, with its mystic histories and world-old carvings, and I felt that, but for heat, I should have spent many an hour beside it, musing on the past. Pompey's Pillar stands on a height near a native burying-ground, and as I had often seen plates of the column, but never clearly understood the nature of an Egyptian cemetery before, I was more attracted by the latter than the former. The graves are marked by a half-cylinder of stone or plaster resting on its flat side, and at each end there is a little turret or chimney, sometimes decorated with a cactus, which, I am told, the Mahommedans regard as the symbol of eternity. The aspect of this resting place of the dead is dreary in the extreme. The dry, arid character of the ground, and the absence of anything green, save the few meagre acacias that skirt the carriage-way, give it an aspect totally distinct from anything we see further north, and lends *new* force to the expression in the *old* book, "one who dwelt among the tombs." If it be correct that Pompey's Pillar is the only remaining column of a propyleum, this is emphatically a burying-place. On the pillar, some Goth has painted in great red letters the name of George Butter; and not only is the pedestal thus defaced, but on the shaft near the capital the same red paint has been busy, but not quite so successful. The groups of people riding, running, sitting, praying, strike a traveller more the first day, perhaps, than afterwards, but I felt that, when the native stared at us as we passed, they only paid us back in our own coin; though the people of Alexandria certainly are great starers, especially the Greeks, who really are imperturbable, and

are looked upon as the rudest part of the community. Indeed the Greek face here is mean and sinister in the extreme, and helped to dispel some little remains of a girlish delusion regarding "Heraclidæon blood." As we passed the Rosetta gates, we saw the Turkish soldiers, in rows of about fifty, performing their devotions at sunset, each one with his shoes behind him; the long rows of shoes seen from the side presenting rather a strange spectacle to European eyes. Returning to the hotel, we were a little shocked at the over-familiarity of the cockroaches, which walked about our drawing-room and bed-rooms; and, addressing one who had been for some time in Alexandria, I asked if these creatures were so common here. "Yes," was the reply; "yes, they are very common. You have all the plagues of Egypt here still—mosquitoes, fleas, flies, locusts, with a slight sprinkling of centipedes." At this I laughed heartily; but, as Romeo says, "they laugh at scars who never felt a wound," and I certainly was in anything but a laughing mood next morning. Let no one living in temperate regions deceive himself by imagining that he can enjoy the *Auberge Italienne* of Alexander Dumas. A night in Alexandria will furnish him with many experiences, and, among the rest, with a keener appreciation of this clever author's powers of description. Speaking of the the mosquito, he says, "*Il est à nos cousins du nord ce que la vipère est à la couleuvre. Malheureusement, au lieu de fuir l'homme, et de se cacher dans les endroits deserts comme celle-ci, il a le goût de la civilisation; la société le rejouit; la lumière l'attire; vous avez beau, tout fermer, il entre par les trous parles fentes, par les crevasses.*" Inexperienced, unsuspecting, unable to believe that a foe so insignificant could prove so formidable, I was perhaps not sufficiently careful in tucking in my mosquito curtains; but certainly I did suffer for my carelessness. I slept none, and rose with my face, neck, arms, hands, legs, and feet covered with bites. The fleas, too, had been by no means slack; so that between fleas and mosquitoes, my skin presented the appearance of one suffering from small-pox; and the irritation increasing as the day advanced, I found that between heat and uneasiness, living in thirty-one degrees of latitude was to prove quite a trial of my philosophy. Breakfast is simply coffee and rolls, and is on the table at 7 A.M. Each one helps himself, and does not wait till all are seated. While we were at breakfast, beautiful bouquets of flowers were brought to us by the dragoman, composed of roses, jessamins, oleanders, &c.

In the afternoon we drove along the banks of the canal of the Nile, which is the principal carriage-drive. I saw for the first time the *sakia*, or water-wheel, by means of which the ground is irrigated. The wheel is turned by two oxen, which are blindfolded, and pace side by side in a circle; and the water as it rises flows into a trench, dug for the purpose of conveying it to a distance. This apparatus is to be seen in every direction, which shows that there is abundance of water very near the surface, yet there is no getting a plentiful supply at the hotel. It is brought into the city in goat-skins, two being a camel's load. One of the first sights I saw when I got up was the water-

camel standing in the okella, waiting till its skins should be emptied. By the banks of the canal there are some fine houses, whose gardens look gay in the distance, but, on a closer inspection, the trees and shrubs are so covered with dust, and even the vines, which hang in long festoons from the vine trellis, are so destitute of freshness, owing to the fine particles of sand with which leaf and tendril are alike dusted, that one has no pleasure in them. One phenomenon I could not help remarking, the immense number of shells which attach themselves to the trunks of the trees, and the stems of the taller shrubs. Upon some of the joints of oleander stems there were portions as large as my two hands, entirely covered with helix, or snail shell. It was not our tree species, (*helix nemorosa*,) but whiter, and had an umbilicus. The vine trellis (which I had often remarked among the hieroglyphics copied from the Egyptian temples) is the most pleasant part of an Eastern garden, as one is embowered among the broad leaves of the vine, and thereby sheltered from the scorching rays of the sun, which are truly oppressive. One family which we visited live all the year round, during the day, under a huge mulberry-tree, round whose umbrageous boughs clematis has twined in every direction, and flung down leaves and flowers, impervious to the rays of the sun. Under this tree stands a great family table, surrounded by chairs and deewans, and here visitors are received, state business is transacted, (for the lady is a great diplomatist, and friend of Seyd Pasha's,) here the children play; in short, the whole of the ceremonies, trifling and important, of eastern life, are daily performed beneath the shade of this great mulberry-tree, the house being used simply as a place for cooking, dressing, and rest. All along the banks of the canal before this lady's house, lay barges of different sorts, belonging to visitors from Cairo, who leave that town during the hot season, and, coming to Alexandria, sleep in these barges, and spend the day with this lady, or others of their friends in the city. More to the west are numerous pavilions, to which numbers of Greeks and other Levantines resort after business hours, the opposite side of the way being crowded by their mules and donkeys, and beautiful Arab steeds, each one having its appropriate seis. One can scarcely conceive a more motley group than these seises. Arab, Egyptian, Nubian, Abyssinian, Copt, all hues of brown, every variety of costume and colour. The turban, which is sometimes white, sometimes scarlet, sometimes chequered; the scarlet tarboush with its purple tassel; the donkey boy's little white cap and blue blouse; the white floating blouse of the seis, or the striped satin vest, and the rich shawl bound round the loins, while from under the ample trousers appeared the long, naked, agile leg, with its crimson or yellow slipper, all formed a picture so striking, so peculiar to my untravelled eye, that I felt as if repaid for my sufferings of the night by this scene alone. The donkey-boy is precisely the Moorish beggar-boy of Murillo alive; elastic in frame, his flesh firmly knit, his eye dark and expressive, but often expressive of a sadness which seemed unnatural to so young a face. This little boy is seen during the sun's most scorching hours, running after a donkey, on which sits some burly

Levantine, and, if the Levantine should choose to ride thirty miles, the boy must run after him, whipping the donkey from behind, and be ready to take charge of it, should the hirer wish to visit a hotel or pavilion by the way. Donkeys, mules, and horses are in fine condition, and finely caparisoned. The first have bells round the neck, which tinkle in harmony with the *pit-pat* of their nimble feet, and showy saddles placed very far back from the head, the ladies' saddles having a sort of framework or easy chair character behind. The mules and horses have usually rich saddle-cloths, with gay fringes round the breast, and when led by their Arab seises, form pictures that Landseer would delight to paint. The faces of these men, though not always handsome, are massive; the absence of regularity of features being made by the pleasing expression of the whole. I loved to watch them greet each other, or greet our Ibrahim, as he sat on the coach-box. Their mode of salutation is different from ours; they kiss the hand several times, touching the forehead and breast in a most animated manner. One of our party who knew Arabic favoured us with occasional translations of their greetings. The dress of the women is by no means so showy as that of the men, though equally peculiar. The native Egyptian woman wears a blue woollen smock reaching down to the ankle, with a hyke or plaid of cotton thrown over the head. Over the face she wears a stripe of gauze or crape about a quarter of a yard in breadth, and three quarters in length, in which are spaces left for the eyes. From the forehead down to the point of the nose she suspends a number of coins or amulets, for the purpose of keeping off the *evil eye*; and on her arms are great bracelets of different sorts, sometimes brass rings, sometimes various coloured beads. Her ear-rings, too, are enormous, of the same material with her bracelets. She carries everything on the head but her child, which she carries on the shoulder. If the child be old enough to shift for itself, it sits astride on the mother's shoulder, holding on by her head; if too young to do so, it is seated on the shoulder, with its feet resting on the mother's breast, she grasping them with the left hand, while with the right she holds the infant by the right arm, resting her own arm on the head. She has a circlet of cotton which she places on the head, and on this she poises great baskets of fruit, meat, bread, &c., also her pitcher of water, which she carries without any support from the hand. I hope my female friends will not take it amiss if I say a word or two on the superior form of the Egyptian woman, owing to the absence of stays. Nothing can be more graceful than the perfectly erect, perfectly proportioned figures of both young and old. Such a thing as curvature of spine is never seen among them, nor any of that protuberance of shoulder which is so common in our drawing-rooms, and on our streets. Even the erect, elastic forms of the men, I have no doubt, are due to the absence of stays in the women. The better classes wear a large, white envelope, with a white veil, very full printed trousers, and yellow morocco boots. This woman we frequently see on a donkey, upon which she sits astride, with her knees almost up to her chin, and often with her young child placed before her.

The highest class, chiefly Levantines, wear a large silk cloak, which shrouds them completely, with a white cotton veil. Mingling with all these varieties of costume, is seen the Greek, with his scarlet tarboush and its silken tassel; his richly embroidered jacket and showy vest, and his ample white trousers reaching only a little past the knee, in order that the fanciful gaiter and adorned shoe may be seen to advantage.

Numerous vessels passed up and down the canal with their lateen sails; some spread, some tied up, all picturesque. Some were piled with merchandise, the motley crew sitting in groups on the packages; others heaped with coarse grain, half-mast high, the yellow mass dotted with scarlet and white turbans.

The sun set as we returned from our drive, and, as we looked westward along the canal, with its fore-shortened, picturesque vessels and their long shadows, and saw the Egyptian hamlet with its millet hedge and acacias reflected in the waters; and behind, Lake Marcotis, with its white sands against the golden and purple after-glow of the horizon; all formed a picture in the style of Charles Deane, with sharply defined shadows, and brilliant contrasts of light and shade, but with this addition, that it had an atmosphere that one could feel to be eastern in its character; not one single cooling ray, no reflection from moist rocks, no deep brown mould, but glowing masses, undisturbed for long seasons by zephyr or shower, slumbering beneath a canopy of purple and gold.

On the following day we drove through the town to the late pasha's palace, which is close by the sea. The gateway is very imposing, and the beautiful syenite pillars (evidently of a much older date than the other portions of the edifice) are richly sculptured and polished. Numbers of Turkish soldiers were being drilled as we passed along; some of them raw boys of sixteen or eighteen, scarcely able to bear the musket. Indeed, there is every appearance of preparation for hostilities wherever we go. The palace is a great, heavy edifice, built on the slope towards the sea, with baths, gardens, and a low range of houses, formerly used as the harem, in the vicinity; but there is no beauty, no freshness, even the baths which we entered are hot and unwholesome, and the sea water that finds entrance by the grating looks anything but inviting. Passing through the streets where the bazaars are held, we were again fascinated by the imposing variety of costume. A mosque was dismissing, too, and the moonshee, with his floating robes, mingled among the crowd. The only unbecoming dress is that of the soldier, which is white fustian made into jacket and trousers, so that, were it not for the tarboush, the dress of the Turkish soldiers would be precisely that of our mechanic.

As through suffocating heat, irritation from mosquito bites, and the prevalence of fleas, I sleep almost none, I have had opportunities of making observations, not exclusively astronomical, during the watches of the night; and may here relate my experiences of the *night side* of Alexandria. From ten till twelve, the ear is assailed with barking, howling of dogs, with a large intermixture of cata-

wailing ; from twelve till two, with serenading of all sorts, harmonious and otherwise, with a spice of the cats and dogs between hands ; from two till four, cock-crowing incessant—not an interval of rest to the ear, but crow, crow, crow—shrill, harsh, far, near, young, old, unabated crowing ; from four till six, donkeys braying, camels lowing, men shouting and cursing, a very Babel of sounds that it is impossible to convey by any language. As some compensation, however, the stars are truly magnificent, and the Milky Way much more brilliant than it is with us. By six all the world is up. The young Egyptian girl is in the okella with her flock of milk goats, and the Nubian maids are waddling down the stairs, and along the passages, to get milk for the morning coffee ; and the Levantine lady, with her long hair hanging down her shoulders, is weaving it into plaits ; or, this piece of the toilet finished, is leaning over the balcony, with her kerchief tied round her head and her cup of black coffee in her hand ; or, may be she is away to matins, with her great silk cloak wrapped around her, and on her feet her bright yellow boots ; and in the centre of this great courtyard is a trough of mortar (for they add some apartments to a house at the corner of the okella), and three young, graceful Egyptian women carry this mortar on their heads up to the third flat, bringing rubbish as they return, and never touch the burden with the hand till they do so to take it down.

On the morning of the 19th we went to the bath, which is a wooden erection run out into the sea, and divided into apartments, each one of which has a flight of steps descending into the water, and ropes for the bathers to float by. All these apartments have access to a central portion which is uncovered, the passages to the other divisions leading round it. When we entered we found this filled with women, most of them having pumpkins tied round their waist, and splashing and screaming in a manner that quite appalled me. I was relieved, however, when I understood that we could be quite private if we wished ; and, undressing, we floated for some time in the waters of the Mediterranean, and got cooled. The pleasant sensation lasted only a short time, however, as the coating of sea-water on the skin prevented free perspiration, and increased the heat in the long run. We saw some beautiful eastern women in these baths, and ascertained that the dress beneath the black envelope is very rich and magnificent, with a superabundant display of costly jewels.

The British consul dined with us to day, and we went after dinner to the gardens of Seyd Pasha, the heir-apparent. These gardens are very superb, abounding in gorgeous plants of every description, with absolute groves of crimson and white oleanders. The walks are laid with different-coloured pebbles, grouped into the forms of spears, shields, arrows, &c., so closely wedged in that they make a hard pavement, the dark and light polished surfaces contrasting beautifully. In the centre of the grounds stands the pasha's kiosk or summer palace, the outside of which is by no means imposing. Ascending by rugged and broken steps, a sliding door admits you to a large hall, at each side of which are guard-rooms, lighted from the sides, with

cushions and tapestried chairs, which are very rich and elegant; another sliding door admits you to the pleasure room, a large square apartment with enormous looking-glasses at top and bottom, while a sliding window, composed of two large plates of glass set in mahogany frames, formed the one side, and sliding glass doors the other. At top and bottom are deewans of Gobelin tapestry, with a dozen chairs on each side to correspond; and in each corner a marble pillar, the base and capital of which is white, the shaft brown. From the roof is suspended a gorgeous chandelier of dull and bright silver, in perfect keeping with the apartment and its furniture. I do not know that I have seen anything so rich and chaste as this apartment and its furniture. While we stood admiring, the consul told us that he had seen in this room about £5000 worth of pipes—the pipes of some wealthy Turks being worth several hundred pounds. Opposite to this was the billiard-room, with no furniture but the billiard-table, and on the walls scales for gambling. The bed room was unique. The bed was composed of six damask waddings, which were laid on the floor, in the centre of the room, with one fine linen sheet thrown over them, and three pillows also of damask. It was no longer than our beds, but about twice as broad, and alongside of it was a cushion, on which lay the pasha's slippers, handsomely embroidered. Mirrors, deewans, washing apparatus, &c., were all in keeping. Across the hall from this room was the bath, composed of white marble, and lighted from the roof by stained glass. The temperature of these baths can be raised to any height. As we sat in the garden, under a great mulberry tree, surrounded by oleanders, olives, lemon, and citron trees, the pasha's favourite wife saw us from the windows of the harem, and sent us her respects, with an invitation to the harem for the ladies of the party. She was a Georgian slave: and is, we are told, extremely beautiful. It was after sunset ere we left the grounds, and as we approached the city, the stars shone out and the crescent moon. Mosque, minaret, and palm-tree looked more beautiful under their light, and cool, if not a cooling breath, greeted us at some of the turnings by the way, reminding us of homes far away. When our carriage stopped before the hotel, night had gathered in, and Jupiter shone clear above the flagstaff that marked the house of the French consul; and the Milky Way shone bright, and the great stars; and the turbaned seis was seen gliding along the street with his flaring torch; and you were made aware of the vicinity of the donkey only by its tinkling bells; in short, each sight and sound warned me of the approach of the hour when the mosquito is doubly greedy from its having sported all day in the sun, and a darkness far worse than the darkness of the sky falls over my heart—the prospect of a night of sleeplessness and suffering.

That which strikes one most while driving in and around Alexandria is the accumulations of debris on all sides. All round there are undulating eminences, entirely composed of fragments of brick, pantile, &c.; and in places where the carriage way has been cut through these

undulations you can see the regular strata of this debris, now a layer of brick, now a layer of pantile. In general, these undulations are barren in the extreme, presenting an arid, scorched surface that is distressing to the eye; but on those lying contiguous to the sea, the ice-plant (*Mesembryanthemum crystallinum*) grows very abundantly, looking from the carriage quite like our thistle in a state of decay. Growing along with it is a species of silene, with white flowers tinged with pink, but altogether devoid of the freshness of our silene, being covered with fine sand and dust; yet we must prize these plants as it seems to me they prove the food of the Alexandrian goat, from the numbers of flocks of these animals which we find on these sea-girt eminences.

We left the carriage one evening and went down upon the sands. The appearance of the side of the eminence lying towards the sea indicated a subsidence of the land, portions being detached from the heights, and thereby leaving exposed to view hollows which must have been ancient cisterns, or something of that sort. All along the beach we picked up fragments of porphyries, syenites, granites, and marbles, cut and polished, though worn by the action of the water; evidently the debris of tessellated pavements and mosaics of ancient Alexandria. We lifted several shells, but most of them were very much worn. One perfect pecten (*Pecten varinus*) we found, however, of a rich pink in colour, and were fortunate enough to secure a living specimen of the oceanic snail (*Ianthina globosa*) with its wondrous float of air cells. Reynell Coates, M.D., is correct when he asserts that there is no attachment between the float and the animal, other than that arising from the nice adaptation and adjustment of proximate surfaces. I examined this vesicular apparatus closely while the creature was quite active, as I lifted it off the crest of the wave but a moment before, and owned the correctness of Cuvier's description, "*semblable a une balle d'ecume.*" During the examination the creature emitted so much of the violet coloured liquid, that it left a large stain on the palm of my hand.

As far as one may judge by the buildings that are now in progress, Alexandria is on the increase, yet it never can be a pleasant locality. Indeed, seeing it at the present day, one can scarcely conceive it ever to have been the renowned seat of learning and royalty of which we read so much. Yet we are told that Mahomed Ali did much for its improvement, and even Abbas Pasha, though not often in Alexandria, seems active and enterprising. It is said that he fears *living* in the city, as it is prophesied that he is to *die* in it; and he only comes occasionally from his palace in the desert to keep his emissaries at their duty.

We saw Syed Pasha one evening in one of the marble pavilions by the canal. He is a great burly fellow, dressed in the costume of a Turkish officer—a blue surtout, sash, and tarboush. On the opposite side of the way was his state carriage, open double seated, with six horses. Each horse had a scarlet saddle-cloth; a postillion dressed

in scarlet and gold took charge of each pair of horses, and a tall coachman sat on the coachbox, also dressed in a scarlet coat, a much better looking man than his master.

I regret that I cannot give an account of the interior of the harem, as on the day that was fixed for us to visit the Pasha's favourite wife, I was so unwell and so disfigured with mosquito bites, that I was unable to avail myself of the invitation. Our friends, I may say, however, were very much pleased, and found her beautiful and superior looking, though her beauty, as far as I could learn, was of the sensuous order. She sat on a low ottoman, smoking, and her slaves brought pipes for my friends also, which of course they declined. She sang eastern songs to them; they also sang to her. They asked her if she was happy. She replied, through her interpreter, "I should be so. I have everything I could wish but *him*," meaning Seyd Pasha, who seldom visits her. Indeed she had been thrown into a state of emotion by their visit; for, when she heard the wheels of the carriage, she thought it was the pasha, whom she half expected. Alas, what a limited state of existence! Even the primitive stuff must be totally different! Could an Elizabeth Barrett or a Margaret Fuller have been so hemmed in, so enslaved by circumstance? Be this as it may, blessed be that great Gospel which first elevated woman to her true place, the equal and the gentler companion of man, and that, too, on the only legitimate foundation—equality of soul.

PROCEEDINGS OF H.M.S. HERALD, *Capt. H. M. Denham.*—*Extract of a Letter.*

The *Herald* and *Torch* steamer, under the command of Captain Denham, after a protracted passage, arrived at Rio de Janeiro on the 25th of September, on their way to the Feejee Islands, having on their way examined, and laid down correctly on the chart, two distinct patches of coral ground, the existence of which had been previously supposed. These are the Hotspur, about fifteen by ten miles across, in lat. 17° 51' S., long. 38° 6' W., and the other a bank of seventy-two miles by twelve, the middle of which is situated in lat. 20° 46' S., long. 37° 47' W.

Anchorage was obtained on these banks for twenty-four hours at a time, by which the most accurate depths, the set of current, and specimens of their surface were obtained. No bottom at 200 fathoms was found between them, nor between them and the coast, from which the nearest is 180 miles.

Captain Denham gives the following account of these banks to Admiral Sir Francis Beaufort, Hydrographer to the Admiralty:—

"I shaped a course that should test the forty-seven fathoms, a

single sounding laid down from Hotspur's Remark Book, of 1814, in lat. $17^{\circ} 56'$ S., long. $36^{\circ} 4'$ W.; thence through the position assigned to some thirty-eight fathoms by the *Montague* in 1813, lat. $20^{\circ} 9'$ S., long. $38^{\circ} 26'$ W.; and then to trace if any submarine relation thereto could be shown with the bank associated with the names of *Pandora*, 1847, and *John Adams*, 1849.

Obtaining quicker soundings as we approached the assigned position of the Hotspur, our casts suddenly jumped from 200 fathoms no bottom to 27 fathoms coral; which, being seven miles in advance of the forty-seven fathom spot, at once gave rise to an idea that the bank might cover a considerable space with perhaps shoaler water. No time was lost in taking up an anchorage upon it. The atmosphere favoured our morning, noon, and evening observations so that latitude and longitude were satisfactorily obtained. It blew sufficiently moderate from N.E. to detach the boats, and before the swell disturbed us we obtained sufficient to show that we had anchored upon a steep to bank of coralline crust, extending fourteen miles N.W. and S.E., and ten miles in a N.E. and S.W. direction, with as little as twenty-five fathoms on the middle of it, and which deepened suddenly from thirty fathoms to seventy, and 200 fathoms without bottom. We could not detect the slightest current, nor discolouration that would indicate so abrupt a feature in ocean water, by ripple or otherwise. The lead brought up a few specimens but the dredge and anchor brought up nothing, and the fishing lines were very successful. We determined the latitude of the N.W. extreme of this bank to be $17^{\circ} 51' 30''$ S., and the longitude, with subsequent rates at Rio, $36^{\circ} 5' 9''$ W., and the variation $6^{\circ} 33'$ W.

Pursuing our search for the *Montague* shoal at nine miles further eastward than it was reported, we struck it in thirty-one fathoms, from a long line of 180 with the deep sea lead and no bottom. We were forty-eight hours buffetted with a south-easter before we could obtain an anchor hold of this bank to which you had specially directed my attention. Eventually we occupied three positions upon it; the *Torch* joined us, and we soon traced out a tolerably flat bank of thirty-five fathoms, bending to the south in its general direction from N.W. to N.E., seventy-two miles in length and twelve in breadth, with one spot at its N.E. extreme of only nineteen fathoms; we found a current to the S.W. of three quarters of a mile per hour. The same description of fish as on the Hotspur were found on it in abundance. The swabs which we let down on it from different parts of the ship entangled some massive specimens, whilst the crusted surface would yield nothing to the dredge or palm of the anchor. Our observations on this bank place it in lat. $20^{\circ} 45' 8''$ S., long $37^{\circ} 47' 23''$ W., the variation (also adjusted for change of subsequently ascertained deviation) came out $3^{\circ} 42'$ W.

We annex the following for the benefit of naturalists:—Note on the structure of the Victoria Bank, situated in lat. $20^{\circ} 46'$ S., and long. $37^{\circ} 47'$ W.:—

The surface of this Bank, judging from the materials brought up

in the dredge, or with the lead, or by other means, appears to consist almost entirely of calcareous matter. This either enters into the composition of nullipores and coral, the former of which, as at the Hotspur Bank, thickly strew the sea bottom, or appears as fine white mud, or as loose sand and gravel, or is consolidated into a soft, spongy, and often vesicular rock, variously encrusted with algæ, zoophytes, and nullipores, perforated by *serpula* and *lithodomi*, and harbouring in its recesses many small crustacea, mollusca, and echinodermata.

The richness of this bank in marine objects is best shown by my stating that of zoophytes alone, or plant-like animals, (excluding the corallines and other vegetable productions, with which they are often confounded,) no less than 39 distinct kinds were added to the collection, including 11 species of one genus, 6 of another, many of which are quite new.

Perhaps the most interesting occurrence connected with our examination of the bank was the bringing up from the bottom, 33 fathoms, a large irregular block of what proved, when broken up, for disintegration had completely disguised the appearance of the surface, to be a species of *astræa*, one of the massive reef-building corals. This, however, was dead, and resembled a fossil of the tertiary epoch, but that it had lived there is probable, although it appears to have been established that the reef producing corals seldom live, at least in great numbers, at a greater depth than from 15 to 20 fathoms. Probably, as is known to be the case in the shoaler water of the neighbouring Abrolhos, small patches of living coral are scattered over the surface of the Victoria Bank, but form quite an insignificant feature in its composition, of which nullipore is the chief ingredient.—*From the Notes of Mr. M'Gillivrey, Naturalist, H.M.S. Herald, October 14th, 1852.*

Note on the specimens of surface brought up from the Hotspur Bank, situated in lat. 17° 51' S., long. 38° 6' W.

From the specimens obtained, it is not easy to arrive at a sound conclusion regarding the structure of the Hotspur Bank.

Small living nodulated nullipores (of a pinkish hue) and their fragments, joints of dead halimedæ, coarse calcareous sand, and a few dead shells, (*lithophagus* and *bullæ*,) were brought up with the lead; but the dredge added nothing except some delicate pale algæ, and a small flexible coralline of the genus *cellulana*. On this sea bottom nullipores form, apparently, the principal portion of the surface.

Nullipores belong to one of the lowest classes of the vegetable kingdom, and are very abundant in all seas.—*From Mr. M'Gillivrey's Notes.*

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW
STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from vol. xxi., p. 580.)

Killon, at which port I am directed to call on my way north, and which I hope to reach in time, is situated at the northern extreme of Formosa; all this portion of the island acknowledges the authority of China, and the government is administered by Mandarins appointed by the Viceroy of Fuh-kien, in whose province it is included.

The object of my visit is to ascertain if there is any prospect of Hong Kong receiving any coal from hence, and to negotiate for a regular supply for the colony if practicable; the question is one of great importance, the want of coal for our steamers having been at times severely felt.

This is not the first attempt to provide a supply from this quarter; according to a memorandum from Chin-Siensang, a Chinese trader, furnished me by H.M. Consul at Amoy, which states:—"At Ki-lung-tau (Killon) coal of a good description is to be obtained. A British vessel having some years back (about 1842) gone there to procure coal, and the Governor-General happening at the time to be at Tau-shuy* waiting for a fair wind, sent the Hai-fong of that place to prohibit the people from excavating for coal, and also from selling to the foreigners what had been already brought to the sea side.
* * * * * The coal is brought from the hills by carriers, and sold at Tau-shuy for about 20 cents a picul, there being to the picul 90 and odd catties."

Only last March also, H.M. Plenipotentiary opened a communication with Sü, the Imperial High Commissioner, on the subject, an opportunity having been afforded by the capture of some piratical junks by the *Medea*, on the requisition of the Chinese authorities. In his reply Sü says, "As regards Formosa, when your Excellency has shown your friendship by lending your aid in time of need, could I be without the impulse natural to friends, to supply each other's want out of their own abundance? But the island pertains to an adjoining province, and as it is not in my jurisdiction, I could not well write officially concerning it. Coal is an article of daily consumption, and as such procurable at every one of the five ports, where there is of course nothing to prevent your Excellency's government buying it whenever it is wanted." This was to a certain extent the reply evasive. I know not what influence time, and our altered position in this country may have had on the opinions of the Viceroy of Fuh-kien, but can only hope I may be more successful than my predecessor of 1842.

It was not until the afternoon of the 6th that we made the high land at the north end of Formosa; observed numerous fires blazing on the hills after dark, which imagination converted into the waste coal burning at the

* Called by the natives Shuey-chuen-Rio, a village and junk anchorage passed in going into Ki-lung-tau.

pit's mouth, such as is seen everywhere in the coal and iron districts in England, but which daylight disclosed to be only brushwood and weeds, set fire to to clear the land. At 9 P.M. we ran into a very nasty sea, evidently a tide race; wore round and stood off for the night, with every appearance of bad weather coming. In setting the mainsail the leech-rope carried away, and the sail had to be shifted; lost a good deal of ground in consequence. The next morning we fetched in some distance to leeward of the north extreme of land, and worked up in the forenoon with the flood, a weather tide, to the harbour of Killon, anchoring at 1 P.M. in 4½ fathoms.

Ruins of the old Spanish Fort - - - N.E.b.E. ¼ E.
 Extreme of Cay (Low Island) - - - N. ¼ E.

This harbour, but for the remarkable precipitous island of Kelang, which lies just off it outside, would not be very easy to hit; it is a blind harbour in fact, as a sandy spit, projecting from the low island or cay on the port hand in going in, almost conceals the entrance. The country is very beautiful in the vicinity; it is richly wooded to the water's edge, and the land rises in a succession of picturesque knolls and undulating hills, fantastically piled one above the other, the distant prospect being closed by a range of lofty mountains. Few dwellings, or signs of cultivation, are visible, but the brilliancy of the verdure and luxuriance of the vegetation render the *coup d'œil* most striking, a perfect contrast to the sterile-looking main land of China.

Being desirous to communicate with the authorities, as soon as the sails were furled I pulled ashore, up a very shallow boat channel, to the town at the head of the harbour. Only one Mandarin of the lowest grade (a brass button) is stationed here, but he had sent notice of our arrival to his superiors. He received me very civilly, and inquired into my object in coming there, which of course I informed him was to procure coal. This he immediately agreed should be supplied, as there was abundance of it, and promised to return my visit on the following day. This apparent readiness to meet my wishes was only assumed, as I soon discovered.

The town of Ki-lung-tau, or Killon, is a beggarly collection of wooden huts, more filthy than the suburbs of Amoy, and the inhabitants, of Chinese extraction, apparently more poverty-stricken than any community that has hitherto fallen under my observation in this quarter of the world. Being rarely visited by Europeans, they very inconveniently crowded round me to gratify their curiosity; the male portion at least, for, as usual, the women hobbled off to hide themselves, while the children and dogs howled in concert. There was no evidence of any trade, excepting in the bare necessaries of life. The upper part of the harbour dries at low water, and only the shallowest flat-bottomed boats can come up to the town. Three or four Amoy junks and some smaller ones, coasters, lay at anchor about three-quarters of a mile off; I made inquiries, but could not ascertain whether they came for coal.

We witnessed a pretty sight in the evening; the entrance of the

harbour was illuminated by the torches of the fishermen pursuing their avocation. Twenty or thirty boats, each with a huge blazing torch, made of split bamboo, in the bow, had formed a line, and gradually advanced towards the ship, passing on each side of her, in the direction of a sandy beach, other boats passing and repassing between the intervals. When near enough to the shore their nets were shot, but it was too dark to ascertain what success they had, without disturbing them, which under the circumstances would not have been advisable.

The next morning I went to inspect the ruins of the old Spanish fort, which are now almost concealed by brushwood and creepers. Its situation was evidently well selected to command the entrance of the harbour, and the position assigned it on the chart was fully verified by Mr. M'Ausland's and my own observations, during the remainder of our stay here.

As the Mandarin did not make his appearance on board at the time he promised, I procured guides, and proceeded with some of the officers, including Mr. Oultram the chief engineer, all well armed, (as the disposition of the natives is not to be depended upon,) to explore the country.

According to report, all this portion of the island of Formosa is rich in minerals. Montgomery Martin, in his work on China, vol. 1, p. 27, states: "The mountains produce gold, silver, cinnabar, copper, and coal, of which latter some excellent specimens have recently been sent to England." Lieut. Gordon, Commander of H.M.S. *Royalist*, who was sent to survey and make a report on the coal field, found the formation extended for miles in every direction; and I have not the least doubt, if encouragement were given to the natives to work it, it would be found capable of supplying our wants in China to almost any extent. Up to the present time, however, no attempt has been made to obtain this valuable mineral, except in the most primitive manner. A pit, or rather cave, is hollowed out of the side of the limestone rock, a trench dug to drain it, and the seam is then worked until symptoms of a settlement overhead are observed, when the shaft is abandoned and another opened. We were shown two places where the earth had fallen in upon the people while at work, but with that utter indifference to human life characteristic of a barbarous race, no attempt to recover the bodies had been made. Of course driving a shaft or gallery, after our fashion, is quite unknown.

I have elsewhere alluded in this journal to the Tartar policy, which discourages labour in mines, and was therefore not surprised when informed that the Mandarins had forbidden the coal to be worked; this was, in fact, only a confirmation of the memorandum sent me by H.M. Consul at Amoy. The natives, however, appear to be well aware of its value, and work it secretly; we saw quantities carefully covered over with earth, to conceal it, of which our guides informed us no one dare acknowledge the ownership, and as the British merchants at Amoy have cargoes occasionally offered them for sale, it is evident they succeed in smuggling some of it away. I took advantage of an opportunity, while examining a cache of perhaps twenty tons, to call

the attention of a crowd of natives, who had gradually collected round our party, to the advantages that would result to them if they would contrive to send cargoes to Hong Kong regularly. I enlarged upon the benefit they would derive from trading with us; that whereas they were now almost naked and half-starved, they might become fat, wear silk, and turn all their cash into sycee. To this they fully assented, especially one little man, who was very vociferous, and who I afterwards discovered was a spy, sent by the Mandarin, who was so complaisant yesterday, to watch my proceedings. Poor unfortunate people! doubtless they would be too glad to have commercial dealings with us, but what chance have they, while under the influence of such a cruel despotism as that of the Mandarins; even here, with coal at their very doors, they are not permitted to use anything but wood for fuel!

We observed during the day many indications of iron ore, and I returned on board fully impressed with the fact that the mineral wealth of this magnificent country has not been at all exaggerated.

In the evening the weather changed, and looked very threatening, and so heavy a swell set in, that our seining party had some difficulty in getting off before dark. The ship was in four fathoms, there was a long scope of chain out, but a nasty coral reef was breaking only a cable's length astern; as a precaution, therefore, although it was not blowing very hard, except in occasional squalls, I dropped the other bower, and after a very disagreeable night, as our position seemed by no means secure, I got the steam up the next forenoon, and ran inside the coral reef for shelter. Moored in the junk anchorage in a quarter less three, soft mud, with plenty of cable out each way, to prevent the possibility of getting on our anchors, as the rise and fall is said to be nearly 6 feet here, and the ship draws 12ft. 6in. abaft.

We had hardly finished before the Mandarin made his appearance. He brought the cards of two other Mandarins, who, he said, proposed paying me an official visit the next day; affected great surprise that the coals had not been sent off yet, would not hear of any payment for so small a quantity as we wanted, (I had only demanded two tons,) and, in short, pretended great friendship. I had my misgivings of the value of these friendly assurances, which proved not unfounded. Breach of faith in dealing with Europeans, I had often heard, is not considered dishonourable by Chinese officials, and we were soon to experience the truth of the observation.

May 10th. I was on the hills abreast the ship by daylight this morning with a shooting party, and we succeeded in bagging two brace and a half of pheasants, (magnificent birds,) but the cover was so thick it was impossible without dogs to do much. The Flora of these hills is worthy a remark; its splendour can scarcely be exaggerated. The variety and beauty of the shrubs and flowers that adorn them, would astonish even Mr. Fortune, and I most sincerely regretted not having had him with me, for I am convinced many most interesting discoveries would have been made in this perfect *terra incognita*.

About 10 A.M. the Mandarins, two gaunt-looking Tartars, came on board; the hundred days of mourning for the Emperor Tau-Kwang

not having yet expired, they were dressed in sackcloth, without their buttons, and heads unshaven; they were shown round the ship, and, after mutual compliments, we sat down in the gun-room, and proceeded to business. I plied them with cherry brandy and champagne, had the drum, fiddle, and fife, a Bath piano and an accordion, playing away, a harmonious din, while we discussed the pages of the *Illustrated London News*, with the engravings of which they seemed highly delighted. There was a small-arm party practising with ball cartridge also all the time, so the combined effect of the Babel of sounds may be imagined, but not described. My object, however, was accomplished, for they seemed in high good humour, which appeared to be at its zenith when a small present, consisting of cordials, soap, and perfumery, of which the Chinese are very fond, was tendered and accepted. I now thought it time to introduce the object of my visit. All my diplomacy was, however, of no avail; in vain I enlarged upon the advantages of commercial intercourse. Whenever the subject of coal was reverted to, they said the Viceroy of Fuh-kien had given positive orders against its being exported, or even worked, and therefore it was impossible any could be sent to Hong Kong; for the same reason my ship could not be supplied with any, even the smallest quantity, and this after it had been solemnly promised me.

I was much mortified, but contrived to keep my temper, and they took their departure under a salute of three guns, the compliment that custom has accorded to officers of their rank, but which, after what has occurred, I grudging giving them exceedingly.

As soon as they were gone, I received an offer from a China-man to supply me with the coal I wanted after dark. This I declined, not wishing to compromise myself by becoming a party to what could only be considered a smuggling transaction. Shortly afterwards another respectable-looking man came on board, and told me he had a hundred piculs for disposal, and could send it on board immediately. To this offer there was not the same objection, for the Mandarins must be cognizant of what is going on in broad daylight; I therefore agreed to take 40 piculs from him, at a price equivalent to four dollars a ton. As the day wore on, however, and no coal made its appearance, I sent my China-man ashore to ascertain the reason, and he returned with the intelligence that the Mandarins had seized the poor fellow's house and goods, and that he had fled the place with his family.

I might have anticipated this finale to the negotiation, and yet it annoyed me very much. My first impulse was to land a party and take the coals, which were in a store close to the ship. Violent proceedings would not, however, have altered the case; we should have got them easily enough, as the town was under our guns, and no effectual resistance could have been offered, but the principle would have remained, to be acted upon with ten times more ill will on a future occasion. I therefore quietly pocketed the affront; it was impossible, however, to avoid a serious reflection upon the humiliating position in which we were placed. Here was a British man-of-war, literally unable to procure her legitimate supplies, in a friendly port, except by force or

stealth! It might have been urged by the authorities, as an excuse for refusing them, that this was not one of the ports opened to us by treaty; but if this argument is to be considered valid when applied to men-of-war, I can only say the sooner the treaty of Nankin is cancelled the better!

Saturday, May 11th. Disappointed with the result of my mission, I stood out of Killon harbour this morning. Lifted the propeller rather too soon, and, owing to light baffling winds, it seemed for two hours doubtful whether we should clear the reef that projects from the point to the westward of Kelang Island, without getting the steam up again. However, the breeze came at last from N.E.b.E., and we made a very good course; fetched into Wanchou Bay, and being favoured by beautiful weather, had a good opportunity of testing the correctness of our charts of this part of the coast, for which I am indebted to the captains of the opium ships in the Min. Worked up close in shore, in sight of the remarkable Taichou group, numberless fishing boats in every direction round us. Soundings from 10 to 15 fathoms.

May 14. The wind died away this afternoon, but the calm did not last long, and before 8 A.M. on the 15th, the ship was going nine knots, with a fine breeze at East.

At noon the north end of the Great Kewsan Island bore W.b.N. $\frac{1}{2}$ N.; at 3 P.M. we passed about a mile and a half to the eastward of Ton-Ting Island. The weather now changed, and we ran into a fog so thick, that at times we could scarcely see a cable's length ahead; but the islands composing the Fisherman's group are steep to, and the distance to be run was so small, that I ventured to stand on, taking the studding-sails in first as a precaution. About 5 o'clock we caught sight of two islands in a momentary clear, and got through safe between them; it continued as thick as ever after dark, so at 10 P.M. I dropped the anchor in mid-channel, just as the flood tide had begun to make in our favour.

It was dead calm at daylight of the 16th, with a dense fog, which effectually prevented any moving. The moon is four days old, and the ebb tide was ascertained by the log to be running at the rate of four and a half knots; water much discoloured. About noon the fog cleared off, and we started with the sea breeze, which carried us within six miles of Gutzlaff Island, when the tide forced us to anchor again. Since entering this Archipelago we have had incessant rain, and there is scarcely a dry rag in the ship. I did not furl sails either last night or this evening, they were so very wet, but there is no fear of the anchor starting in such holding ground as this is.

(*To be continued.*)

REMARKS ON THE CURRENTS IN BEHRING STRAITS, AND ON THE ARCTIC COAST OF AMERICA, *By Mr. John Simpson, Surgeon, H.M.S. Plover.—August, 1852.*

These remarks on the currents passing through Behring Strait and along the north coast of America may not perhaps be deemed useless at a time when the presence of expeditions in search of Sir John Franklin in these seas excites so much interest; and not less so as they will tend to correct the erroneous views given in some of the most authentic current charts of these regions lately published. The main streams only have been alluded to, without noticing the eddies and counter-currents of local or temporary existence.

Through the large opening between the American and Asiatic continents, occupied by the Aleutian Islands, there is an almost imperceptible set from the Pacific Ocean northwards, the waters of which, retaining the impulse given to them by the earth's rotation in a lower latitude, draw towards the American shores and throw themselves into Norton Bay. They are thence driven with increasing force along the coast line of America, opposite the Island of St. Lawrence, diffusing themselves to the northward of that island to be carried with lessened speed through the Strait of Behring,* after receiving in the latter part of their course the fresh water stream falling through Grantley Harbour into Port Clarence. Spreading again over a larger space they receive a further tribute from Kotzebue Sound, which is very palpable off Point Hope. Again, in the latitude of Icy Cape the earth's rotation gives them an easterly set, forming an almost constant current along the north coast of America to Point Barrow, whence it pursues a direction N.E. Throughout all this course the current is subject to retardations, and even surface drifts in an opposite direction, caused by northerly and north-easterly winds; but it is also occasionally accelerated by S.W. and westerly gales.

In the absence of actual observations for determining the currents in these seas, the proofs of the existence of such a one as that described are collected from other circumstances, the chief of which are as follow:—

In the beginning of summer the eastern side, south of the strait, is free from ice, and Norton Bay itself is usually cleared as early as April. After the middle of June not a particle of ice is to be seen between Point Spencer and King's Island, whilst the comparatively still water north of St. Lawrence Island is hampered with large floes

* The Straits of Behring are here understood, in their restricted sense, to be the interval between the East Cape of Asia, and the Cape Prince of Wales of America, in which are situated the Diomed Islands. Between these and the Island of St. Lawrence is understood to be Behring Sea; and south of the last named Island, with Norton Sound or Bay on the one side, and the Gulf of Anadyr on the other, is the Sea of Kamtschatka.

The compass points mentioned are true not magnetic.

until late in July. This can be satisfactorily accounted for by the existence of a northerly current of warmer water, partly driving and partly thawing the ice from the American shores.

There is scarcely a particle of driftwood to be had on the Asiatic coast from Kamtchatka to East Cape, whilst abundance is to be found in Port Clarence and Kotzebue Sound, as well as along the whole of the American shore from Norton Bay to Point Barrow. Although it has been found that pine-trees sixty inches in girth grow here, on the banks of American rivers, within the sixty-seventh parallel of latitude, yet from the frequently larger size of the trunks and their great abundance, it is evident these northern regions, including Norton Bay, cannot supply the quantity; and more southern rivers, whether Asiatic or American, or both, must be looked to for the immense multitude of water-worn stems and roots strewed almost everywhere along the beach. Their southern origin would also seem to be indicated by the presence in many of them of the remains of the *teredo navalis*, which could hardly retain life throughout the rigour of eight or nine months' frost every year. Captain Wellesley mentions having picked up on the north side of the entrance to Port Clarence, a buoy which had been previously lost from the anchor of the *Dædalus* off the Island of St. Lawrence.

It would seem that between St. Lawrence Island and the coast of Asia the current is variable and seldom entirely free from ice until late in July, hence the many disasters to whalers in 1851, and the difficulties the *Dædalus* and *Enterprise* encountered the same season by taking the western passage, whilst an open boat from the *Plover* was able, between the 17th of June and the 1st of July, to make the run to Michelowski, in Norton Bay, and back without her crew seeing any ice. The *Amphitrite*, in 1852, was able to reach Port Clarence on the 30th of June, by the eastern passage, without seeing but one floe which had probably been recently released from some of the nooks of Norton Bay, although late in the same month the master of a whaling ship reported that the ice was still fast as low as latitude 58° and 60° between the longitude of Gore Island and the coast of Kamtchatka.

From the recorded observations beginning with Captain Cook, continued by Captain Beechey in the *Blossom*, Captain Kellett in the *Herald*, Captain Moore in the *Plover*, Commander Pullen in the *Plover's* boats, and again by Commander Maguire in boats this season, 1852, it appears that the coast from Icy Cape to Point Barrow is frequently packed with ice in the end of July and the beginning of August. The cause of this seems to be the occasional prevalence of westerly and north-westerly winds, which drive the pack upon the coast, again to be cleared away by the north-east current along shore as soon as these winds have spent their force; and southerly and south-east winds will have the opposite effect of driving it in a more northerly direction and leave the navigation more open than usual.

At Icy Cape the current on Captain Beechey's chart is marked as running both ways along shore, but not, it is presumed, with the regu-

larity of a tidal ebb and flow. During the continuance of an easterly gale, from the 29th of July to the 4th of August, and a fresh breeze for two days following, at that cape, floating substances were observed to drift slowly to leeward, whilst the waves were short, irregular, and much more broken than usual, to a distance of twelve miles off, as if caused by a weather current; this may, however, be partly owing, for half that distance, to the shoals extending four miles off the land. On the 3rd a whaling vessel stood in to within six miles of the shore, tacked, and stood out again, making such progress to windward as a sailing vessel could only do when favoured by a strong weather current.

From Icy Cape to the Seahorse Islands in addition to driftwood there is strewed along the beach a quantity of coal, which, though much water worn, may, in some of the indentations, be collected in sufficient abundance and bituminous enough to make an excellent fire for cooking. It is of the sort called glauer, or candle coal, and some of the pieces are sound enough to be carved by the natives into lip ornaments. At the Seahorse Islands it is found as fine as small gravel, and on digging into the beach is seen to form thin alternate layers with the sand; but between Wainright Inlet and Icy Cape it is gathered in knobs of a convenient size for fuel. This may be taken as a further evidence of the set of the current, as the nearest known point whence the coal is brought is that marked on the chart at Cape Beaufort.

The whole extent of coast from below Icy Cape to Point Barrow is bordered by a beach of gravel, which has likewise a southern origin, and determines the form of the continent, offering as it does an effectual barrier to the encroachments of the sea, which would otherwise speedily undermine the earth cliffs behind. All that can be seen from the seaboard, landward, is a flat alluvial plain, seldom exceeding twenty feet in elevation, and containing numerous pools or lagoons of fresh water; but without a tree or bush to relieve the view.

The tides are hardly appreciable and very irregular at Kotzebue Sound and Port Clarence. Then, the sea usually retains a very low level during the prevalence of northerly, north-easterly, and easterly winds; and the highest levels occur with southerly and south-westerly gales. During a stay of seven days at Icy Cape, with a prevailing gale at east and E.N.E., the same low water level obtained as much as four feet and a half below the highest surf mark, the undeniable effects of westerly and S.W. winds. With the drifted material left on those marks where the shore has a westerly aspect were several varieties of dead shells, identical in species with those previously dredged from the bottom of the sea in deep water (twenty-five to thirty fathoms) in the Straits and north of them. If, as is presumed, these were deep sea shells they would afford further proof of the easterly set of the current, as the waters of the sea are not agitated by the most violent storms to such a depth; and if their habitat be equally in shallow water, it is difficult to imagine why they are not found in equal abundance on those parts of the shore exposed to north-easterly winds.

As far as Icy Cape this coast current is smaller than that sweeping thence to Point Barrow, and there is reason to believe the increase is derived from the waters on the north coast of Asia, where the loss may possibly be supplied from that portion of the Gulf Stream that flows towards the north cape of Europe. Standing on Point Barrow it may be seen that the body of moving water is broad, and soundings have shown it to be also deep. Its mean speed is certainly not less than one mile an hour in a direction nearly north-east, but it is of course a matter of mere conjecture to what distance it follows that course, though Davis may be assumed as its probable outlet.

LOSS OF THE BRIG MARY AT NATAL, WITH EARLY RECOLLECTIONS
OF THAT SETTLEMENT.

The recent events that have drawn public attention to Natal, have recalled to my memory scenes of that now interesting place, as it was in the years 1824 and 1825. In those days it was little known to Europeans; the native Zoolas were then ruled by the brother of the present Chief Dingan, the invincible Chaker, when his sway extended from the frontier tribes of the Amonpondas on the west, to the Portuguese settlement of Delagoa Bay on the east.

To relate the many interesting and tragical scenes witnessed by me during a three years' residence amongst those savages, at an early period of my life, (being but a boy thirteen years old,) would be beyond my power. They pass in review before me like a painful and romantic dream, yet with all the force of reality that early impressions are calculated to produce on the mind. Little connection, therefore, can be expected when narrating those events, on which I now look back through a long vista of years; and had not great events agitated this portion of Eastern Africa recently, bringing my old friends the Zoolas to my recollection in a most interesting light, they would have passed away "as a tale that is told."

I may here remark, that many of my old native friends will yet recollect the little Molongo, who told them with all the eloquence of their language of the power and greatness of his King, the truth of which they have lived to see wonderfully verified. Little did they then dream that the successors of that king would rule over the destiny of the Zoola nation. They may remember that I told them, though our king was great he was also merciful, kind, and benevolent; the protector of the stranger and the weak from the violence of the strong. This I trust they have also experienced at the hands of those who have gone amongst them, and that they have been enabled to distinguish the servants of our king from the rude and lawless boors by whom they have been assailed. I owe them a debt of gratitude that leads me to wish and to hope my countrymen, whosoever they be, will

exercise that mercy and kindness toward them, which I experienced at their hands in the day of their rule. Those are yet living to whom I am indirectly indebted for my life, and I trust their goodness will meet a just reward by kindness and forbearance at the "white man's hands."

While I rejoice to contemplate the faint ideas that I endeavoured to impress them with of the great King of Kings, my Baba Pizoola, to whom I looked up for protection, I know they will in time be more fully impressed on them by the pious exertions of those worthy missionaries, who with unwearied zeal and labour are devoting their time and talents to the great work of their salvation. Of the country I need take little notice, as it is now known from the later and better description of recent intelligent travellers, that would render superfluous any attempt of mine to describe its beauty or resources. But I shall ever retain a vivid recollection of its "woods and wilds and solitary glens," the beautiful ever-verdant and luxuriant valleys of the Umgainih, the towering forest-clad heights of the Umboltalilo, and the peaceful serenity of the profound silent depths beneath them. Oft have I wandered with weary foot, where nature reigned in solemn, silent majesty; where the patriarch of the forest raised his majestic form, that had withstood the storms of a thousand years, affording a home and shelter to many a happy family, while his wide extended arms, scarred by the blasts of time, stretched affectionately over the heads of a young and rising generation, among whose peaceful foliage they would one day fall to repose in peace. When I recall to mind my frequent solitary wanderings through the mazes of their silent gloom—a silence how pleasing to contemplate! for man had not then assumed dominion to disturb its primitive repose—a feeling of regret comes over me. Those scenes have lost their sublime and peaceful charm, that hallowed repose with which they are associated in my mind. I mourn the change. I lament the fate of that great menagerie which lived in quiet and uninterrupted security, now alas invaded by the destroying hand of the Boor, armed with the destructive implements of death devised by civilized man, to wage a deadly and exterminating war among those once happy families of the creation. How often have I seen them disporting and gambling before me, happy in the security of their natural and never disputed home, provided by a wise and beneficent creator, abounding in all the beauties and grandeur of a land overshadowed with forests as a "Land of Promise."

The following extract from the journal of Mr. James King, our lamented Commander, will better describe some of the casualties which led to the unfortunate loss of our vessel, than any account from memory.

"Sept., 1825. Nothing of the least consequence happened until making the land, except the usual change of wind, &c., which we observed on the 29th about noon, near St. Lucia. Our motive for making so far to the eastward, was to enable us to visit Natal at discretion. Had we made only a few miles to the northward and eastward, and no opportunity of landing, with the wind eastwardly, to-

gether with the current, we should in all probability have been swept to leeward of our port.

“We experienced this daylight light baffling winds; however, with the assistance of the current, we were the next morning in a good position, Natal Head bearing S.W.b.W. three leagues distant. On my former voyage I ascertained the depth and nature of the bar, time of high water, &c., &c., which by calculation had by this time arrived. However having no wish to enter the harbour with the vessel, we lowered the whaleboat, which had been previously prepared with a few days’ provisions for myself and others, with instructions for the vessel to lay off and on shore, until we had some tidings of those we had come in quest of. The bar proved too heavy to be attempted in the boat, and previous to her return the vessel was anchored in a good position, to enable her to stand out of the bay if required. Unhappily, however, she drove with an increasing gale. The object was now to get the boat on board, as there was no other alternative, and with difficulty she succeeded in reaching the vessel, which had now brought up with nearly a whole cable. Veered the boat astern, and employed in getting all clear for making sail, to stand out until a more favourable opportunity offered; but alas! our attempts were by this time evidently fruitless, the vessel scudding forward in a most turbulent sea, and the rocks off the point extending too far to weather, and on the opposite tack we could do nothing. One opportunity presented itself, which must speedily be seized, otherwise I knew the tide would not admit of success. The harbour was now my object, although if we failed in getting over the bar, the chances were that every soul might have perished, or otherwise left destitute and at the mercy of the natives. Not a living soul to be seen on shore, added much to our distressed situation. Had the natives come boldly out of the bushes, we should have been under no apprehension in landing, having only the violence of the sea to contend with, which might have been surmounted; but to experience all the fatigue of shipwreck, and at last be obliged to give ourselves up as their prey, was by no means a pleasant idea. However it fortunately happened that we were so much engaged with the vessel, that our thoughts, I may venture to say, were seldom devoted to anything else.

“I now consulted with the officers and people, as their lives and the safety of the vessel entitled them. They readily agreed that my proposition was the best and only method. We therefore turned to with one heart, got a spring on our cable from the port quarter, and the head sails, fore-topsail, and foresail, ready for casting and setting. We cut our cable, and in less than three minutes after getting before the wind, (all anxiety,) she settled between two heavy seas on the bar, and struck fore and aft with a most awful surge; the next sea almost overwhelmed us. She again and repeatedly struck with the same violence, which broke off the rudder, and started her floors; at this time she made a considerable quantity of water. The ebb tide making out strong, caught her on the port bow, which was in deep water, and directed her head to starboard, out of the proper channel. All our

attempts to prevent this by bracing the head sails to, and setting after sail, proved ineffectual. The tide had now considerably left her, with her head settling into deep water, and rolling desperately; the sea too heavy to risk a boat, therefore the only hope now remaining was to get a hawser to the beach, and have it conveyed to the rocks on our port beam, which on the flowing tide might assist the vessel's head to port to get into a better position, (although at this time almost a perfect wreck,) where we might be able to save such necessaries as would prove useful, for in her present situation on the bar, the sea would in a very short time break her to pieces.

"The whaleboat had been previously stove and sunk, jollyboat too small, and the longboat, on examining her, we found that in consequence of the sea displacing her from the chocks, a plank in the bottom was much broken, but was soon repaired and chanced. In the interim, and at intervals, succeeded in cutting away the sails from the yards, as also lightening the vessel with everything that was likely to find its way to the beach, having already observed many parts of the wreck washing up in executing this duty. The conduct of the crew was admirable. Our boat being ready, we succeeded in launching her, but was almost immediately filled alongside by the heavy surges, which continued throughout making a fair sweep over us. She was veered under the bows, and bailed out for the purpose of carrying a hawser to the rocks, which we could not succeed in doing, the boat having swamped several times. Our smallest bower anchor was carried off to the port quarter with the cable, and a purchase in the main boom-end to carry it clear of the vessel, and let go, which had a trifling good effect, but the scope was too short. The object of doing this was to prevent her forcing upon a bank directly ahead, between which and our present situation was a deep channel. We succeeded at length in coiling a quantity of new and small line in the boat, for the purpose of conveying the hawser to the shore. Myself and four of the crew lowered ourselves from the bowsprit, and accomplished this part so far as to reach the beach, but owing to the strong current, and the line getting entangled with the rocks, produced no good effect. We were not only disheartened by this unfortunate circumstance, but had our dismal wreck and shipmates to view in the distance. To return again to them at this moment appeared almost an impossibility, but to attempt it we determined on, and after much difficulty, having shipped several heavy seas, we providentially succeeded. Previous to our arrival on board, everything had been done to lighten the vessel, by throwing overboard such things that were most likely to reach the shore, and our wishes in this particular were gratified in part, which gave us fresh vigour.

"The tide was now half-flood, and every article moving about in the hold, when a fortunate sea forced her from the bar to the inner bank; I say fortunate, because all our former attempts to remove to a more eligible situation proved fruitless; and by having the wreck on this bank, it appeared we should have a prospect of saving some articles of consequence, at least the pieces from the wreck, in which hope we

may thank God, we were not disappointed to a great extent under all circumstances. Eleven hours having now elapsed since first striking, we naturally expected the party we came to assist had been murdered.

The vessel kept still gaining to the beach, but we could not attempt to land any thing, and not a most distant hope remained of ever getting her again afloat. To save the carpenter's tools was now the principle object, to enable us to build a little craft as the only prospect of getting to the civilised world; but how often does it happen that those articles which are most anxiously sought to be preserved in cases of shipwreck, are the first to give disappointment; this happened in the present unfortunate instance; the vessel having been thrown on her beam ends by a heavy sea, almost every movable article was washed overboard. Among others of consequence were part of the carpenter's tools. Some of the crew succeeded in saving their clothes in part, others were not so fortunate and lost their all: and I have much pleasure in acknowledging my entire gratitude for the indefatigable exertions of Mr. Hutton and crew during this unfortunate catastrophe, with but one exception. Never did I witness men more ready to obey, some at the imminent peril of their lives. A few only composed the crew of our ill-fated vessel, and few, I may venture to assert, could excel them, though I never had the misfortune to be shipwrecked before during eighteen years' service at sea, and Heaven forbid I ever should again. To the merciful goodness of Providence we all acknowledged our gratitude in thus preserving us through this disastrous adventure.

On the morning after our vessel was stranded on the bar we were obliged to abandon her, a heavy sea during the night having struck her and thrown her on her beam ends, which compelled us to take shelter, with great difficulty, on the broadside of the ship, where we passed a most miserable and anxious night. Tremendous seas were dashing against her with the deafening report of cannon which every moment we expected would wash us off the wreck.

Threatened as we were by the raging sea and the unabated fury of the storm, little hope could be entertained of reaching land, and then we might only have escaped being swallowed by the waves to be devoured by wild beasts or cruelly murdered by the savages. Daylight was not even looked forward to with hope, for it would but reveal to us more awfully our perilous condition, and but tantalize us with the flattering and delusive prospect of a shore, which, if reached in safety, would be but a change of horror. But still on passed the hours of this painful night: sixteen human beings clinging to the channels and dead eyes on the broadside of the ship, balancing in their thoughts the chances of being swallowed up by the waves, or to be mutilated and devoured on reaching the shore by cruel and bloodthirsty savages. How little then in such circumstances would a sight of the glorious sun minister to the relief of my distressed mind; no language could express the feelings I experienced in those awful hours, when a watery grave, or a thousand deaths too fearful to contemplate awaited us. Death has no power, no horrors, beyond this. What words can describe the inward wild emotions at such a moment, and the terrible

conflict that passes there, when time is about to close on us, and an unknown eternity is about to dawn. Alas! what a bubble does then appear the great and absorbing interest of this world, which has engrossed so much of our thoughts and had given us so much disquiet. To me, although so young, how evanescent did life appear when at that moment standing meditating on its close, all those feelings rose in review before me. When I look back and contemplate these moments of despair I trust that this early lesson of God's providence will ever stimulate my gratitude to him for my deliverance. That providence so signally manifested in that hour of peril taught me the truth of those lines,

" Judge not the Lord by feeble sense,
But trust him for his grace ;
Behind a frowning providence
He hides a smiling face."

Night with all our fearful forebodings passed away, and never did the sun rise on a more helpless and dejected being than I was. Indeed I cannot say that any of my companions in misfortune appeared to be much better. The only one who seemed to smile on our misfortunes was the captain: he indeed bore the appearance of that cool and unsubdued calmness of mind, so essential in the hour of peril, when our vessel was thrown on her beam ends, which happened about midnight. Her masts were all cut away to relieve the hull, and as the sun rose a wild scene of ruin and destruction was presented to our view. Before us lay the smooth and even strand on which the waves of the angry South Atlantic lashed in vain, while, further on, the green hills covered with large stately trees now bending to the storm; behind us, in endless succession rolled on the mountains of accumulated waters with white foaming crests, bursting over our devoted bark, while the whole line of strand abreast of our position, and far as they extended was strewn with wreck; masts, yards, sails, cordage, all lay scattered in endless confusion amidst the angry billows, the whole presenting a scene of grandeur and desolation more easily imagined than described. Such must ever be associated with my recollections of Natal. This day, indeed, presented to us a melancholy spectacle; our proud floating home that had but a few short hours before been gaily dancing on the waves, with a dozen light and buoyant spirits enjoying the comforts and security of their wooden walls, now lay shattered and mutilated a mere wreck on which there was no longer shelter. It is a sad spectacle at any time or place to contemplate the wreck of a noble vessel, but sadder still to those who from it can see no friendly shore of refuge, and the fate of their bark, in all human probability, involved that of her crew.

Towards noon the gale had abated, and the waves having forged the vessel on a sand bank, at low water the sea had become comparatively smooth, which enabled us to look to our boats, which having been washed overboard and swamped under the lee of the brig, had fortunately been protected by the hull. One was useless, but the

longboat, which was fortunately uninjured, was cleared of water and loaded with provisions and despatched for the shore. On reaching it we had the mortification of seeing her turned bottom up the moment she touched the beach, and our provisions were soon scattered along the strand, among which were two or three bags of bread. Fortunately none of the boat's crew were lost, and but one man received a slight injury.

The boat having been got up and launched again returned on board, and the sea continuing to subside, we resumed the landing of provisions and anything come-atable that was likely to become of use.

Fearing to remain another night on the wreck, in case of her breaking up or of being washed off into the sea on the flowing of the tide, it was resolved that we should take up our quarters on terra firma. A place was accordingly selected for pitching our tents, and by sunset, with great exertion, we had succeeded, by picking up spars and sails from the wreck on the beach, in completing a shelter sufficiently capacious for the accommodation of our whole party, at least to protect us from the night rains; and we collected sufficient fuel to preserve a blazing fire to keep off the wild animals, with which the neighbouring woods abounded. Having duly arranged our tents and secured within them what provisions were landed from the wreck, we made our fires around them, and setting a watch, the rest lay down to repose after the fatigue of this day. But, notwithstanding the vigilance of the watch in keeping up the fires, besides occasionally discharging fire-arms in the direction of the woods, about midnight one of our finest men was snatched away and carried off by a tiger! This was sufficient to arouse us, but the noise occasioned by the howling of these animals had become so appalling that all further sleep was out of the question; and we had all to stand until daylight dawned with muskets presented in all directions, expecting every moment to be attacked by these ferocious beasts, whose howling had become literally deafening from their approaching to within a few paces of our tent. Thus was passed the first night of my residence at Port Natal. On the following day the weather was fine, the sea smooth, and our vessel lay in the same position as when abandoned the previous evening. We therefore resolved to take advantage of the fine weather and smoothness of the sea, to land the remainder of the materials and stores that were left between decks. There being six feet water in the lower hold at low water, the tide flowing in and out of the vessel, obliged us to confine our operations to what could be got at between decks, when at low water we could fish up articles from the lower hold. We launched our boats and pushed off to the wreck, which could now be reached with perfect safety in the smallest boat, and commenced removing every thing into the boats that they could carry. By noon we had succeeded in landing two six-pounder carronades with which to fortify our position in case of need. In the afternoon several of the natives made their appearance. They were males, perfectly naked, jet black, and had a singular bright shining appearance from their skins being rubbed with grease. They seemed to keep aloof as if

afraid to venture near our tent, and appeared to look on with much astonishment, and made many singular gestures, which we could not comprehend as to whether they were friendly or hostile. Towards evening, while on our last trip to the wreck, we observed another party of natives, who had made more bold than the preceding, having assembled close to our tents; shortly, however, we perceived a tattered rag hoisted on a pole, supported by what appeared to be either a man or a woman in European garments. On our landing we found the person to be a hottentot woman of Mr. Farwell's party, who spoke to us in good English, and gave us some pleasing and interesting information.

(To be Continued.)

BOTTLE PAPERS.*

(Continued from our last volume, p. 676.)

THE PRIMA DONNA.—Track No. 2 a.

Another bottle was picked up on the same beach during the early part of last week, enclosing a card. It was thrown overboard from the *Prima Donna* schooner, off Cape Coast, in 1850, the month being obliterated. This bottle must first have been carried southward by the Guinea current, then westward by the Equatorial current, then by the Guinea current along the coast of South America to the Gulf of Mexico, and from thence by the Gulf stream northward and eastward to the Cornish coast.—*Shipping and Mercantile Gazette*, Jan. 30th, 1851.

AGNES SOPHIA.—Track No. 3 b.

C. G. Station, Shoreham, Sussex,
3rd August, 1848.

SIR,—I beg leave to inform you that about 12h. 30m. P.M., this day, a black bottle was picked up on the beach, containing the paper enclosed, which appears to have been thrown overboard from the *Agnes Sophia*; the paper was wet and torn, but I make it out to be.

“Thrown overboard from the *Agnes Sophia*, of Padstow, in lat. 47° 53' N., and long. 7° 34' W, from Lisbon ten days, bound for London. June 8, 1848.

“WILLIAM JENKIN.”

I am, Sir, your obedient servant.

FRED. DREW, Lieut. R.N.

To Captain G. S. Reynolds, R.N.,
Inspecting Commander, Rottingdean.

Coast Guard Office, 7th August, 1848.

SIR,—I herewith transmit you a letter I have received from Capt. Reynolds, Inspecting Commander of the Rottingdean district, transmitting a report from Lieut. Drew, of the Shoreham station, of a bottle having been picked up containing a notice, and which was thrown overboard by the *Agnes Sophia*, of Padstow, on her passage from London.

I am, Sir, your obedient servant,

E. SPARSHOTT, Deputy Comptroller General.

To Admiral Beaufort, &c., &c., Admiralty.

* See the Track Chart in our last November number.—Ed.

PACKET SHIP ENGLAND.—Track No. 3 b.

The following has been received from Mr. Fargher, editor of the *Mona's Herald*, respecting the missing packet-ship *England*:

Douglas, Isle of Man, Sept. 18th, 1845.

SIR,—A bottle was picked up on Tuesday evening last, about four miles south-east of Douglas Head, by the fishing lugger *Kite*, Morrison, containing a piece of paper, on which was written in pencil:—"Packet-ship *England*, from Liverpool, December 11, 1844, long. $98^{\circ} 7'$, lat. $45^{\circ} 10'$; (reverse), lost quarter boats, 10 feet water in the hold; no vessel in sight." The paper and bottle are both in my possession.

I am, &c., R. FARGHER.

[We are inclined to think that the longitude is 8° , as the vessel only left Liverpool on the 1st December, and the paper is dated 11th. It confirms the suspicion that the unfortunate *England* foundered with all on board. In p. 272 we noticed her absence.]

SHIP CAROLINE.—Track No. 11 a.

CORUNNA, Dec. 7.—A bottle containing a written paper, of which the following is a translation:—"Johannes Janssen, of Leer, (East Friesland,) on board the ship *Caroline*, of Papenburg, commanded by Capt. H. A. Klein, from Newcastle, bound with coals to Barcelona, was 26th October, 1849, in lat. $43^{\circ} 8' N.$, long. $10^{\circ} 51' W.$; ship in bad condition, very leaky. The finder of this is requested to make it known for the information of our families. (Signed) JOH. JANSSEN, Mate," was picked up at sea, 4th inst., by a fisherman arrived at Ferrol.—*Shipping Gazette*, 17th Dec.

No. 11 a.—It has taken a westerly course, like the rest in its vicinity.

SHIP ANN.—Track No. 11 b.

CURRENTS OF THE OCEAN.

Steam Packet Office, Belfast,
March 20th, 1848.

SIR,—At the request of Mr. Lewis, of the ship *Ann*, of London, I send you the latitude and longitude in which he dropped a bottle overboard, on the 2nd of January, off Co. Derry, with a letter in it for me. Lat. $52^{\circ} 10' N.$, long. $12^{\circ} 00' W.$ The bottle was washed ashore at Perlock, in the Bristol channel, on the 12th of March last.

I remain, your's, &c.

To the Editor *N. M.*

JOHN MONTGOMERY.

"Barque *John Hutchinson*, from Odessa to England, January 2nd, 1848, running before a heavy S.W. gale, with a high sea, lat. $44^{\circ} 45' N.$, long. by chronometer $12^{\circ} 35' W.$, when the bottle, containing this paper, was thrown overboard.

(Signed)

R. LEIGHTON, Master.

SHIP OSPREY.—Track No. 12.

Trinidad, 10th August, 1822.

SIR,—I have the honour to transmit to you the enclosed document, taken out of a bottle thrown on the coast of Mayaro in this island, on the 28th ult.

I have, &c.,

J. W. Croker, Esq., Admiralty.

A. W. YOUNG, A. G.

"The bottle which contains this card was thrown into the sea in lat. $6^{\circ} 13' S.$, long. $16^{\circ} 35' W.$, at noon, on the 27th of January, 1822, from the ship *Osprey*, of Glasgow, which sailed from Greenock on the 20th of February, 1820, on a trading voyage round the world.

* There must be an error in this.

"Whoever finds this is requested to insert a note of the time and place in some Literary or Political Publication, with a view of establishing facts relative to the currents of the ocean. Eighty-seven days from Calcutta towards Greenock. All well."

BARQUE MOHAWK.—Track No. 12 a.

CURRENTS IN THE SEA.—A slip of pasteboard, with writing on both sides, put into a bottle, was found near the larger of the Saltee Islands, off our coast, on Monday. The writing on one side is: "Barque *Mohawk*, from Singapore to London, March 8, 1847; current papers. Please to send notice to the Editor of the *Nautical Magazine* when and where found, lat. 49° 60' N., long. 12° 29' W.; W. DOUGLAS, Master." On the other side, "Lat. 49° 00' N., long. 15° 29' W.; W. DOUGLAS, Master." Underneath this is now written, in compliance with the request to state "when and where found," "West of Large Saltees Island, May 20, 1847."—*Times*, June 7th.

[It appears that the above was originally copied from the *Wexford Independent*; we are indebted to the London journals for the information.—*Ed. N. M.*]

H.M.S. EREBUS.—Track No. 13.

"The bottle containing this paper was thrown overboard from H.M.S. *Erebus*, on the 14th Oct., 1839, in lat. 36° 20' N., long. 12° 40' W. Whoever may find it is requested to forward this paper to the Secretary of the Admiralty, London, together with a notice of the latitude and longitude of the spot where found. Wind moderate, west; all well.

J. C. ROSS, Captain.

Found yesterday on shore by two fishermen at Cape St. Mary.

Faro, 19th Dec., 1839.

THOMAS PINDER, British Consular Agent.

SLOOP LILY.—Track No. 13 a.

H.M. Sloop *Lily*, 23rd February, 1845.

Lat. 39° 44' N., long. 12° 1' 30" W., wind north-westerly.

DEAR SIR,—Having just read in your *Nautical* of a bottle from the brig *Flora* reaching its destination, and having for some days experienced a strong S.E. set, I have been induced to make use of a similar conveyance, not only to ascertain the drift of the current, but to beg you will kindly remember me to my old friend, your brother, G. C. Becher, of Priory-place, and if not trespassing too much, to beg you will forward the enclosed letter.

I remain, dear Sir, your obedient servant,

JOSEPH W. WILKINS, Master.

"H.M. Sloop *Lily*, at sea, 23rd Feb., 1845.

"Lat. 39° 44' N., long. 12° 1' W.

"DEAR SIR,—We have been now nine days at sea, having left Spithead on Friday week. The weather has been very stormy in coming down the Channel, and in crossing the Bay of Biscay, but I am glad to say that all on board are in good health, and we expect to reach the island of Madeira in two days, when I may send a letter to Scotland. I have put this letter, among others sent by the officers of the ship, into a sealed glass bottle, and committed it to the deep. Where it may drift, or whether you will ever receive it, I know not; but as we are now in the midst of the current setting into the Straits of Gibraltar, it is possible it may be carried up the Mediterranean. Should it reach you, keep a note of where it was picked up, if you hear, as the great object of sending such letters is to ascertain the direction of the currents of the ocean. With kindest feelings of esteem and affection to you and all inquiring friends, and with a sincere desire that the prayer for the recovery of your health breathed from the deep may be heard by Him whose ways are in the sea,

"I am, dear Sir, your's ever faithfully,

J. Brown, Esq.

"G. BROWN."

H.M.S. PANDORA.—Track No. 13 b.

Foreign Office, Sept. 23, 1851.

SIR,—I am directed by Viscount Palmerston to transmit to you, for the information of the Lords Commissioners of the Admiralty, a paper received from the British Vice Consul at Lanzasote, in a despatch from which the following is an extract.

John Parker, Esq., M.P.

“I take the liberty of enclosing to your Lordship a paper picked up in a bottle at Corrulejos, Island of Fuerteventura.”

I am, Sir, your most obedient, humble servant,

H. W. ADDINGTON.

“H.M.S. Pandora, 10th March, 1851.

“Lat. 38° 31', long. 14° 2', running from Cork to Madeira, fresh N.E. wind, current in last 24 hours S.S.E., 13 miles.

“BYRON DRURY, Commander.”

BARQUE EMERALD.—Track No. 14.

A bottle from the *Emerald*, Captain Nockells, bound to Jamaica, 17th Dec., 1831, in lat. 36° 40', long. per chron. 12° 32'. Found on the north side of Anegada, 8th January, 1833. The winds for the last three days, previous to the 17th of December, were from North and N.W. to S.W. For eight days preceding these it blew a continued and heavy gale from S.W. and W.N.b.W., the bark lying-to the whole time, and drifting from lat. 41° 38', 237 miles to the northward.

LADY LOUISA.—Track No. 15.

SIR,—Noticing the interest you take respecting bottles throwing into the sea, for the purpose of ascertaining the currents of the ocean, I beg to transmit the following particulars of a bottle thrown overboard by me, when on a voyage to St. Michael's, in 1830, and which was picked up on the French coast near Bayonne, as appears by the following letter:—

“London, 20th December, 1830.

“A sealed bottle was found on the coast of Lit, department of Landes, province of Bayonne, on the 14th October last. It contained a paper written the English language, of which the following is a translation:

“Monday, 2nd February, 1830, at 3 P.M., on board the *Lady Louisa*, Capt. Pallant, bound to St. Michael's, longitude 13° 45' west, meridian of London, latitude 45° north. All well on board.

“N.B. It is particularly requested that the following information may be transmitted to Mr. Robert Blundy, Woolwich, Kent, viz., the exact time and place where this bottle was picked up.”

His Excellency the Minister of Marine in France, has instructed me, Sir, to transmit you this information, for the satisfaction of the person who threw the bottle into the sea.

(Signed)

BARON SEGUIER.”

It was calculated by the French authorities that the bottle floated at the rate of one league per day.

I am, &c.,

CHARLES BLUNDY.

SHIP CATHERINE.—Track No. 16.

Santiago de Galicia, Dec. 6, 1817.

SIR,—This is to inform your Excellency of the following success. On the Bay of Carnota in this kingdom of Galicia, three leagues south of the Cape Finisterre, was picked up on the 10th of November last, a corked and sealed bottle, which, after opened, it was found the following letter:—

"This bottle was thrown overboard from the *Catherine* of London, in lat. 44° N, long. by account 13° 49', on Wednesday, June 25, 1817.

"O. B. WALLER, Master.

"This is intended to ascertain the set of the current. Whoever picks it up is requested to acknowledge it by publication."

I think it necessary, and also worth of curiosity to inform your Excellency, that on the very same spot it has been picked up about the end of May, another bottle, containing a letter, addressed to "John Williamson Shik, Esq., Georgia, written by Captain W. Baugh, in the 48° longitude, and 49° latitude, from on board the ship *Georgia*, in his voyage to Liverpool," without date. I believe the idea of the master of the *Catherine* being intended to ascertain the set of the current, it will be valued by the other discovery.

The originals of both letters, which were presented to me for translation, have both been sent to Madrid, with the idea of receiving publication in our newspapers; but I hope your Excellency will be kind enough as to excuse the liberty I take in addressing myself directly on both subjects.

I remain, &c.,

MANUEL FLOREZ.

To H. E. the First Lord of the Admiralty.

SCHOONER MORNING STAR.—Track No. 17.

A bottle from the schooner *Morning Star*, of Liverpool, Captain Andrew Livingstone, 7th October, 1821, lat. 42° 45' 39" N., long. 13° 3' 21" W. Found about 29 miles to the northward of Bayonne, in the arrondissement de Dur, lat. 43° 58' N., long. 1° 20' W., and made known by the direction of the Minister of Marine and Colonies of France, in the *Moniteur* of Jan. 24, 1822. To his Excellency, and the Baron Seguier, Consul General of France in England, we are indebted for this information, and for the original document addressed by our friend to the Editor of this work.—*Atlantic Memoir*, Ed. 1840, p. 166.

SHIP KINNEAR.—Track No. 18.

Consulate of the Canary Islands,

Tenerife, 29th July, 1836.

SIR,—I have the honour to transmit to you enclosed a paper, which I received in an official note from the Commandant de Marina of this province; stating that it was cast ashore the 28th of June last, on the beach of Adeje in this island, in lat. 28° 8' N., long. 10° 31' W. of Cadix.

I have, &c.,

LEWISBY HAMILTON.

To C. Wood, Esq., Secretary, Admiralty.

Acting Consul.

"Ship *Kinnear* of London, 26th July, 1835, lat. 44° 32' N., long. 13° 57' 00" W, on a voyage to Hobart Town and Sydney, New South Wales. All hands well.
"CHARLES MALLARD, R.N., Commander."

LANGSTONE HARBOUR, DOCKS, AND RAILWAY.

In consequence of the great increase of merchant traffic on the southern coast, and of the determination of the Government to refuse their assent to the appropriation of Portsmouth to commercial purposes, a project has been set on foot to make Langstone harbour available, and it is a matter of surprise that advantages of no ordinary character should have hitherto been postponed in favour of Southampton and Shoreham, neither of which places present adequate capabilities, either of water or security, as compared with Langstone. An enemy might destroy the shipping in Shoreham Harbour without difficulty, whereas Cumberland Fort already guards the entrance of Langstone Harbour

on the Portsmouth side, and a Martello Tower on the Hayling side in communication with the fort about to be built on the Horse Sands, would render the entrance of a hostile force a hazardous enterprise. In the present state of the Continent, and with Cherbourg only a few hours' sail from our coast, everything which may assist in adding to the national defences of the country becomes a matter of paramount importance.

This conclusion is confirmed by the following extract from the first report of the Tidal Harbours Commission, as presented to both Houses of Parliament by command of her Majesty, wherein the Commissioners say, "They cannot close their Report without expressing in the strongest terms their conviction that immediate measures for detailed inquiry and local examination into the state and condition of every port or navigable river of the United Kingdom are indispensably necessary, with a view to a thorough superintendence, and when they consider the great want of accessible harbours along the whole of the coasts of your Majesty's dominions, more especially when the extended use of steam navigation points to such great changes in maritime affairs, whereby every sheltered creek is likely to become of value, and when they consider that by the improvement of our tidal harbours, your Majesty's beneficent intentions for the preservation of the lives and property of a large class of your Majesty's subjects may be best fulfilled, they earnestly trust that no minor consideration may be allowed to impede the accomplishment of objects of such national importance."

The most distinguishing feature of Langstone Harbour is its close contiguity to Spithead, which is the sea road between the Isle of Wight and the continent of Hampshire, and which from Cowes to St. Helen's is near 20 miles in length, and in some places three miles broad. This road is capable of receiving, with care, more than a thousand sail of shipping.

On the whole southern coast, from the Land's End to the Nore, Langstone is the only harbour adapted to the combined purposes here indicated; its proximity to the great naval depot of Portsmouth, the unequalled excellence of its anchorage, the capacity of its basin, the ease and safety with which, after the improvements in contemplation have been carried out, it may be entered by vessels of any burden, establish its nautical superiority, while with London only distant 66 miles from the docks, a rapid communication is insured by railway or canal.

The advantages of Commercial docks are so numerous and striking, that it may at first sight appear a waste of time to enumerate them. By mercantile men they have long been considered a desideratum, and their non-existence has frequently subjected the merchant to much inconvenience, has been the source of great loss of trade, and consequently of an equal loss of profit to the neighbourhood. The projectors of the wet docks at Liverpool in 1708, (which were the first ever made in the kingdom,) would have been deemed extravagant enthusiasts or arrant impostors; had they promised to the subscribers a twentieth part of the advantages which have arisen from that undertaking.

The dock duties in Liverpool, since that period, have increased from little more than £800 to £230,000 per annum. In the reign of Charles the Second there were 15 boats at that port, the tonnage of which amounted to 2,560. In the reign of Queen Anne their vessels had increased to 170. In 1756 the dock dues only amounted to £2,200. In 1801 they increased to £28,000, and in 1850 they were to £230,000; so that it is now for commercial purposes the second port in the United Kingdom. Yet although its situation and advantages are important, it cannot be denied that in many particulars it must yield to Langstone. It is a well known fact, that for want of dry docks in the neighbourhood of Portsmouth, many vessels are prevented from obtaining the necessary repairs they require, and are obliged for the most part to repair at Southampton or London. It is, therefore, proposed in the first place to

form additional docks at Langstone, on the west side of Hayling Bridge, for which an Act of Parliament was obtained in 1823; to connect the same with the South Coast Railway by a tramway, meeting the railway at or near the Havant station, one mile from Langstone Quay, for which an Act of Parliament was also recently obtained. With this accommodation Langstone will be in a position to compete with the eastern harbours of Shoreham and Newhaven, which have established a healthy and largely increasing trade. In furtherance of this scheme, it is proposed, with the consent of the Lords of the Admiralty, (which has already been obtained,) to embank in a portion of the mud lands on the Hayling Island side of the main channel, leading from the entrance of the harbour towards Langstone Bridge, by which the present channel will be considerably deepened and widened, facilitating thereby the passage of vessels from the mouth of the harbour to Langstone Quay, and to form a railway on the inside of the embankment to the entrance of the harbour, where wet, dry, and timber docks, with requisite warehouses, wharfs, and cranes for discharging goods, are about to be erected contiguous to the new buildings on the south beach of Hayling Island.

Successive administrations from the time of Mr Pitt have recognised the importance of establishing at a point of the southern coast of England, within an eligible distance from the metropolis, a harbour with docks and warehouses for bonding merchandise, whereby all vessels from the westward might save the delay and expense of a voyage up Channel, and avoid the risk to which that tedious and dangerous navigation necessarily exposes them. The political considerations which originally suggested the formation of such a harbour, are of course infinitely strengthened by the revolution effected on naval warfare, through the agency of steam, while the vastly improved modes of transit between London and the provinces, invest such an undertaking with a commercial importance which could not have been previously anticipated. And if stronger proof were necessary to be adduced for the absolute necessity of forming docks at Langstone, it is to be found in a recent report made by Mr. Young, of the Underwriter's room at Lloyds, who gives a list of wrecks and casualties to shipping which have been officially reported to have occurred between Dungeness and London, during a period of 18 months, from January, 1849, to June, 1850, inclusive, although he states it to be impossible to come to a precise knowledge of the total extent, owing to the numerous vessels which are annually lost on the Goodwin and adjacent Sands, with all on board. But he calculates the amount of property lost, in that period, to amount to between £400,000 and £500,000, besides the sacrifice of a great number of lives. He also states his object is to show the enormous annual destruction of property between the Isle of Wight and the Thames, and which would be avoided by homeward-bound ships discharging in local docks, besides the saving that would be effected in the rate of insurance, time occupied between the island and London and the extra cost of wages, provisions, and incidental expenses. To the document alluded to is subjoined an abstract of the loss of shipping and of life between the Isle of Wight and London for the last seven years, from 1837 to 1843 inclusive, by which it appears that during that period 499 vessels lost anchors and cables, were partially dismasted by bad weather, or being run foul of, or sustained other damage, 560 vessels took the ground, but got off again, 260 vessels entirely wrecked or foundered, of which the crews or passengers were saved, 56 vessels were totally lost with all or several of the crews or passengers, the total number of casualties being 1,375. During the first six months of 1850, it appears that no less than eight vessels have been lost between London and the Isle of Wight, with all on board, and the number of lives so sacrificed is estimated at little short of 500.

The Customs duties received at Portsmouth in the year 1850 were £60,426 1s. 5d., and the duties received upon the article of wine only, during the same period, amounted to £11,377 2s. 3d.

Southampton in March, 1852; was fixed-upon as the port of arrival and departure for the East India and China mails. Practical experience shows that a site like Langstone would form in fact an outpost of London, and that ships lying in Langstone harbour would, to all intents and purposes, be as close to the business portion of the city of London, as if they were lying at Blackwall. No docks at a greater distance will, however, accommodate the London traffic, and it is worthy of notice that no steam-ship landing and embarking mails at Plymouth can, for various reasons, ever remain there to complete their business, but are compelled to proceed to London, there to discharge and receive their cargoes, having to encounter all the delay, danger, and expense of a Channel and Thames navigation.

The inducements to ship-owners and merchants to adopt Langstone are of the strongest possible nature, for not only are the well-known perils of the Channel altogether avoided, but the saving on a voyage up and down Channel, a distance of 300 miles each way, would be, on a vessel of 150 tons, £59 16s. 6d.; of 300 tons, £101 2s.; of 600 tons, £228 18s. 6d.; and on one of 1,000 tons, £358 16s., exclusive of the saving of insurance, the difference of port charges, pilotage, light dues, seamen's wages, and various other items of expenditure familiar to every merchant and ship owner.

Though it is impossible to approximate to an accurate estimate of the proportion of this vast trade likely to be secured to Langstone, yet it must be evident that much of it must be secured, and that even a fractional part of it alone would constitute a very extensive business. But it will be apparent that a large proportion must be concentrated at Langstone docks, when it is considered that a great portion of the goods imported is housed and bonded for exportation—that such goods cannot be deposited so advantageously as at Langstone, to which it is understood the privileges of a bonded port are already accorded by the Treasury, and that thence merchandise may be re-shipped and dispatched to sea more speedily and at far less expenses than from any other part of the United Kingdom.

It may be necessary to add, that this harbour has been very recently surveyed by an eminent Government engineer, and the following is an extract from his report :—

“ LANGSTONE HARBOUR.

“ Few places possess so many advantages for the formation of a dock and wharves, a mile distant from the town of Havant, which contains a population of about 2,450 inhabitants, surrounded by a populous and productive country, with railway communication to every part. If a good harbour and docks were constructed, a trading town would immediately spring up, therefore every possible encouragement should be given to a well considered project of improvement, and if properly set about, there is no doubt that the result would be advantageous to all concerned. I bored one part of the bar at low water to the depth of 11 feet.

Depth of water at the bar	6 Feet
Bored through shingle	6 do.
Ditto soft mud	2 do.
Ditto hard firm gravel	3 do.

Total depth below low water..... 17

“ There would be no difficulty to run out one or two piers in a straight direction from the entrance of Langstone Harbour over the bar, which would deepen the channel many feet, and greatly improve the entrance. A depth of 12 feet more at low water springs might be obtained from the deep waters up and into Langstone Harbour, and more than 25 feet at high water ordinary springs. The harbour within the entrance is capable of being enlarged and

deepened to any extent required, so as to float and accommodate any number of the largest ships of war. There is ample room for dry and wet docks, building yards, &c., within Langstone harbour. Its entrance is protected from all winds, except those blowing in between Selsea Bill and Bembridge Point, in the Isle of Wight. It is therefore open from E.S.E. to S.b.W.

"It might easily be converted into an asylum harbour for ships of war, completely protected by Fort Cumberland, or into a commercial port for shipping of all kinds.

"A railway of a few miles in length, through Hayling Island, (where a new town has already been commenced,) would connect this harbour with the South Coast Railway to London, which could be reached in three hours. With a good entrance over the bar and a lighthouse, ships outward and inward bound could always run with safety to sea from and to Langstone Harbour, and the entrance may be rendered perfectly safe by placing buoys in a similar manner to those at the bar at the entrance of Portsmouth Harbour."

But while the proposed docks present unparalleled advantages for receiving and stowing goods intended for exportation, they are also advantageously situated with respect to a general home market of great importance, especially in connection with the South and South Midland counties, and the populous towns of Portsmouth, Portsea, Gosport, Havant, Emsworth, Petersfield, Midhurst, Chichester and Fareham. The population of the Southern and South Western counties are at present supplied with colonial and other produce from comparatively remote parts. The construction of these docks will form a depot from which these several commodities can be furnished by means of railways already constructed, the lighter description of goods may be conveyed, and samples as regularly exhibited for sale in the offices of the London brokers, as it is at present done from the East and West India Docks, while the projected line of railway from Havant, through Petersfield and Haslemere to Godalming will place Langstone within 66 miles of London, and the canal already made from Langstone and Chichester harbours to the Thames, secures a water conveyance for merchandise of a more bulky description, thus removing the only obstacle which could exist to the complete success of such an undertaking, viz., a quick, secure, and at the same time cheap carriage for goods of every kind, between the intended docks and the metropolis.—*Portsmouth Times*.

DR. RAE'S PROJECTED ARCTIC EXPEDITION.

The following letter from Dr. Rae, points out the route which we have already informed our readers it is his intention to pursue for the purpose of discovery and science, in connection with terrestrial magnetism. Highly as we applaud these motives, we cannot but regret that no steps are taken to follow up Dr. Rae's discoveries on the west coast of Wollaston Island, by which quarter we might learn something of Capt. Collinson and Capt. M'Clure's whereabouts.

To the Editor of the Times.

SIR,—As the subject of Arctic discovery still occupies much of the public attention, it may interest some of your readers to learn that the Hudson's Bay Company are about to despatch a boat expedition (with the command of which I am to be honoured) to the Arctic Sea, for the purpose of completing the survey of the northern shores of America, comparatively a small portion of which (probably from 300 to 400 miles) now remains unexplored.

Few preparations have hitherto been made for this expedition, as it was supposed by many that Mr. Kennedy and his party would have traced the coast

referred to; but Mr. Kennedy has returned, and, somewhat to my surprise, the coast is still unexamined.

The requisite arrangements for the effectual carrying out of the object of the expedition are now in progress, and I shall endeavour to give a brief sketch of its contemplated equipment and route.

The party is to consist of one officer and twelve men, including two Esquimaux interpreters in two boats, the one boat light and small for convenient transport over land and for river navigation, the other large, strong, and well fitted for encountering rough weather in an open sea, but without any deck or other covering except tarpaulins. Our stock of provisions will be sufficient for three months, which, with an ample supply of ammunition, nets, and articles to barter with, and for presents to the Esquimaux, will be enough for every purpose.

Orders have already been transmitted to York factory, in Hudson's Bay, (the starting point of the party,) for the boats to be built, and for twelve picked men to be engaged.

The Company have in the most liberal manner given me a *carte blanche* to provide all and everything that I may think essential for the comfort and health of the party, as well as for making correct astronomical and other observations.

To provide for the first, a quantity of preserved vegetables, meats, soups, and milk, also some alcohol for fuel, have been forwarded to Hudson's Bay.

To insure the latter object an excellent sextant, by Dollond, which has already seen much hard service in the north without injury, is to be used. Two chronometers have been, or are to be ordered, from two of the first London makers for this special service. Good azimuth and boat compasses will be selected, besides which Sir Francis Beaufort has in the most kind manner promised, in addition to his very valuable advice, the use of a compass of most delicate and superior construction; the advantages of such an instrument will be appreciated by every Arctic traveller.

As my route will be directly over the position of the magnetic pole, it is most likely that a dip circle of as light and portable description as possible will be carried along with us, so that, should time permit, a series of magnetic observations may be taken, which, by being compared with those of Sir James C. Ross in the same quarter, may tend to throw some light on the mysterious changes in the direction of the magnetic attraction. On this subject I hope to have the advantage of Colonel Sabine's invaluable instructions.

Of course barometers and thermometers for ascertaining heights, and the temperatures of the air and water, will not be omitted.

One of Halkett's airboats has been forwarded to America, while another of those useful little craft, (named by the donor *James Fitz-James*,) has most generously been supplied by John Barrow, Esq., of the Admiralty.

As the navigation on the great American lakes does not open until April, I shall not leave Canada for the north until the latter part of that month. After calling at Lachine to receive the final instructions of Sir George Simpson, Governor-in-Chief of the Company's territories, I shall proceed by steamboat as far as Sault St. Mary's, and thence northward in a large bark canoe, manned by Iroquois and Canadians, by Lakes Superior, Rainy, and Winnipeg, to York factory, where I hope to arrive about the 13th of June. Here, or at Norway-house, I expect to find my men waiting my arrival, and should the sea-ice be broken up, the party will immediately embark in the boats provided for the service, and push northward along the west shores of Hudson's Bay.

Having reached Chesterfield-inlet, we shall advance to its western extremity, and there leave the large boat under charge of three men; while the remainder of the party, dragging the smaller boat, are to take a direct course over land for the nearest point of the Back or Great Fish-river, the distance to which is esti-

mated at about 90 miles. Having reached the river, three of the men will be sent back to the inlet to aid those left there in laying up a supply of fish, venison, and musk-ox meat, to guard against contingencies. The small boat, with a crew of seven persons, will descend the Back and push its way northward, following closely the windings of the west coast of Boothia as far as lat. 72° N., which is now supposed to be the extreme north point of the American continent. From this point we shall commence our return by the same route as that by which we came, unless the state of the ice may permit us to cross Victoria Channel; in that case I shall visit the east shore of Victoria Land, and trace its coast southward from the spot where Kennedy touched upon it in his winter journey to my furthest north (lat. $70^{\circ}30'$) in the summer of 1851.

Having reascended the Back as far as requisite, we shall leave the boat and cross over to Chesterfield-inlet on foot, embark the whole party in the large boat, and start for York factory, where I hope to arrive on or about the 30th of September.

The following are the dates on which I hope to reach several of the principal positions on the line of route:—Sault St. Mary's, Lake Superior, April 26; Lake Winnipeg, May 30; York-factory, Hudson's Bay, June 13; Churchill, June 24; Chesterfield-inlet, July 12; Back River, July 24; the sea (Arctic), July 30. Farthest point north, lat. 72° , Aug. 22; return to Chesterfield-inlet, Sept. 12; York-factory, or Churchill, Sept. 30.

It may appear to many that I allow too little time for a journey of such extent, but the experience of six visits to the Arctic sea, on ice and by boats, during which at least 1,500 miles of new coast were added to the charts, leads me to believe that the time is amply sufficient, always supposing that the season is a favourable one. Should the contrary be the case, and the ice hang long on the coast, I shall be prepared to winter in snow-houses, or walk back to Churchill on snowshoes, if, after accomplishing our purpose, the winter is too far advanced to allow of our getting home by sea. The distance to be walked will not be more than 600 or 800 miles, and game of various kinds is likely to be numerous enough to supply us with sport and a sufficiency of food as we travel along.

I may add, in conclusion, that as the expedition has been planned by myself, I shall feel a more than common interest in bringing it to a successful termination.

I am, Sir, your most obedient servant,

London, Nov. 26.

JOHN RAE.

P.S. I do not mention the lost navigators, as there is not the slightest hope of finding any traces of them in the quarter to which I am going. J. R.

—*Times*, 27th Nov. 1852.

THE CORNWALL SAILORS' HOME AT FALMOUTH.—ITS ORIGIN AND PROGRESS.

The Institution for the establishment of Sailors' Homes &c., puts forth the following interesting narration of the origin and progress of the Cornwall Sailors' Home at Falmouth to show how, under the most discouraging circumstances, in the face of the most vexatious obstacles, in short against the feeling and opinion of many of the inhabitants of Falmouth itself, this useful, excellent, and most promising little Home gradually rose from being a mere conception in the mind of one philanthropic individual into being the means of dispensing comfort, happiness, health, and even life itself to hundreds of the most neglected class of our countrymen.

In the autumn of 1851, Capt. W. H. Hall, R.N., determined, encouraged by the success of his previous labours in Scotland, Ireland, and the north of England, upon visiting the principal ports on the south and south-west coast, with the view of establishing a Sailors' Home at each of them.

Quitting Devonport where he had been actively and successfully engaged in forming a committee for carrying out a similar institution to the one at Portsmouth, he proceeded to Falmouth, (touching on his way at Looe, Fowey, and Mevagissey,) resolved, with the true spirit of sympathy towards that portion of our race who "go down to the sea in ships" and "do business on the waters," to erect a Home for them at this place.

Well aware of the necessity of such an asylum at every port, Capt. Hall, previously to his visit, had, nevertheless, communicated with Mr. Hubbard, R.N., Mr. Shelley, the collector of the customs, Lieut. Creke, R.N., and Mr. Duckham, the licensed shipping agent, with the view of eliciting from those gentlemen any information that might show the particular requirements of Falmouth in this respect. In reply a very full and able report was received of which the following is an extract:—

"There is but one seaman's house, specially adapted as a lodging house, at this port, and this house is situated in a most unhealthy place, being under a hill: there is no drainage, and a bakehouse adjoining, a lath and plaster partition dividing. In this lodging house there is one common eating and cooking room, through which there is a thoroughfare, in which twenty seamen have been seen congregated together at one time. The superficial space is about 13ft. by 10ft., and out of it is a space for a stair to an upstairs room, which is about 9ft. by 10ft., less the stairway, and about 7ft. high. In this room seven men have been seen on beds on the floor; some of them ill with scurvy, and one of them in a decline. The effluvia of this den can be imagined; the offence is so great that it has been felt by visitors for sometime after. Besides this house, at two public-houses and at a beer shop seamen are lodged; in these they are exposed to every temptation of the worst kind, drink and wretched female association, while they either squander their money or have it swindled from them."

Armed with such telling local facts as these, Capt. Hall might naturally have expected, on arriving at Falmouth, that he would only have had to propose his Home to have that proposition carried by universal acclamation. How different the result was, to such well grounded anticipations, the following details will sufficiently attest.

On arriving at Falmouth, Capt. Hall immediately placed himself in communication with several gentlemen connected with the naval service, some of whom, to his surprise, discouraged his views, confidently asserting that no such home was required.

An obstacle like this to commence with, from gentlemen, too, whose profession, it would have been but fair to suppose, would have placed them in a position to advise correctly on such a subject, would have disheartened most men.

Capt. Hall, however, still persevered. Repulsed from a quarter where he had expected the most support, he immediately addressed himself to the leading gentry and influential inhabitants of Falmouth, upon many of whom he personally called, receiving from some in return but little encouragement.

"In our first movement," it is stated in a private report referring to this period, "we had many difficulties to encounter and strong prejudices to overcome. We found ignorance, which is ever accompanied by prejudice, particularly when pecuniary aid is solicited. The would-be blinded gentry of the county, and others, wished to believe that a Sailors' Home was perfectly unnecessary at Falmouth, believing, (as when a packet station,) all sailors were located with their families, and for the few that ever entered this

port ample accommodations were found in the sailors' lodging houses; that the sick and shipwrecked seamen were amply taken care of both in their spiritual and temporal concerns; that few vessels ever remained at Falmouth, except to wait for orders; that none were ever paid off or entered at this port; and that if a Sailors' Home was established it would be made a convenience of for drawing sailors from their ships."

Met with such objections as these, Capt. Hall was finally compelled to call a meeting of his friends, and a few others interested in the cause, at the Custom house, which was held on the 1st of September, when a committee was formed, over which, on the following day, Admiral Sullivan, C.B., presided, preliminary measures being then adopted for opening the Home.

From this moment success began to follow.

The most active measures were adopted. An extensive correspondence was immediately entered into with all the nobility and gentry of the county, as well as with the heads of the different departments under government, soliciting their aid and assistance.

The Earls of Falmouth and St. Germans, Count Walewski, the French Ambassador, and the Bishop of Exeter, consented to become Vice-Patrons.

The whole of the seaports in Cornwall were incorporated in the Institution, and steps taken to form branches at Penzance, 1,000, St. Ives, Padstow, and Mevagisey; these places having previously been visited by Capt. Hall for the purpose.

These preliminary steps being taken the committee found subscriptions and donations began to accumulate, and in the early part of October the receipts amounted to £126.

The funds, however, still being insufficient the committee considered it necessary to introduce some method to stimulate the friends of the institution. Letters were consequently addressed to more than 250 of the nobility and gentry, which produced at least £200 as donations.

The ladies' opinions were next solicited, when it was decided that cards should be printed, and presented to each lady, for the purpose of requesting the aid of her friends, however small the donation. This suggestion was found, as might be expected, to answer most admirably, the funds having risen to £400 in January, 1852.

A house, well appropriated and advantageously situated near the quay, was now taken, and rented for the term of three, five, or seven years, at £35 per annum. Officers appointed; the necessary fittings up of dormitories, sickward, chest and clothes house, smoking house, baths, and everything requisite for the reception of twenty men completed. The rules and regulations framed. And the Home finally opened on the 17th May, 1852.

As an extraordinary coincidence signally showing the importance of the Home, on the day of opening ten seamen from the *Adler* of Stettin, which had caught fire and sunk in the harbour, were immediately received; while about this time many donations of books from private individuals were presented, which together with grants from the Religious and Bible Societies, swelled the library to about 200 volumes.

Her Majesty was most graciously pleased to forward the sum of £50 in aid of the Institution, by which the funds were increased to £500.

The number of sick seamen from merchant ships touching at this port for orders, from all parts of the world, and seamen injured on their passage by accident, having no surgeon on board to attend to them during the voyage, who came to the home daily, called for an immediate enlargement of the sick ward. For their reception and comfort a large unoccupied room, pleasantly situated in the garden, was fitted up with accommodation for sixteen or eighteen men.

At the commencement of the autumn the number of inmates had increased

so rapidly that twenty additional beds were immediately ordered; notwithstanding which it was found necessary to hire ten beds for one week.

For the last six months, board, lodging, and medical attendance have been provided for about 600 sailors, viz. :—British, 400; Jerseymen, 6; Dutch, 8; Russians, 9; Prussians, 16; Germans, 83; Swedes, 84. Of these 150 have received surgical and medical aid.

As the facts adduced in this interesting narrative sufficiently show.

First.—The necessity of a Sailors' Home at every port, even where it would appear to be the least required.

Secondly.—How difficulties and obstacles are to be overcome by perseverance.

Thirdly.—And how perseverance in a good cause, even under the most disheartening circumstances, will eventually be crowned with complete success.

The patrons of the Sailors' Homes Institution feel it would be a work of supererogation on their part to attempt to strengthen these facts by a single observation farther than that they heartily trust they will be read and reflected on by every well wisher of the Sailor.

A SIMPLE AND SAFE TREATMENT OF THE YELLOW FEVER.

Liverpool, 22, Stafford Street, Dec. 23rd, 1852.

To the Editor of the Nautical Magazine.

SIR,—Having been a constant subscriber to your very valuable work since the year 1837, and having from time to time received great instruction and information, both from your own articles and remarks and those of your numerous contributors, I have often been tempted to assist with my mite, in the narration of occurrences that may have come within the scope of my observation during the range of thirty years spent in a seafaring life. Diffidence withheld me.

However, a very short time back a brother of mine was going out to Barbados, to take the command of a ship there, and as he had served his apprenticeship to me, he generally looked to me for advice, &c. On his leaving he said, "You have always been very successful in your treatment of yellow fever. I wish you would write me out directions how to do so." I did so, in the manner you perceive in the enclosed, so that it could not be misunderstood; and as it might be useful to him, so I thought it might be useful to others placed in similar circumstances. If you think it worthy of circulation, it is in your hands to do so. No doubt you will have an opportunity of getting a high medical opinion on it before you will give it the stamp of your approbation by publishing it.

At all events, my only object in making it public is now that we see the yellow fever making its way to our own shores in the late West India steamers; and on a careful examination of the public prints relative to the mortality on board those ships, I have not in any instance seen mention made of the treatment observed on those melancholy occasions.

In confirmation of my experience, I beg leave to enclose you a letter I received from the British Consul at Pernambuco, where I was lately when the yellow fever was raging to a great extent, and where the Brazilian Government compelled the British Consul to create an hospital or lazaretto on an island, so as to remove the sick out of the ships, and from the vicinity of the town. But when I saw the mortality to my crew going on there, under the castor oil treatment of two British doctors, I resisted the authority for removing my men, and

treated them as I advise on board my ship. The only man as mentioned by the Consul as not having recovered, died of delirium tremens, as I could prove through one of the surgeons of the Brazil and South American mail steamers then in the roads.

It would be presumptuous in me, and dishonourable to a clever man, to lead you or any person to suppose that the treatment advised (if it has any merit) is of my own knowledge or finding out. It is my experience in numerous cases of the treatment adopted by what I considered a most clever man, Dr. Edward Bascome, who practised most successfully in Demarara for many years, particularly when it raged so fearfully in 1837. Any demerits must be laid at my door, as having failed to explain it properly.

You will much oblige me by returning the enclosed letter to my address, when you have perused it. And trusting I have not uselessly trespassed on your valuable time, with the greatest respect

I remain, Sir, your obedient servant.

HENRY RICHARDSON,

Late Commander *Fairy Queen* of Dublin.

[We have taken the liberty, without asking Capt. Richardson's permission, to annex the letter alluded to, as forming an important link in the chain of this subject, and having no doubt that the treatment pursued by him would be attended with the same success in other vessels, which may not be provided with a better mode of treatment, as in his, we add the description which Capt. Richardson has sent us.—Ed. N.M.]

British Consulate, Pernambuco,
25th March, 1852.

MY DEAR SIR,—I cannot allow our acquaintance to draw to its conclusion, without expressing to you my high appreciation of your efforts to forward the interests of the owners and underwriters of the *Fairy Queen* and her cargo, under the extraordinary circumstances in which you have been placed here, and still more of your humanity and untiring attention to your crew when attacked by yellow fever.

During my Consular service of thirteen years, I have had considerable experience of vessels putting into this port under similar circumstances to those which caused your doing so, but I do not recollect any of their Commanders who had exhibited more personal honour or disinterested zeal for the property under his charge. This, although a matter of just self congratulation to you, will however be nothing to the lasting satisfaction which you must feel, when you recall the fact that of five of your men treated at the Lazaretto four of them died, and that of seven treated by you on board six recovered.

Wishing you and Mrs. Richardson every happiness and prosperity, believe me to be, my dear Sir,

Capt. Henry Richardson.

Very faithfully and sincerely yours,
H. A. COWPER.

A Simple and Safe Treatment for the Yellow Fever.

As a preface to the remedy, I must remark, that from a very long experience of this disease, I have always remarked that the patient has been attacked between the hours of Midnight and Six o'clock in the morning; the symptoms, Headache, Pain in the Back, Hot Skin, &c. It is of the most vital consequence that the remedy be applied as soon as possible, say within two hours from the commencement of the attack; no waiting till the Doctor comes, as the first treatment can do no harm even if he does not wish to follow it up, but in the case of a person at sea, or on board ship where no Doctor is at hand. I have never known, with proper nursing, the following treatment to fail when taken in proper time, say within the limits of six or eight hours from the commencement of the attack; but the sooner the better, not being a medical man, and

merely laying down those rules for the benefit of brother shipmasters. I would suggest that both the officers and crew of a ship should be impressed with the necessity of acquainting the Master with the first appearance of sickness, particularly at night time, and I would also suggest to the Master, that there is no time to be lost, but to see to it at once; if he happens to be on shore, leave orders with the Mate to apply the remedy at once, and not wait for his return.

When the symptoms are as above-mentioned, and in the vicinity of where the disease is suspected, I would at once administer an Emetic, composed of 25 grains of Hippo, or Ipecacuanha; on no account whatever use a particle of Tartar Emetic, or even the Emetic powders as put up in ships' medicine chests, which contain it. If in about a quarter of an hour the patient gets sick, and is inclined to throw up, it is a good symptom, and when he commences he must be immediately plied with quantities of warm water to drink, and the stomach well washed out; one gallon of water will not be too much. Every effort must be made to make the patient drink it; it will all come up, no matter how much taken. After the vomiting has subsided, the patient from the effects of the emetic, and the exhaustion caused thereby, will naturally drop into a state of lethargy; if sleep succeeds, no better symptom can appear, and I may say that the cure is effected. However, to go on with the treatment. If, as I have said, the patient sleeps, say for four hours, on his waking have the following mixture ready for administering; or whether he sleeps or not, take a common wine bottle and put into it the following ingredients:—two table spoonful of Carbonate of Soda, one desert spoonful of Sweet Spirits of Nitre, one tea spoonful of Essence of Peppermint; fill it up with water, and shake the mixture well up, so as to dissolve the soda, or do so before you put it in the bottle. Take a similar bottle, and fill it with strong Lemonade, the less sugar the better. When the patient wakes, or say within the four hours, it is very natural that he will be thirsty, and calling out for drink. Be determined, and allow no drink to be given, except the mixture. Take one wine-glassful of the mixture and another of the lemonade, add them together when he is ready to drink, they will effervesce, and will be an agreeable draught; this draught must be repeated regularly every two hours. I have seldom known an occasion to replenish the bottles, but at all events, if the patient does not rally quickly, it will be no harm to do so, and continue the draughts. If in a port within the tropics, where fresh limes can be procured, there is nothing in my opinion so conducive to the cure of this disease, and they must be used in making the lemonade; and if the patient is calling out for drink, he must be diverted by a thin slice of lime in the mouth, a superfluity of liquid in the stomach is injurious. As to nourishment, he will require very little the first 48 hours; gruel, arrowroot, sago may be given. Although a patient generally speaking likes tea, I do not consider it good for him at the early stage of the disease; it makes him restless, and prevents sleep.

It is to be recollected that I have stated above, that I have hardly ever met a case that was not subdued by the above treatment when taken early; but I have met cases where the first emetic had no effect, and after half an hour had to give another and still no effect, and had to give a third; but those cases only occur when the fever has been allowed to run on, say from 12 to 20 hours. However the emetic must be persevered in until the desired effect is produced; and in such cases, say of 24 hours standing before any remedy was applied, the vomiting may be more severe, and it will be necessary to apply a mustard poultice to the stomach; and in an after stage of the disease the head may be attacked, and it may be necessary to shave and apply a blister. Those are cases neither within my province nor ability to treat of here. All I want to say is, that if taken within the prescribed limits of time, I never knew the above remedy fail.

I have been witness to other forms of treatment for this disease, in Demerara,

Rio de Janeiro, Pernambuco, Antigua, &c., and I must say generally speaking without any beneficial results. One form was on the first attack to administer castor oil—another form of treatment was bleeding in the first instance—another form was a large dose of calomel with jalap. Now to commence with the purgative medicines, what use are they in such a disease as yellow fever, where the black vomit is to be expected; the stomach is the head quarters of the disease, and when fever once sets in, all the digestive powers of the stomach cease; the purgative medicine has no effect on it, it merely clears out the intestines, but leaves the stomach in the state it found it. We will take for instance the state of a seaman as attacked at the time I state by this disease, say four o'clock in the morning. Seamen generally are of a very costive habit. We will suppose that on the previous day he has eaten a hearty breakfast, a dinner, and a supper, with mind you a quantity of meat with each meal. Well, during the night he is attacked with all the symptoms of the disease as above stated; it happens at a time when there is not much probability of getting medical aid; the disease is very rapid; in many cases medical aid is not procured before noon of that day, and when it is procured a purgative dose is administered—with what effect? None for at least four hours, and what then? The intestines are cleared, but the head quarters of the disease remain as they were; the three heavy meals remain there undigested and putrifying, assisted no doubt by the quantity of water that a person in that state would be inclined and does drink; and in a tropical climate, what is the temperature of that water, and what the temperature of the patient's system in such a fever? It is no wonder that black vomit sets in, and that that black vomit is teeming with animalculæ. If the stomach had been cleared in the first instance, no black vomit would have ever set in; and is it any wonder that it does, because the natural contents of the stomach are allowed to remain there, and the constant pouring in of drink causes it to distend to that extent, that vomiting must ensue, as all digestive powers have ceased. Whenever an emetic has been administered in the early stage of this disease, I have never known black vomits ensue.

As to bleeding in yellow fever, it is murder. The disease is so rapid, and reduces the patient so much in a very short time, that it requires every drop of blood in his body to withstand the weakening effects of it, and the want of it may be the cause of death, where the patient may not be able to take stimulants to support him.

In explanation of the remedy and treatment advised, I would say a few words on the effects of the medicine, its simplicity, and non-weakening effects; in the first instance, if the emetic is administered on the first attack of the disease it finds the body and system in more or less of a robust state and able to bear the effects of such a treatment; not so if the vomiting commences on the second or third day of the disease, when it then takes the black hue; the head quarters of the disease have been attacked, all foreign causes have been removed and it only remains to treat the system with simple aperients and other restoratives to assist in bringing back the organs to their proper functions. I now begin with the intestines, and after a couple of doses of the mixture you will find that the carbonate of soda has the purgative effects, the peppermint has the effect of soothing the stomach from the irritation caused by the emetic, and the sweet spirits of nitre has a two-fold power, it acts as a diuretic, and causes perspiration, which is always a great desideratum in fever to get the skin into a state of moisture, and in yellow fever particularly, it is well known that there is always an inclination to a secretion of the urine.

The nursing is a great point in this disease: as little drink as possible, to be kept quiet in bed, no washing, feet not to be put to the ground; after all appearances of fever have ceased for two or three days, a half glass of Baas's India Ale may be given twice a day, and, as the patient improves, thirty grains of Quinine in a wine bottle of water, and a wine glass administered

twice to three times a day, will be of great service in strengthening the tone of the stomach and creating appetite.

In conclusion, I beg to state that my only motive in advising this treatment is from the very great success that I have myself experienced in using it, and in the hope that it may be useful to any parties who have not an opportunity of availing themselves of immediate medical advice.

Dublin, December, 1852.

HENRY RICHARDSON,
Master Mariner.

MAGNETIC VARIATION.

Table showing the mean monthly westerly declination, or westerly variation of the magnet, and the mean monthly dip, at the Royal Observatory, Greenwich, in the year 1845.

	Variation, W.	Dip.
January	22° 58' 6"	68° 59·3'
February	22 57 20	69 2·7
March	22 57 6	68 57·5
April	22 59 14	68 56·1
May	22 57 28	68 57·7
June	23 1 10	68 58·9
July	22 57 24	68 57·7
August	22 58 11	68 58·0
September	22 56 7	68 54·1
October	22 53 21	68 56·5
November	22 52 53	68 58·5
December	22 52 18	68 53·0

The mean variation has been found by taking the mean of two-hourly observations. The mean dip by taking the mean of morning and afternoon observations, made twice a week.

G. B. AIRY.
Astronomer Royal.

NAUTICAL NOTICES.

BAHAMAS.—REVOLVING LIGHT ON TURK'S ISLAND.

Notice is hereby given, that on the 9th of October last, a Revolving Light was established on the northern extremity of Grand Turk Island, in 21° 31' N., and 71° 7' 40" W. of Greenwich.

The tower is constructed of iron, and painted white; its height being 60 feet, and its base 52 feet above high water, the light has an elevation of 108 feet.

The light revolves every half minute, and at each revolution flares up into a brilliant flash, which may be easily seen from the deck of a moderate sized vessel, in clear weather, at the distance of 16 miles.

The mariner should however be aware that, when approaching the light from the southward, it will be eclipsed by the southern part of the island on which it stands, between the bearings of N. $\frac{1}{4}$ W., and N. $\frac{3}{4}$ E.; by Salt Cay between N.b.E., and N.b.E. $\frac{3}{4}$ E.; and by the eastern group of Cays between N.b.W. $\frac{3}{4}$ W., and N.b.W. $\frac{1}{4}$ W.

With the light bearing south, it may be approached within two miles; but vessels running for the Turks Island Passage, should make the light on a bearing to the westward of south; and it should not be forgotten, that, from the limited distance at which it can be seen, it will not protect them from Philips Reef and the dangers off East Caicos. They must also remember that a reef projects three miles from the north point of Turks Island, and continues along its whole eastern side.

SOUTH AFRICA.—BIRD ISLAND LIGHTS.

Official notice has been received from the Cape of Good Hope, that Lights have been established in Algoa Bay, on the easternmost of the Bird Islands, off Woody Point. The Tower, which is rectangular, and painted with black and white horizontal stripes, is 45 feet high, and carries Two Fixed Lights, 18 feet apart; the upper one being 70 feet above high water, and 10 feet higher than the other.

In the direction of the Doddington Rock, the lights will appear in a vertical line, one above the other.

The following are Commander Fishbourne's sailing directions:—

The Bird Islands lie in the eastern extremity of Algoa Bay, off Woody Cape, which, as its name imports, is covered with wood, except a small patch of sand at its summit, and is the only sea-board land that is so, which gives it, in contrast with that for miles on either side, a dark appearance; the land on its west side, from near St. Croix up, rises into numerous small sandy hillocks, quite bare of vegetation, and that to the eastward, up to Padrone Point, is similarly naked.

Woody Cape is high and rugged, but not so prominent as to appear like a cape, except when very near it; not so Padrone Point, which runs out into a low point of sand, forming a determinable Cape, from which breakers run out some distance, and the water breaks still further out, at times, owing to the meeting of currents after strong winds.

These islands afford tolerably sheltered anchorage behind them in winds from W. to S.E., in 13 fathoms, and rather better than half a mile from the northernmost breakers; closer in would afford more shelter, but the ground is foul. They are very low and proportionally dangerous, and though the main land will generally be seen before them, and their distance may thereby be better estimated by it, yet in shaping a course to go outside of them, allowance should be made for the eddy, or return current, which sets in towards them, and then to the eastward.

The Doddington Rock and West Reef should be considered as part of the Bird Islands shoal, and no vessel should go between them; for in bad weather the breakers extend the whole way. In clear weather the Rugged and Cockscomb Mountains may be seen from abreast of these islands; but, in passing outside the Doddington, the Cockscomb should be kept open to the westward of the Rugged Mountain, bearing about N.W., and the ship should steer N.W.b.W. $\frac{1}{4}$ W.; having passed the Doddington, the high land at the back of Port Elizabeth will soon appear right ahead.

We have received the following official notice from the United States authorities:—

NOTICE TO MARINERS.

The Light at the Head of the Passes of the Mississippi River, (S.W. and South Passes,) having been represented to this Board as calculated to deceive and mislead mariners bound from sea to New Orleans, it has been determined that, on and after the 15th December next, the Light will be exhibited to be seen only from points on the river above the Passes, and thereby serve as a guide to vessels bound out.

By order,

THORNTON A. JENKINS,
Secretary Lighthouse Board.

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

ENGLAND, Dunnose to Christchurch, including the Needles, Captain Sheringham, R.N., 1852	-	-	-	2	6
IRELAND, Lough Strangford, Commanders Mudge and Fraser, R.N., 1834	-	-	-	2	6
SCOTLAND, Sound of Mull, Commander Otter, R.N., 1851	-	-	-	1	6
Arctic Discoveries, with additions by Commander Inglefield, R.N., 1852	-	-	-	1	6
MEDITERRANEAN SEA, with plans of Gibraltar, Valetta, and Corfu, 1852	-	-	-	2	6
WEST INDIES, Antigua Island, Sheet 3, Captain E. Barnett, R.N., 1848	-	-	-	2	6
EAST INDIES, Carimata Passage	-	-	-	2	0
PACIFIC OCEAN, Awaaree Island, Huahine Harbour, Mr. E. Rowe, R.N., 1852	-	-	-	0	6
Tide Tables for 1853	-	-	-	1	6
Australian Directory	-	-	-	3	0

EDWARD DUNSTERVILLE, Master, R.N.

Hydrographic Office, Admiralty, Dec. 20th, 1852.

CONGO SLAVERS.—On the 19th of June, while H.M. brigantine *Dolphin* was lying in the river Congo, an American brig, the *Mary Adeline*, attempted the passage up the river, but on reaching Shark's Point, (a position of great danger, owing to the strong currents sweeping round it,) she touched the ground, and in a few minutes the stream and surf imbedded her fast ashore. The danger of the brig was instantly observed by the *Dolphin*, which at once made preparations for her assistance; but while doing so the master of the vessel in distress, seeing (so far as himself and crew were concerned) that nothing effectual could be done to get the vessel afloat, made the distress signal, by hoisting the American ensign reversed. Within half an hour of the disaster the brigantine's boats, with anchors, lawasers, &c., were alongside the stranded brig, but the tide falling at the time, rendered merely preparatory measures necessary for heaving off the following day. To the surprise of all, on the following morning the river was crowded with canoes, from ten to forty natives in each, all armed, and at least two-thirds with muskets. Their movements left no doubt as to their predatory and hostile intentions. A boat's gun with ammunition was sent on board, and fitted in the brig. The *Dolphin*, as soon as circumstances would permit, took up a position within gun range for her protection. The natives appeared determined not to lose their prey, and poured a fire of musketry into the stranded vessel, and brought their scaling ladders in front, evidently determined on boarding. Under these circumstances the *Dolphin* opened a fire of shot and shell, and in a little time cleared the beach of the assailants, whose numbers must have exceeded 3,000. This being done, the next object was to get the brig off, and accordingly every endeavour was made to do so. On the evening of this day (the 20th) H.M. steam-ship *Firefly* arrived, and sent her boats to assist. During the night the natives, who had merely retired to the bush, again returned to the beach and fired a few muskets

on the brig, but without injury. On the morning of the 21st a movement on the part of the natives again took place. They appeared to concentrate and meditate a second boarding attack; but a shot from the *Dolphin* fortunately again dispersed them. The surf rolled in heavily during the day, increasing considerably the difficulties and dangers of the necessary operations; so much so that the *Dolphin's* cutter and crew were capsized by the rollers, and one man seriously injured. Finding it necessary, on the 22nd, to completely lighten the brig, the cargo was transferred to the *Dolphin*. and by great industry and exertion, the brigantine succeeded in heaving the *Mary Adeline* off at 6.30 P.M. Every credit is due to Mr. Oaksmith, master of the *Mary Adeline*, for his constant exertions, correct judgment, and cool determined conduct under these trying and dangerous circumstances.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory.
From the 21st of November to the 20th of December, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter. Strength.				Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
21	Su.	29.16	29.10	51	53	49	54	S	SE	1	1	or 1) (2)	or 3) (4)
22	M.	29.10	29.04	46	46	45	47	N	NE	2	1	od (2)	or 3) (4)
23	Tu.	29.51	29.41	37	42	34	44	SW	W	2	1	bc	o
24	W.	29.35	29.61	44	47	40	48	NE	N	1	5	bc	qo
25	Th.	29.9	29.95	57	47	53	48	SW	S	1	1	bc	bc (4)
26	F.	29.50	29.44	35	55	42	56	SW	SW	6	6	qor 1) (2)	qor 3) (4)
27	S.	29.75	29.81	42	47	40	48	SW	SW	2	2	b	bc
28	Su.	29.71	29.51	45	45	30	46	SW	SW	4	5	bc	qor 3)
29	M.	29.50	29.56	34	37	33	38	NE	N	1	3	bc	o
30	Tu.	29.82	29.82	37	41	34	42	N	N	4	6	bc	qo
1	W.	29.95	29.84	33	44	31	45	SW	SW	1	3	bc	o
2	Th.	29.85	29.87	42	46	41	47	W	W	1	1	bc	o
3	F.	30.05	30.04	38	45	36	46	SW	SW	2	1	bc	bc
4	S.	29.90	29.88	52	54	46	55	SW	SW	4	5	or 2)	qor 3)
5	Su.	29.96	29.94	53	55	50	56	SW	SW	4	3	o	od 3)
6	M.	29.78	29.78	51	50	49	53	SW	SW	1	2	or 1) (2)	bc
7	Tu.	29.70	29.66	48	49	43	50	SW	SW	2	1	or 1) (2)	or 4)
8	W.	29.28	29.23	47	47	44	48	SW	SW	1	2	or 1) (2)	bc
9	Th.	29.56	29.66	40	45	38	46	W	W	3	1	b	bcp 3)
10	F.	29.68	29.56	51	53	44	55	SW	SW	5	6	qbc	qbcp 3) (4)
11	S.	29.65	29.67	53	54	49	56	S	S	4	4	bc	bc
12	Su.	29.56	29.46	50	52	48	53	S	S	4	5	bc	qor 3) (4)
13	M.	29.50	29.45	49	52	47	52	SE	S	1	2	or 1) (2)	or 4)
14	Tu.	29.39	29.36	50	54	46	56	S	SW	2	3	bc	or 3)
15	W.	29.92	29.04	50	50	44	51	SW	SW	6	6	qbcp 2)	qbc
16	Th.	29.41	29.43	41	49	39	51	SW	SW	2	3	b	qor 1) (3) (4)
17	F.	29.16	29.16	48	50	45	51	SW	SW	6	6	qbcp 1) (2)	qbc
18	S.	30.06	30.34	39	43	38	44	N	N	4	2	bcp 1)	bc
19	Su.	30.17	30.10	48	51	37	52	SW	SW	5	5	qo	bc
20	M.	29.82	29.76	50	55	44	56	SW	SW	6	6	qbc	qbc

November, 1852. - Mean height of the barometer = 29.583 inches; mean temperature = 48 1 degrees; depth of rain fallen, = 6.06 inches.

SOUTH AFRICA

BIRD ISLANDS

and the

DODDINGTON ROCK

Light house { 33° 52' S.
26° 14' E.

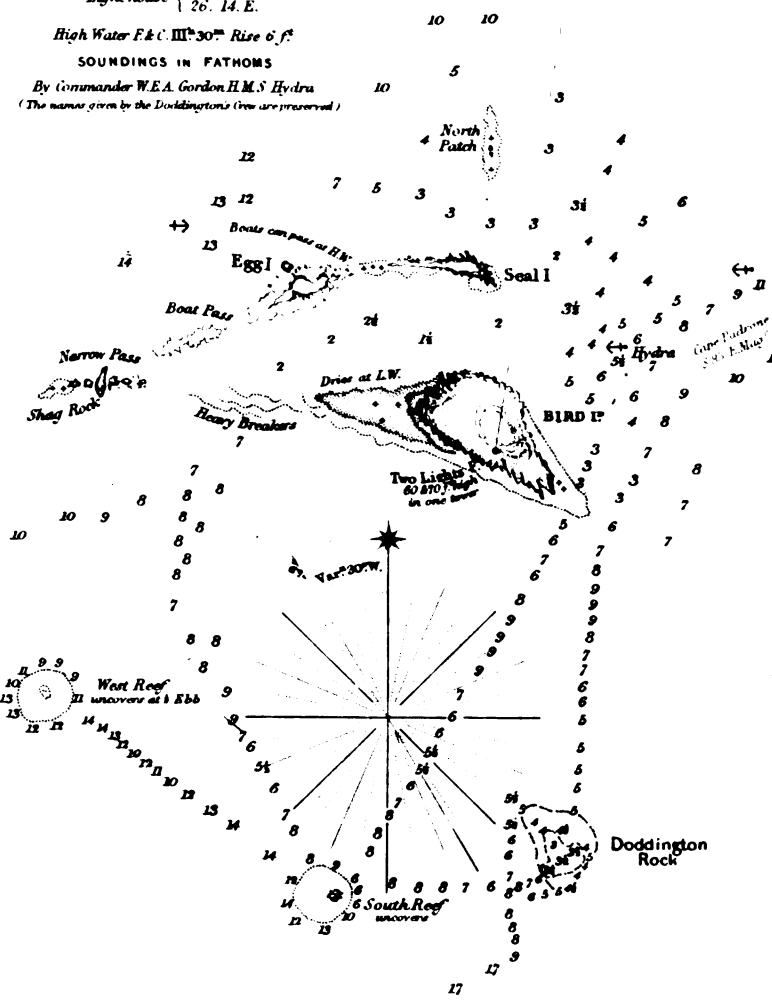
High Water F&C III 30^m Rise 6 f^t

SOUNDINGS IN FATHOMS

By Commander W.E.A. Gordon H.M.S. Hydra

(The names given by the Doddingtons (two are preserved)

Richd. Point
N. 60 E. 2 1/2 Miles



J & C Walker Sculp^r

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

FEBRUARY, 1853.

REMARKS ON THE PASSAGE OF H.M.S. RESOLUTE AND ASSISTANCE TO AND FROM THE ARCTIC SEA, UNDER THE COMMAND OF CAPT. H. T. AUSTIN, C.B., WITH OBSERVATIONS ON THE ICE OF BAFFIN BAY, MELVILLE BAY, WELLINGTON STRAIT, AND BARROW STRAIT. By Mr. R. C. Allen, Master, R.N.

The passage across the Atlantic, from the Orkneys to Cape Farewell, is usually made on or about the parallel of 58° N. lat. Cape Farewell should not be approached within 100 miles, and after rounding it, the coast of Greenland should be kept at that distance until the parallel of 61° is attained. Captain Graah, of the Danish Navy, in his *Voyage to Greenland*, makes the following remark which bears on this subject. Speaking of the ice which is carried from the Polar Sea along the east coast of Greenland, he says: "It often forms a belt round Statenhook or Cape Farewell, reaching from 120 to 160 miles out to sea, and frequently extends along the S.W. coast of Greenland or district of Juliana's Hope, making it necessary for ships bound thither to seek a more northerly port, and there await its breaking up.

Having attained the parallel of 61° N. lat., the coast of Greenland should be hugged as closely as possible by ships desirous of visiting the Whalefish Islands, Disco, &c.

The expedition of 1850-51, left Long Hope, in the Orkneys, on the 15th May; thirteen days afterwards we sighted Cape Farewell, passing 63 miles to the southward of it, where we met a small quantity of straggling ice, through which we sailed. Two days later, when about

70 miles from the land, we fell in with some stream ice, which we easily avoided by standing away to the westward.

In proceeding up for the Whalefish Islands, we cleared a heavy stream of ice lying nearly mid-channel between Cape Walsingham and the opposite coast of Greenland, by hauling up to the eastward; we also passed through a vast number of icebergs between the parallels of 67° and 69° N. lat., and the meridians of 55° and 57° W. long.

We arrived at the Whalefish Islands on the 14th of June; sailed again on the 23rd; touched at Uppernavik on the 25th, and reached the ice at midnight of the same date.

After passing the Whalefish Islands, ships intending to pass through Melville Bay make direct for the ice, and having arrived at its edge, they at once ascertain which is the land ice, and either secure to it or some convenient berg lying aground, and there await its further opening.

The expedition of 1850-51 passed between Brown and Berry Islands on the 26th June, and made fast to bergs lying aground in from 12 to 20 fathoms, to await the farther breaking up of the ice, which at this date was impenetrable to the northward of $73\frac{1}{2}^{\circ}$ N. lat., and it rested close home upon the land. Capt. Penny's two vessels, together with fourteen whaling ships, we here found similarly situated.

Advantage was taken of this opportunity to land on the Berry Islands, and some observations were taken to determine their position. That of the berg to which the ship was moored was also determined, and with these as a base, the surrounding land as given in the chart is laid down. Horse Head, Berry Islands, Brown Island, and the Duck Islands are known to the whaling crews by those names; Wedge Island and Cone Island were so named from their resemblance to those objects as seen from the Berry Islands. In passing to the N.W. of Cone Island, the *Pioneer* towing the *Resolute*, ran on a 10ft. pinnacle rock, and the *Resolute* struck it also. The reason for keeping the ships so close in arose from the circumstance of the ice resting home upon the land.

On the 2nd July we were abreast of the noble headland called Cape Shackleton, distant from it only half a mile, when the latitude was obtained from the sea horizon, and its position may be considered true to within two or three miles. It rises up perpendicularly from the sea to the height of upwards of 1,400 feet, and its vicinity is the resort of many thousands of loons. These birds are very much esteemed by Arctic navigators; their flesh is infinitely preferable to that of the wild duck of those regions, and the places to which they annually resort to breed and rear their young should be marked in the charts.

In passing up from the position of the 26th June towards the Baffin Islands, numerous deep fiords in the land were seen from the crow's nest, between the parallels of 73° and 74° N. lat., and giving it the appearance of a series of islands. Behind these was seen a continuous glacier, or ridge of land, wholly covered with snow, and this was considered to be the main land of Greenland. Lieut. Brown said that Sir Jas. C. Ross's expedition passed up through a mass of islands, (which

I have marked in the chart "probably an archipelago,") entering at the southern end on the parallel of 73° , and emerging northward of Cape Shackleton.

On the 3rd July we were fast to a large berg lying aground in 48 fathoms under the Baffin Islands. On the afternoon of the 4th we succeeded in passing the Duck Islands. It was while proceeding from Horse Head to the Duck Islands that the whaling ships took advantage of their experience and passed us, notwithstanding we had steam power. They afterwards informed us, that on arriving up with the Duck Islands they always find water there, and it is designated by them "the Duck Island water." On arriving abreast of Horse Head, therefore, they made straight for the Duck Islands, and while we were hampered by the ice near the Baffin Islands, they passed up outside of us with studdingsails on both sides.

The Duck Islands are low, and the position given them is by estimation, but it cannot be far from the truth. These are probably the "three islands of Baffin."

On the evening of the 5th July we opened out the Devil's Thumb from behind a high headland, (probably the Willcox Pt. of the chart,) bearing N. 50° E. (true), and on the 6th, from an astronomical position, its true bearing was obtained, and its distance was estimated at 8 leagues. Also, on the 11th, from an astronomical position, the true bearing of the highest part of Willcox Head was S. $58\frac{1}{2}^{\circ}$ E., distant 9 or 10 leagues.

According to the testimony of several whaling captains, "about eight leagues due west from the Devil's Thumb there is a reef with 100 fathoms on it, on which the large bergs lie aground and hang up the ice. The above bearing and distance are for its south end, and it extends from thence five or six leagues to the northward."

From the 12th to the 17th the ships were closely beset; on the latter date the ice loosened considerably, and the opportunity was eagerly embraced to take advantage of it, but unfortunately a dense fog came on. It was on this occasion that the great error of leaving the land-ice was made; from that time until the 9th of August we were drifted about with the loose ice, called the middle ice, and it is possible that we might have experienced a fate similar to that of the *North Star* in the previous season, had we not made in for some lanes of water to the eastward, which was done contrary to the opinion of the ice quarter-masters, who were for going to the north-west.

On the 9th of August our position was $75\frac{1}{2}^{\circ}$ N. lat., and $61\frac{1}{2}$ W. long., when we were enabled to make some progress, and at midnight on the 12th we passed Cape Melville, at the distance of a league. On the 13th at noon we passed close round Cape York, and having been detained there a few hours communicating with the natives, we passed Rugged Island late in the evening of the 14th. On the 15th we pushed to the westward through some loose ice on the parallel of $76\frac{1}{2}^{\circ}$, and during the afternoon of the same date we were enabled to haul to the S.S.W. into open water.

There are few seasons perhaps in which vessels cannot by persua

verance succeed in reaching Lancaster Sound by way of Melville Bay, but in most cases it is attended with serious delay. The whalers generally give it up about the middle of July, or perhaps in the third week, when they go away south, and get over to the west land to fish by Cape Walsingham.

A person may soon acquire considerable knowledge of the ice by occupying a large portion of his time in watching its movements from the crow's-nest. With a good glass he should carefully trace the different lanes of water one into the other, and after a little practice he will soon attain sufficient skill to direct the ship through the best leads. Indeed this is the only way to gain knowledge in this particular.

In making the passage through Melville Bay, no appearance of water, however promising, should induce a man to part from the land ice. It would be difficult to say now, how much sooner we might have reached the north water, had we not lost it during the fog before-mentioned.

One great element in the moving of the ice is the tides. During our progress through Melville Bay, we looked forward from time to time with great hopes that the spring tides would lift the large bergs off the ground, and liberate the ice which they confined. And though we did not succeed in getting very far on those occasions, from the circumstance of our being adrift among loose ice, we had opportunities of seeing the effect produced upon the lanes of water in-shore. It was the effect of a spring tide that at last set the ice in motion, and released the ships. A spring tide also liberated the ships from their winter quarters in 1851.

The track of the expedition (as shown in the chart forwarded by me) from the Duck Islands to the position of the 12th July, may be taken to represent the edge of the land ice, within which the ice was a compact body, which had not been disturbed up to the dates of passing. And again, the track from the 9th to the 13th August, will represent the edge of the land ice, later in the same season, in the upper part of Melville Bay. The track for the intermediate portion, which occupied a period of about four weeks, will serve to show the manner in which the ships were drifted about with the middle ice.

The disposition of the ice and its various movements in Baffin Bay, from the early part of each season when it begins to break up, until the close of each year when such as has not escaped out of the Bay to be melted in more temperate latitudes, again becomes frozen up, is a subject of great interest.

The whaling ships which leave our northern ports annually towards the latter end of February and beginning of March, after endeavouring to catch a fish or two to the eastward of Greenland, make their way up Davis Strait towards the latter end of April. Their object is to get over to the west land near Ponds' Bay, where the greatest number of fish is to be found, and to this end they pursue one plan, which is, to proceed up on the east side of the bay along the coast of Greenland, and pass to the northward of the middle ice; or, as has been done in

a few instances, a ship or two take the pack on (about) the parallel of 73° , and by dint of great labour and at considerable risk, these have got into the west water. And all the government expeditions have pursued one or other of these routes, not having time to risk the chance of a failure by seeking any other.

From the combined reports of the several navigators who have made known the results of their experience, we may gather, that early in every season there is water in Baffin Bay in the vicinity of Lancaster Sound. Where this water first makes, and the precise period, is not so well known. After our tedious passage through Melville Bay, and rounding what we considered to be the north end of the middle ice, we found ourselves in an open sea, which continued all the way down to Ponds' Bay, a distance of upwards of a hundred miles. A hundred miles of open water! and scarcely a particle of ice to be seen! while we had been beset nearly a month off Cape Walker, and had been fifty days in the ice. The transition seemed wonderful. The following queries naturally suggested themselves. How long has this great space of water been formed? How far east does it extend on the parallels of Lancaster Sound and of the Devil's Thumb? What is the breadth of that ice called the middle ice, which lies between the edge of this open water, and the track pursued by our expedition? Could the energetic Captain Penny have been right, when during our struggle through the ice he several times confidently declared we were close to the north water; that there was a water sky in the N.W. quarter?

It should be borne in mind that the state of the ice is ever varying. A strong westerly gale will discharge a large quantity of ice out of Barrow Strait, and to a person who had just arrived across from Melville Bay late in August, it might give the impression that the ice had broken up very late, and that there had been little or no north water that year. So also a strong northerly wind might cause a great discharge of loose ice from Smiths Sound into the upper portion of Baffin Bay, and it was probably owing to such a circumstance, that in crossing over from Lancaster Sound to Wolstenholme Island in August 1851, that the *Resolute* and *Assistance* fell in with so much ice; while on and to the southward of the parallel of Lancaster Sound there was an open sea.

On leaving Lancaster Sound, in the latter part of August 1851, we found a large space of open water at its entrance; but as we passed over to the east land towards Wolstenholme Sound, we found the whole coast lined with great quantities of ice, consisting of large floe pieces and loose sailing ice. During the first week in September we endeavoured to get close in with Cape York, but we found the ice extending along it also; at the same time we saw lanes of water close in by Rugged Island and Cape Dudley Digges. Now had we just emerged from making the passage through Melville Bay round by Cape York, we should have found the ice sufficiently loose, as in the previous season, to have crossed over to the west water. On the 6th September, Cape York being in sight, we bore up for England, and steering a true

course of about S.E.b.S. we lost sight of the ice in two or three hours; and here we have an instance of there being plenty of open water to the westward of the meridian of Cape York, while Melville Bay, as in the last season, may have been choked with ice, for we found Cape York, as before stated, hampered with ice as it was in the preceding year when we passed it.

It has occurred to me that a reef may exist, extending to the S.S.E. from Cape York, say 100 miles, on which the large bergs lie aground and detain the ice; this would account for the slow progress which is always made through Melville Bay. I cannot otherwise account for the ice not moving off when the winds blow from the S.E., East, N.E., and North points of the horizon, which they frequently did, and sometimes very briskly. To the southward of 74° , the slightest breeze from the northward was sufficient to make the ice stream off in the most wonderful manner. Strong off-shore winds occurring during spring tides, which latter would raise these bergs off the reef, would produce an open season in Melville Bay, and the want of them a close one.

A good examination of the deep-sea soundings of Davis Strait and some portions of Baffin Bay might lead to important results, for it is well known that the large bergs lie aground in some parts which are shoaler than others, and prevent the fields of ice having a free egress out of the bay. And if these spots were known, it might possibly lead to the discovery of some route by which that through Melville Bay may be avoided, or at any rate facilitated.

Were it not that the whalers must have discovered a route by which the north water may be attained, other than that through Melville Bay, did such exist, I should be very much inclined to the opinion that towards the end of June a ship might get across to the westward on or about the parallel of Disco, by watching an opportunity during S.W. winds.

The *North Star*, in July 1849, being in the latitude of 74° , bore up to the southward and attempted to cross the pack in $72^{\circ} 20'$, but finding the ice very close there, she retraced her course. And the *Abram*, of Hull, took the pack nearly on the same parallel about three weeks later, viz., on the 31st July, and succeeded in getting over to the west water by the 21st August. But neither of those vessels, I think, went far enough to the southward.

It has been said that there is no resemblance between any two seasons, as regards the disposition of the ice, and it is no small presumption perhaps to be hazarding new opinions with a small amount of experience. But if we all wait until we can speak confidently, and without confiding our ideas to the judgment of others, we should make but slow progress in most affairs.

Having touched at Possession Bay and Ponds' Bay, the *Resolute* and her tender entered Lancaster Sound on the 25th August, and proceeded along the north shore. But very little ice was seen until we arrived abreast of Prince Regent Inlet, with Leopold Island in sight, on the 27th. It was intended to have touched at Whaler Point,

but finding that the ice would render this a difficult matter, for it stretched east and west as far as the eye could reach, we bore up for Cape Riley, where we arrived the same evening. In standing across from Leopold Island to the Wellington Strait, we found this portion of Barrow Strait filled with ice, consisting of large fields making their way to the eastward.

We were detained at Beechey Island until the 5th of September, when we succeeded in getting across to Barlow Inlet.

We found the Wellington Strait entirely blocked with ice. Penny, who had preceded us in his arrival at Beechey Island, said, that the ice which stretched across the strait was from seven to fifteen feet in thickness, and he was of opinion that it was at least four seasons old : i.e. the ice in the Wellington Strait had remained unbroken for four years. He crossed over from Beechey Island, three days after us, several miles to the northward of the parallel on which we got across. The wind, which was from the northward, was driving out huge floe-pieces into Barrow Strait; and it was to windward of two of these immense fields of ice that we saw him standing over, half courses down. So that this ice of four seasons, if, indeed, it was so old, was being disrupted and carried out to sea in September, and this too in a season which may be regarded as having been a very close one.

In a channel like the Wellington Strait, whose opposite shores are so nearly parallel, the tides exercise a powerful agency in breaking up and carrying off the ice. Each succeeding tide raises or depresses the water level, and with it the ice; consequently, all along the shore, where the depth of the water exceeds the extent of rise and fall, the ice is cracked, and left free to float away as soon as the pressure from without is removed. Coupling this fact with the circumstance of the United States ships having been set up the Wellington Strait, and down again at the close of this season, (1850,) I should incline to the opinion that the ice is disturbed more or less throughout its whole length every season; and farther, I think it will be found that an open season in the Wellington Strait is the rule, a close season the exception.

Now with regard to the thickness of the ice being as much as fifteen feet:—There are limited portions here and there, no doubt, where ice may be fifteen feet, or even, as seen by Commander Inglefield, upwards of twenty feet, in thickness; but these, I think, are produced or caused by the coming together of large fields of ice, when, heavy pressure taking place, one part is piled above another; and these, when it takes place late in the season, get cemented together. But I do not believe that any extensive field of ice, seen by us, either in Melville Bay or Barrow Strait, exceeded, I think I may say, seven feet. The ice in Melville Bay ranged from about two to six feet in thickness; that of Barrow Strait from two and a half to seven feet.

On the 9th September, after much difficulty, and having been in imminent risk of being set out into Barrow Strait along with the pack, we got round Cape Hotham, and, proceeding to the westward, we arrived on the following day off the S.E. point of Griffith Island, where we were rejoined by the *Assistance* and her tender.

At this period an extensive floe rested on the south shore of Griffith Island, and the ice between Cornwallis and Griffith Islands had not broken up, so that our further progress was arrested. An extensive lane of water leading from the east end of the large floe above mentioned, stretched away to the southward, down which the ever active Captain Penny proceeded in the *Lady Franklin*; he was followed by the *Intrepid*, but both vessels gave it up after a brief examination, as, owing to thick fog, there was every probability of their being cut off from their consorts. On the return of the *Intrepid* it was said that she had been several miles down the lead in the direction of Cape Walker.

On the 13th September, finding we were driving fast to the eastward with the ice-field, to which we were moored, we made sail and plied to the westward amid loose ice, and gained the fixed ice, between Griffith and Cornwallis Islands. Here we remained for the winter:—i.e., until the 11th of the following August.

About the middle of September the navigating season closes in Barrow Strait, or perhaps a week later in very open seasons and when the temperature has not become very low. Sir Edward Parry, in his voyage to Melville Island, decided on going into winter quarters on the 20th September, and he with difficulty succeeded in attaining his object in something less than a week later. On the 14th of the same month he had had the temperature as low as 9° and it was seldom as high as 20° after that date.

On the 13th September, the last day we were under way this season, (1850,) we had the temperature down to $1^{\circ} 30'$, and for a week after, it ranged between that and 26° . So that although there were several inconsiderable lanes of water to be seen outside Griffith Island, the formation of young ice was so rapid that the ships could not be moved to any distance.

I should think, therefore, that in this locality (Barrow Strait) a winter harbour should be secured soon after the first great fall in the temperature, whether it be in the middle or end of September. I do not mean that a winter station should at once be secured because the temperature may have fallen a few degrees; but if by the middle of September, with the ice in an unfavourable state for progression, and a temperature varying from 5° to 10° and 20° , then, judging from the experience of this season (1850) and from what has been said by former polar voyagers, I think that a winter station should be secured. I would wait a short interval, perhaps, to see if the temperature got up again, or for an expected wind from a particular quarter, or to watch the effect of a spring tide; but after disappointment in these several particulars I would, forthwith, get into winter quarters.

Before the expedition of 1850-1, it was thought that there was no harbour or station along the north side of Barrow Strait, between the Wellington Strait and Melville Island, where a ship could pass the winter in safety. Experience, however, has shown that the north shore abounds in places of security, and that this strait may be navigated, as long as any progress can be made, up to a late period, provided the north shore is kept aboard.

In the latter end of April, 1851, I was despatched with a sledge party, victualled for eighteen days, to report upon the state of the ice in Barrow Strait.

From an eminence on the south end of Lowther Island I had a good view of the ice towards Cape Walker. For several miles across there was a fine smooth floe, interrupted here and there by a few ridges. And I was led to form the opinion, that during some portion of the previous season (1850) this was a sheet of water, and that, had we had the good fortune to have got across from Melville Bay three weeks or a month earlier, we might have got considerably farther to the westward than Griffith Island, for at the period of our arrival there, the season was fast closing.

There were also evidences of there having been extensive lanes of water westward of Lowther Island, which strengthens this opinion.

To be able to do anything in navigating Barrow Strait, vessels should be up with the entrance of Lancaster Sound early in August, or at the latest by the middle of that month, for early in September the bay ice forms rapidly and cements together the large pieces of ice that may be driving about.

The travelling parties (two of which had been away from the ship for a period of 80 days) had all returned by the 4th July, and we now looked forward to the time of our liberation.

It is a circumstance worth mentioning in this place, that Dr. Bradford when making his way northward along the eastern shore of Melville Island, as well as Lieut. Aldrich who was also travelling northward on the opposite coast of the same inlet, had frequent fogs, while Lieut. M'Clintock, proceeding along the south shore of Melville Island, at the same time had fine clear weather. "These fogs," to use Dr. Bradford's words, "came rolling down from the northward like a great black cloud." This may be taken as evidence of water in that direction, and it probably communicated with that seen by Penny.

I would here remark, also, on the entire absence of icebergs in the Wellington Strait and in Barrow Strait. A stray berg or two may occasionally get well up Lancaster Sound, but I have not heard or read of one having been seen to the westward of the meridian of Cape Hurd. When we were in the upper part of Baffin Bay, to the northward of the Carey Islands, in 1851, we found it thickly studded with bergs; whether these came through Smith Sound or were generated in some neighbouring glacier I cannot say; but, judging from the two facts as they stand, in conjunction with Commander Inglefield's discoveries, if a polar basin or a N.W. passage do exist, I think Smith Sound affords the readiest way to get to either. At the same time we must recollect that the boundary of the visible horizon as seen from the crow's nest of the gallant little *Isabel* did not exceed, probably, seven miles; and the "open water far far as the eye could reach," might not have been so extensive as her gallant, and no doubt highly-elated, Captain believed it to be.

In the season of 1851 the water in Barrow Strait was first seen from the S.E. point of Griffith Island, on the 30th June, and by the

17th July it was seen from the deck of the *Resolute*. For several days from this date we were tantalized by the extremely slow progress it made towards the ships; we saw with much satisfaction several large fields of ice outside Griffith Island driving away to the eastward and giving promise of an open season.

On the 24th July, water was observed to be making off the N.W. end of Griffith Island, and in four days more it had so extended itself as to be within a mile of the ships; while in the N.W. direction the water reached beyond the horizon of the crow's nest, or about eleven miles. This movement took place at the period of spring tides.

Attempts at forming canals through the ice towards the expected point of liberation by strewing gravel, ashes, &c., in that direction, had been made; as well as by cutting it through with saws, and blowing it up with gunpowder, but the results were highly unsatisfactory. And it was not until by the total disruption of the ice between Griffith and Cornwallis Islands, on the 10th and 11th of August, during spring tides, that the ships were liberated.

On the 12th of August we went past the Wellington Strait. On its eastern side along the shore there was a channel of water, of considerable width, (probably five miles,) extending to the northward as far as the eye could reach from the crow's nest, or about eleven miles. In all records that are kept of the Polar regions this must be regarded as a remarkably open season.

The expedition now made the best of its way out of Lancaster Sound, in clear, open water. The *Pioneer* and *Intrepid* parted company off Cape Warrender, for the purpose of examining Jones Sound; while the *Resolute* and *Assistance* proceeded for Wolstenholme Sound, where they were to await the arrival of the tenders, the appointed rendezvous being between it and Cape York.

We did not get across so easily as we expected. Soon after passing to the eastward of the meridian of 74° we fell in with some heavy field ice, and the ships were plied to the northward along its western edge, but finding that it extended to the N.W., the ships were boldly pushed through it; and, passing to the northward of the Carey Islands, we succeeded in arriving off Wolstenholme Island on the 26th of August.

There are two or three loomerics among the Carey Islands. The shooting parties from the two ships bagged as many as 600 looms in one day, and a welcome treat they proved.

We found the east coast, from Cape Parry to Cape York, lined with ice, consisting most of large floes which had probably been discharged from Barrow Strait or the upper part of Baffin Bay. It extended out from the land from three to four leagues, while along the shore there were lanes of water, through which the tenders passed down while the ships were outside.

The selection of places of rendezvous in these regions requires some consideration. The very best, probably, is Cape Warrender; for near it water may be expected early and late in every season. It is in every way convenient for vessels bound into Lancaster Sound, or to

those bound south at the close of a season. Vessels proceeding up for Smith Sound would be necessitated to appoint Cape York, Cape Dudley Digges, or Dalrymple Rock as places of rendezvous. The rendezvous appointed for the ships to meet the tenders reached, as before stated, from Wolstenholme Sound to Cape York, which was by far too extensive; the result was that they passed each other twice unknowingly, and it was by the merest accident that we were enabled to rejoin company at last.

On the evening of the 6th September, with Cape York in sight, we bore up for England, and passed down Davis Strait with all despatch.

On our way down the bay we saw but little ice. A stream of it was seen in lat. $72^{\circ} 30'$ N., long. 63° W.; and while steering S.S.E., (true,) between the parallels of 72° and 69° N. lat., and the meridians of 62° and 57° W. long., we passed through numerous heavy bergs, after which no more ice was seen.

We rounded Cape Farewell on the 17th at the distance of eighty miles, and on the 25th September we passed into the North Sea by the Fair Island passage.

It may be seen from an inspection of the state of the ice in Baffin Bay in the season of 1851, as delineated in the chart sent by me, that in that year a vessel entering Davis Strait in September, might have made her way to Lancaster Sound without any obstruction. And it may be fairly inferred that she might have communicated with Beechey Island and have returned to England that same season by the end of October. So that if it were desirable in the ensuing year (1853) to send a vessel out to communicate with Sir E. Belcher, it might be easily effected by despatching a vessel in August (the *Lady Franklin* for instance) on this service. Or should his stay in those regions be prolonged beyond the period when it would be desirable to hear from him, this suggestion may be held in remembrance.*

A vessel despatched on the above service, by sailing earlier, might fill up some gaps in the chart of magnetic declination on both sides of Cape Farewell, as, also, in Davis Strait. After communicating with the *North Star*, she might, on her way down Baffin Bay, stand across from side to side, and add some valuable soundings and other matter to the chart. The state of the ice in Melville Bay, beginning at Cape York, might be examined also, down to the parallel of 73° or as far as it may happen to extend.

* This paragraph was written before the return of Commander Inglefield.

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from page 29.)

Friday, May 17th. After a vain attempt to get away at daylight under sail, at 9h. 30m. A.M. I started under steam, and steered for Gutzlaff Island, the fog at times so thick that I thought it would be impossible to go on, and I had given orders to burn the fires down, preparatory to banking up, when we caught sight of the island about a mile ahead. Stood on under all the steam the boilers would give, passed it about a cable's length to the westward, and although ten minutes after it was shut out by the fog, I had faith in Collinson's chart, and proceeded up the river, trusting entirely to the soundings. The tide was in our favour, and the ship's speed, by the ground log, averaged nine knots. We kept hold of the south bank, which shelves very gradually, never increasing our depth beyond four fathoms, and for a short time were in a quarter less three; this I ascertained afterwards was the edge of a shoal gradually forming hereabouts. About 5 P.M. the fog, which had been so thick at times we could scarcely see the jibboom, began to lift a little, and we passed through some fishing stakes. Just above them two large ships were at anchor; one, the iron ship *Panic*, of Liverpool, we gave rather a close shave. Soon after the *Joss Poles*, of Woosung, hove in sight, and by 6h. 15m. P.M. we had crossed the bar at the entrance of the river, and anchored in 5½ fathoms outside the opium depots, which muster strong here, there being no less than nine English and two Americans moored in the reach.

We had scarcely anchored when a boat from Messrs. Dent's ship, the *Emily Jane*, brought our February mail on board, which had come up from Hong Kong in the *Lady Mary Wood* steamer, and this act of kindness on the part of Captain Landers was fully appreciated.

In no part of the world is the value of a letter more felt than in China. Although surrounded by millions of human beings, a European cannot help feeling himself isolated there; he can have no communication with a people whose very thoughts appear to be on all subjects antagonistic to his own, and after the first burst of curiosity is gratified, there remains nothing but a dull monotony, terribly depressing to the spirits, which home influences, through regular correspondence, can alone relieve.

May 18th. At 5 A.M. I proceeded up the river to Shanghai, a distance of twelve miles. The morning was beautiful, and our appearance excited universal amazement, the *Reynard* being the first screw vessel that has ever appeared in these waters. The reaches were crowded with junks, large four-masted craft, many in tow of their boats, taking advantage of the tide. Whenever I found one of them likely to interfere with our progress, I turned on the steam whistle, which had the effect of clearing the way instantly, the boats letting go

the tow-line and taking refuge alongside their junks, wondering what was coming; it was very rich!

The scenery on the banks of this river has nothing to recommend it. The turbid stream flows through an alluvial level, and its banks, low and uninteresting, reminded me somewhat of those of the Scheldt, or the Thames at sea-reach; but the country is every yard of it highly cultivated; large quantities of grain are raised here, the wheat and beans are nearly ready for cutting, the fields are dotted with clumps of fine trees, among which the peach is conspicuous, its fruit is famous in this district; and if the half naked savages that crowded the banks to stare at us could have been clad like Christians, and the miserable mud hovels converted into comfortable cottages, a stranger might have imagined himself in England or Belgium instead of China.

Before seven o'clock we were at anchor within half a cable's length of the European town of Shanghae, and moored at low water in $2\frac{1}{2}$ fathoms, with 15 fathoms each way; British Consul's flagstaff N.N.W. one cable. Draught of water forward, 11ft. 2in.; aft, 12ft. 6 $\frac{1}{2}$ in.

This emporium of our trade in this quarter of the world has sprung up as if by magic in the short seven years that have elapsed since the treaty of Nankin was signed, and bids fair to become in a few years more a place of considerable magnitude. Substantial houses are building in all directions, and the large Chinese city begins to look already but a dependency upon its thriving neighbour, an illustration of Anglo-Saxon energy and enterprize which it is impossible to view without great interest. Nor can it be forgotten that this thriving colony has thus been permitted by Providence to be planted in the heart of a heathen country for some good purpose, that by this means a knowledge of the Gospel will, through the industry and zeal of the missionaries resident here, become disseminated through this vast population.

H.M. brig *Pilot* is here, and as our stay is to be very short, I obtained our supplies of fresh beef through her. There are no coals to be had, and wood is enormously dear. Water is taken from the filthy dirty river; it is not considered unwholesome, but requires three or four days to settle in the tanks before use. Thanks, however, to our distilling galley, which has never failed in its supply, we are not reduced to the necessity of using any of it yet, except for washing.

Wednesday, May 22nd. At noon I received my despatches for the Peiho from Mr. Bonham, H.M. Plenipotentiary in China. Embarked Mr. Walter Medhurst, who is appointed to act as Interpreter, and started at 1 P.M. under steam on my expedition; found the river much crowded in some places, and great care was necessary to navigate clear of the junks. At 3h. 20m. dropped the anchor for ten minutes at Woosung, while Mr. Alcock, H.M. Consul, who accompanied me so far with his family, left the ship, and then proceeded rapidly down the river. At 6 o'clock the ebb had finished, and as the wind was fresh in our teeth, I followed the example of a convoy of junks and their attendant lorcha, and anchored in $3\frac{1}{2}$ fathoms, soft mud.

23rd. Soon after 1 A.M. we started again, and groped our way

down the river by the soundings, wind still strong ahead, but we averaged seven knots and a half over the ground, and at daylight, after four hours of anxiety, which those who have had to navigate the entrance of this river will fully appreciate, I had the satisfaction of finding the ship in the fair-way, and clear of all dangers. Got the screw up directly, and shaped a course for the extreme point of the promontory of Shantung, with studding-sails set, low and aloft. There seemed every prospect of this vein of fair wind lasting, so the propeller was transported to the stoke-hole, for the engineer to try his hand at tinning the new iron blade, which threatens at present to swallow up all our supplies of red lead, unless some substitute to prevent corrosion can be discovered. We passed numbers of four-masted junks, all standing on the same course as ourselves, and they are all probably from the same port, as there is a large junk trade between Shanghai and Shantung.

It is computed that not less than 1,500 vessels of various sizes, their average burthen 1,000 tans,* (about 200 English tons,) and navigated by nearly 30,000 men, ply between these two places. They make four, and sometimes five voyages a year, carrying to the north raw cotton, long cloths, nankeens, and sycee, and bringing back peas, beans, oilcake and cabbages, the latter vegetable being almost a staple article of food among all classes, and most delicious it is, either cooked or pickled raw.

Saturday, 25th. Since shaping our course across the Yellow Sea, we have carried a uniform depth of 34 to 36 fathoms, until 2 A.M. this morning, when Massey's lead gave only 24 fathoms, and at 3 o'clock 17 fathoms; so fearing an indraught, and that we had been set closer to the land than I intended to approach it, I hauled out and soon deepened our water again. A curious Chinese chart of Medhurst's has, however, a sand bank marked on it, extending right across the sea to the coast of Corea, and it is not improbable that we may have struck soundings on it.

The propeller was replaced to-day, as the engineer's attempt was evidently a failure, although he had succeeded with the first coating of tin. The weather had changed somewhat suddenly in the morning, although the wind continued fair, with plenty of it, but a fog had come on so thick that I deemed it prudent to shorten sail to topsails, and proceed very cautiously. We could not be very far from Alceste Island at noon; guided by the soundings I gradually altered course to the westward, and the fog clearing off a little before sunset, the highlands of Shantung were observed ahead, and we anchored for the night, the water being perfectly smooth, in 13 fathoms hard clay, with Lecong Island S.E.b.S. 6 miles, and the western extreme of Shantung promontory S.W.b.S.

We remained here all the next day, (Sunday,) as the fog continued so thick at times, with very light variable winds, but the following

* The tan, or Shantung picul, not the foreign picul, is a *measure* of grain, and the quantity one of these junks can carry is always painted on her quarter.

morning a fine breeze sprung up from the northward, which I was not slow to avail myself of, and after coasting along in beautiful weather, which enabled us to have a good view of the very remarkable land of this province, we anchored again at 11 o'clock, the wind having failed, in 17½ fathoms mud, about 5 miles east of Tung-chow-foo, a large city situated on the point of land forming the entrance to the Gulf of Peh-cheh-le, and close to a very remarkable mound, evidently a tumulus.

May 28th. Started at noon with a nice breeze from the northward, passed close to Tung-chow-foo, the walls, guard-houses, &c., of which city were crowded with the inhabitants to see us pass,* and before dark we were well inside the Gulf, water smooth, reminding me of many a pleasant sail in the Mediterranean. The wind was steady at East, but the haze, not fog exactly, was occasionally very thick. By 11 P.M. of the 29th we had run our distance by the ground log, and the anchor was dropped in 4½ fathoms, mud, off the Peiho river.

May 30th. At daylight numerous junks were observed at anchor in-shore, and a bit of low land, which the mirage converted from time to time into all imaginable shapes. At 5h. 30m. I stood in for the bamboo beacons which are placed to mark the entrance of the river.

"The Bar of the Peiho runs N.N.E. and S.S.W.; it has three or four feet on it at low water, with six or seven feet rise at springs; high water at full and change, 3h. 30m. Five or six miles outside the river is a bamboo beacon, with a row of bamboo stakes, continued to the shore; these stakes are to be kept close aboard on the larboard side. After clearing the Bar, the course is W.b.N. (by compass) in the best channel; the river is here one-third of a mile in width, with three fathoms at low water. The expedition (with Lord Macartney) crossed the Bar at spring tides on August 5th, 1793."

The above remarks, by Capt. Campbell of the *Jackall*, the *Lion's* tender, are extracted from Sir George Staunton's valuable work on China, and they may still be considered the best directions for the navigator, although fifty-seven years have elapsed since they were penned.

Finding the tide running strong against us, I anchored and got the steam up, and at 9h. 30m. started again, and stood as close to the outer beacon as possible, dropping the anchor in a little more water than the ship drew. I then went in with the master to examine the entrance, and sound the bar. While thus employed, our proceedings were interrupted by a hail from a fishing-boat, and through Medhurst, who had fortunately accompanied me, I was informed by the Chinaman in her that he was on his way to the ship to ascertain our business, and that the Mandarins who sent him were coming, but could not get out of the river till the next tide. As the junk in which they were

* The last European ships seen here were those of Admiral Elliot's squadron, consisting of H.M.S. *Wellesley*, *Blonde*, *Modeste*, *Volage*, *Pylades*, *Madagascar* (St.), and two transports; they arrived in the Gulf of Pechele on August 8th, 1840, and before their departure a communication was opened with the city of Tung-chow-foo.

was not far off, we went on board, and found five Mandarins (two white and three brass buttons,) who had been deputed by the Heati, or Commandant of the Forts, to find out what we wanted. They received us very civilly, entertained us with tea, (wretched stuff,) and requested me to put down in writing the business I had come upon. This Medhurst immediately complied with. I then informed them I was anxious to get my ship into the river, as the anchorage outside was very unsafe, and requested I might be supplied with a pilot; they immediately promised one, and after an assurance that I should have a communication from the Heati to-morrow, we returned on board.

The next morning at the top of high water, (7h. A.M.) I examined the bar again, and found only nine feet, hard sand; so shifted berth, and moored the ship with an open hawse to S.E., as close as possible to the stakes, being distant from the outer one about two miles, and in a quarter less three at low water, soft mud.

We had scarcely finished mooring when the mandarins arrived in two large river junks, which ranged up alongside, their mastheads being taunter than our topsail yards. As the steam was not blown off I gave them, as a salute, three screams of the whistle, which they took as a compliment and appeared quite satisfied with their reception; chairs were placed abaft the mizenmast; tea, champagne, and cigars handed round, and the drum, fiddle, and fife struck up while our conference was being held.

They informed me that no pilot could be procured, that the commandant of the forts could not receive my despatches, but that he had sent notice of our arrival to the Chintae, or General in command of the troops at Tientsin, who would be down to night and would provide me with boats and a guard to escort me up the river to Peking. This was unexpected intelligence, but Medhurst evidently placed little confidence in it; and, after the duplicity I had experienced at Killon, I was equally indisposed to believe them; if, however, it should turn out to be true, I am placed in an awkward position.

As there seemed a prospect of detention here, under any circumstances, I demanded a supply of fresh provisions for my ship's company, which they readily promised; and they left the ship assuring us that they would come off again to-morrow with the provisions and news of the General's arrival; in the meantime they begged me to remain on board. The weather was beautiful, so I took advantage of it to refit aloft, which has not been done since November: sent the lower yards down, and shifted top-gallant masts, and jib-boom.

Saturday, June 1st.—A junk with two brass-buttoned mandarins came alongside this morning before eight o'clock, who said that they had been sent by the General of a division stationed to the northward of this, to ascertain our business; they were informed that this was a British ship-of-war employed on public service; on their requiring more particular information, they were told that it was not customary for British men-of-war to be interrogated by everybody as to their business, but that if they wished to know more about us they were

welcome to make inquiry of the Tientsin authorities, who were already informed of the object of our visit. It is my belief they came for opium!

About noon, the mandarins who were on board yesterday arrived, but without the provisions promised; they were accompanied by two blue-buttoned Mandarins, calling themselves Colonels, who stated that they had been sent by the General, who had just arrived at Takoo, and had directed them to see what we wanted. As this information had been already furnished in writing to the Commandant of the Forts, and the receipt of it had brought the General down from Teintsin, it was remarked that a repetition of this demand seemed perfectly unnecessary, and that the question, now, was whether the General was prepared to facilitate the transmission of the letters in my charge to Peking? To this query they replied that the General had no authority to act in the matter without permission from the Viceroy of the Province, and that, probably for the same reason, he would not be justified in receiving me if I went ashore; and after a very long rambling statement, by way of explanation of the individual responsibilities of Chinese officials, concluded with an intimation that by the Treaty we had no business here. To this it was replied, that the restrictions to the Five Ports only applied to merchant ships, and was not binding upon vessels of war, which had the right of entry into any port of a friendly power; but this was a question for the respective governments to settle; an officer had only to obey his orders.

One of them then impertinently remarked that on a previous occasion, in 1840, when Elliot and Morrison came to this port, the name of the *Eye* who had charge of the letter had been given, and that in this case they had not been made acquainted with it. The term *Eye** being an opprobrious epithet for rebel chiefs, never applied to an officer bearing his sovereign's commission, he was informed, that if he made use of such language he would be shown over the gangway; and as it was now evident from their behaviour that further communication with such subordinates was useless, I put an end to the conversation, and informed them that I should wait on the General, on shore, at once. From this resolve they did their best to dissuade me by earnest entreaties; notwithstanding which, however, I manned my boat and proceeded, accompanied by Messrs. Medhurst and Boone, Paymaster of the *Reynard*, to the forts on the river, a distance of seven or eight miles, leaving the Colonels and the whole of their suite, with the exception of one white button Mandarin, whom they requested me to take, evidently in a great state of excitement and alarm at this unlooked for termination to the proceedings.

I had afterwards every reason to be satisfied with the course thus taken, as I discovered, on my way ashore, from the Mandarin who accompanied us, that both the Chintae (General) and Taoutae (Chief Civil Officer) of Tientsin were actually at the forts, with a large body of troops, awaiting the return of the Colonels.

* Elliot was called by the Chinese, "the Barbarian Eye."

The entrance of the river Peiho is defended by four mud forts, and a stone tower or castle. The forts, which have been constructed since Admiral Elliot's visit to the Gulf of Pechele, are skillfully planned; and although apparently rudely constructed would stand a good hammering. They are stockaded in front, but, like all the Chinese forts I have yet seen, open to the rear. There are three on the right bank, and one of these, if well served, would be found a formidable opponent, for it completely enfilades the river, which here makes a bend. On the left bank there is only one mud fort, and the (no doubt) very ancient square stone castle.

The number of guns mounted on these works I was unable accurately to ascertain; but I estimated it at little short of a hundred, of all sizes and calibres. On arriving abreast the forts, after a sharp pull against a strong ebb tide, we found them filled with troops, with banners flying, and a battery of twenty-two field pieces, drawn up on the crest of the right bank, between the two inner forts, also manned and apparently pointed at my boat; a considerable body of matchlock men occupied a position on the right of the guns.

It was dead low water, and the mud, almost knee deep, prevented our approach within fifty yards of the forts. As I was attempting to go ashore, on my men's shoulders, a message came from the Chintæ requesting me to wait until the planks used to land on were brought. After waiting patiently for three quarters of an hour in the sun, which was enough to broil us, through the awning, and on the banks of what was little better than a fetid ditch, without any signs of the planks coming although we observed them ready, and they might have been brought in five minutes, I landed without them and walked past the field battery to a tent in the rear of the principal fort, where I found the Chintæ and Taoutæ of Teintsin, in their official dress; the former wearing a red coral button, the latter, one of dark blue; both attended by a number of inferior officers of all grades, who crowded closely round, and listened attentively to the conference that ensued.

(*To be Continued.*)

LOSS OF THE BRIG MARY AT NATAL, WITH EARLY RECOLLECTIONS OF THAT SETTLEMENT.

(Continued from page 36.)

Rachael, the Hottentot woman, informed us that she was left in charge of Mr. Farwell's establishment at the head of Natal Harbour, called Fort Farwell;* that Mr. Farwell and the male portion of the

* Ruins of Farwell's house and fort, and also wreck of the *Mary*, appear on the plan of Port Natal by W. T. Haddon, Master of the brig *Dove*, in 1835, published by the Admiralty, and which differs sadly from another of the

party were absent, with the chief of the country's forces, against a neighbouring tribe in the south-west, called the Izee-can-yon'a; that the chief in whose dominions we then were was called Shaka, King of the Zoolas; that the Zoolas were a powerful tribe, and Shaka, the King, a great conqueror. But what proved to us the most pleasing part of Rachael's narrative, was that this King Shaka was very friendly disposed towards the white people, and that we might rest assured of his protection; that Mr. Farwell and his party had been called on to assist the Zoolas in the contest with Izee-can-yon'a, for their safety depended on the Zoolas being victorious, as the hostile chief was not considered friendly to the white man, but no compulsory measures had been adopted to enforce the white men to join the Impee (war or army). Rachael wound up her account with a kind invitation to Fort Farwell, which was accepted by Mr. Isaacs, a passenger, who accompanied her to the latter place. The pleasing part of Rachael's narrative, respecting the friendliness of King Shaka with the white men, infused a degree of cheerfulness among us, and the truth of her tale was evinced by the respect shown to her and us by the natives who accompanied her from Fort Farwell. She seemed to possess complete control over them, ordering them about at her pleasure, and chastising them with a cane if they did not give prompt obedience to her orders. She told us they were the servants at Fort Farwell, and that the lower order of natives were great thieves, and cautioned us to watch them closely.

Port Natal lies in lat. $29^{\circ} 53' S.$, and long. $31^{\circ} 2' E.$; is bounded on the West by the Cape, of which there are three, called the Points of Natal, first, second, and third, the latter of which bounds the western entrance to the harbour of Natal, being a bold promontory and rising to a considerable elevation above the neighbouring coast to the eastward, and on the whole presents a remarkable headland, by which Port Natal may be readily distinguished. On the East side the entrance to Natal is formed by a low sandy point, which, as it trends eastward, rises in detached and conical shaped sandhills, but as the sand composing these hills is very loose, they occasionally undergo changes in appearance from the effect of the wind; while some entirely disappear, others are thrown up in their neighbourhood, varying in size and shape in proportion to the force of the wind. Indeed the whole strand on the eastern side of the harbour appears (as also the Bar) to be a moving mass of sand, and is perpetually undergoing change. The eastern point terminates a thick wood, on its interior side; a fine sandy beach thence bends to the N.E., forming a somewhat deep bay, in which there is anchorage off the bar. Cape Natal bears S.S.W. from the mouth of the Amgani and Umslatus rivers, the latter now called river St. Lucia. For about twenty miles the land is moderately high, and declining gradually towards the sea coast, with a fine

same port, published also by the Admiralty, done in 1831 by Commander E. Hawes, showing how little we know of that harbour, for they are both little better than sketches.—ED. N. M.

sandy beach, until passing the river St. Lucia in an E.S.E. direction, it then becomes rocky and precipitous. The land about Natal harbour is high and generally mountainous, but contains fertile valleys. On the western boundary of the harbour the soil is mostly composed of a red clay, while that on the eastern side is of a light sandy nature, and has the appearance of being at some remote period submerged by the waters of the ocean. The land around Natal is favourable for the production of guinea-corn, and maize, as was evinced by the extensive gardens cultivated by the natives. The tribe of Matabana occupy the western shore of the port, and pay to Shaka fifty bushels of each of the above-mentioned produce annually, in their agricultural operations.

These poor natives, in the vicinity of Port Natal, were dreadfully annoyed by bands of predatory monkeys, which in their marauding expeditions committed the most dreadful havoc in their gardens and corn-fields. Even while planting, these mischievous animals would make their incursions to the fields, and pick the corn out of the ground with such dexterity, that it required the greatest vigilance on the part of the sowers to prevent them from completely robbing an acre of land of its seed corn in a very short time. Their cunning also almost surpasses belief; in fact, they often outwit the natives by their ingenuity in carrying on their depredations, and oblige them to be constantly on the alert to counteract their work of devastation on the gardens.

When a troop of these animals meditate an attack on a field of corn, (for it appears to be done by consent of numbers,) their first object is to send an old experienced party of their race to reconnoitre, and if the coast is clear, which is speedily communicated by the reconnoitring party, down sallies the whole herd in the quietest manner possible, selecting the most hidden road to the field of operation, which gained, sentinels are placed in every commanding position, to warn the spoilers of an approaching enemy. In this manner they first gorge themselves, and in addition carry off armsfull to secrete in the bush, and they will again return, if not warned by danger, to increase their store, where it is hoarded up for less fortunate times. In this way a whole field of corn has been literally carried off, and it very rarely happens that any is ever after recovered, unless a timely pursuit is made, when the booty is regained; but when pursued by women, they have been known to show fight for it.

The country is well watered about Natal by numerous rivulets, besides several large rivers, as the Umgainih, the Zootagoola, and Umslatus to the N.E., while there are several large rivers on the N.W., towards the frontiers of the Cape colony. The only drawback to the Natal country, (if it shall ever become peopled by a civilised race,) is its want of harbours, the Port Natal being the only navigable creek on the whole of this extensive coast eastward to the Portuguese settlement of Delagoa Bay, at the mouth of the Mozambique Channel. The entrance of Port Natal is impeded by a sandbar extending across it, but to vessels inside it affords the most perfect security. There are many sandy flats inside, that dry at low water, but the channels are

deep, and vessels of a larger draught than could come over the bar might lay afloat at all times of the tide, by mooring head and stern in the stream during the lowest tides. At the head of the harbour are several small islands, well wooded, and on an average it contains an area of 150 acres. From these islands large sandy flats extend, dry at low water, when they frequently present a beautiful and interesting sight in hundreds of flamingoes ranged over them, their scarlet colour presenting to the spectators at a distance the appearance of a grand parade of soldiers. To the N.E. and S.W. of these islands are channels in which vessels may ride in deep water. These channels abound with the hippopotamus, which frequents the islets to produce their young, when it is dangerous to land on them. The sea cow, as the hippopotamus is called, though timid and inoffensive, with the young ones in company being as fierce as they are at other times timid, and will not abandon them while they have life to defend them.

At the head of the harbour, in secluded spots, midst long and thick growth of water weeds, were the landing places, and from thence beaten tracks to rich savannahs, the resort of these huge animals at night to graze, always returning to the water at the dawn of day, and but occasionally making their appearance on the sandbanks, basking in the noonday sun, resembling rocks rising out of water to a spectator off the entrance of the harbour.

Varieties of fish abounded in the harbour, particularly at a high or spring tide, when such quantities would come in from the sea as to leave the sands literally covered with fish at low water. Turtle were occasionally caught in the native fish kralls, which are constructed by fixing a framework of reeds to posts driven into the sands at low water, forming a square inclosure, in one corner of which, on the lower line of the inclosure, level with the low water mark, a semicircular pen or inclosed space is run out into two or three feet water. The krall or pen being thus completed, (the whole being erected and secured in the course of one tide,) bait is thrown in the middle of the krall, where it is anchored, to entice the fish in at high water. In this manner the natives in the neighbourhood of Natal caught cart loads of fish at low water in their kralls.

It may be well to observe, that the Zoolas do not eat fish, or any kind of flesh save that of oxen; but the Kaffir tribe of Matabana, whom we found located at Port Natal, do eat fish, and every kind of flesh, not excepting that of monkeys, wolves, cats, and tigers. This tribe was conquered by Shaka, to whom (as before stated) they paid an annual tribute in corn, and they appear to have long been the original possessors of Natal. But they have a singular prejudice and abhorrence of the turtle, and when it has happened to be caught in their fish kralls, the whole of the other fish are thrown away as being polluted by the presence of the turtle. It is with great reluctance they even handle it, and they were quite disgusted when they found the Moolongas (white men) eat it. Whether this arises from some traditional prejudice is not certain, but the lafoota (turtle) is associated in their ideas with everything that is nasty and abominable. They say

its stench is so great that it destroys the purity of the waters of the harbour, and they can smell it the moment it comes in from the sea. This was of course new to us, but this prejudice of the Matanabanahs was to our advantage, for thereby we had all the turtle.

The promontory of Cape Natal was remarkable for the myriads of monkeys with which it abounded. A singular adventure occurred to me with a troop of these animals. The shore of this headland on the harbour side is densely clothed with large trees, their branches drooping in many places below the level of high water, and when the tide is up are washed by the water, but when the tide is out these branches allow a delightful shady walk along the margin of the harbour. One day while sauntering along the smooth sandy beach, soft and grateful to my bare feet, and enjoying the shade of this walk, I was startled by a sudden rustling of the branches of a very large tree, part of which stretched over my head, while another part bent down before me, as if sinking under a weight. I was fairly taken by surprise, and at the moment the idea occurred to me that a tiger was there, as all our dogs had been devoured by them. On the instant I made a rush for the water, which was at its lowest ebb, and about ten yards distant from me, when my ears were deafened by a simultaneous rush after me, and a deafening hurrah, as it sounded to me, when I thought a legion of tigers was at my heels. I rushed into the water up to my neck, and on facing about, to my great astonishment the whole beach for several yards was literally covered with monkeys, of all ages, sex, and sizes. Foremost in the ranks, and standing erect on his hind feet, was a very large monkey, who appeared to be the leader; his old weather beaten visage was screwed up into the most ludicrous shape, and he stood uttering an incessant hoo-hoo-hoo, in which he was joined by the whole troop, apparently exulting in their triumph. As for myself, I was in truth utterly confounded.

The whole scene seemed to have been conjured up by magic, such a legion of monkeys was new to me, and on turning to reconnoitre my enemy it was some time before I could distinguish more than a grey moving mass. However, I soon discovered the real character of my foe, but I was not perfectly sure as to the safety of my position, although these animals do not take the water. They appeared quite satisfied at having driven me into my present position; while the old patriarch of the tribe stood facing me in his erect position, his mouth contracted like a button hole and continuing his hoo-hoo-hoo, though in a feeble tone, while the smaller branches of the family had commenced a quadrille on the beach. There were mothers with their young clinging on their backs and others to their bellies and all evidently pleased at my discomfiture, the whole presenting a scene which, to an observer, would have been highly amusing. But not so to me, as the tide was beginning to flow, and being no swimmer, it became expedient for me to make some demonstration in my turn on the offensive. So picking up a handfull of small pebbles from under my feet, I saluted Father Abraham with a shower, which took effect among the crowd, and in the twinkling of an eye the whole mass disappeared,

with a tremendous chattering, hoo-hooing, and rustling, in the bush. I found on examining the scene of this adventure, that the tree abounded with a fruit resembling the cherry in colour, though much longer, on which these animals had been feeding, and I had suddenly disturbed them.

Port Natal, as is well known, was first discovered by the early Portuguese, and is reported subsequently to have been purchased of the natives by the Dutch East India Company, and became a harbour for slave ships, a factory being established there by the company about the year 1721. This, however, is very doubtful with regard to Natal, and it may have been confounded with the trade carried on at Delagoa Bay and English River. It does not appear that this diabolical trade ever obtained among the natives about Natal, for no traditions existed among them of their forefathers ever having any traffic or intercourse with Europeans. It was, however, regarded as a point of considerable importance, and one of the most fertile regions upon earth, according to a M.S. copy of Maxwell's *Narrative of the Cape of Good Hope*, 1706, in the British Museum. The first communication ever held with the Zoolas was, in my belief, by Mr. James S. King, master of the brig *Salisbury*, of Liverpool. This gentleman surveyed the harbour and coast of Natal, as also the mouth of the river St. Lucia, in the year 1823, and this survey was the first ever made by any English navigator of this part of the coast of Eastern Africa, although the credit of this has since been disputed by Capt. Owen, R.N.; for Lord James Townsend, Mr. King's friend and patron, on presenting the chart of Capt. King's survey for indemnity for his services, Lord James was informed that this chart was compiled from documents borrowed by the author from Capt. Owen. To whomsoever the precedence in making the survey in question might belong, it is but justice to the memory of a strictly honourable man, to state, from my own personal knowledge of Capt. James King, that I believe him incapable of committing so base an action as to produce a chart to Lord James Townsend founded on other than his own labours and research; and if any such statement as the above was made by Capt. Owen, he must either have known very little of the high and honourable sentiments that always guided Mr. King, or been led into error by some wrong information. I have myself but recently seen this chart and other documents, now in the possession of Mrs. King, that fully authenticate the survey of Natal having been made by her son, when in command of the *Salisbury*. On Capt. King's return to the Cape colony, after having made the survey above alluded to of the harbour and coast of Natal, he gave so favourable a report on the position and advantages offered by Natal for commercial enterprise, the forests abounding in elephants and the rivers with hippopotami, and that friendly disposition evinced by the natives towards Europeans, by which a very profitable traffic might be carried on for ivory, &c., that ultimately induced Mr. Farwell to turn his attention and enterprise towards Natal; and consequently he embarked, with several Europeans and Hottentots, for this place, lauded there in safety and

commenced their pursuits, having been received by King Shaka on the most friendly terms, and his free permission granted to trade with his subjects. On Capt. King's subsequent return to the Cape of Good Hope, in the brig *Mary*, the wreck of which is above described, it was rumoured abroad that Mr. Farwell and his party had not been heard of since their first landing in Natal, and it was conjectured they were murdered by the natives. Capt. King, actuated by the dictates of humanity, resolved while pursuing his course to the eastward to call at Natal, and ascertain for certainty the fate of his old friend Mr. Farwell and party, in the prosecution of which resulted the catastrophe above related in the wreck of his vessel, which calamity was only softened by the gratification he had on being informed by the Hottentot woman, Rachael, of the safety of his friend and party.

THE DODDINGTON ROCK.

One of the objects among the *desiderata* of seamen is that of getting rid of the numerous *vigias* which disfigure the charts. There they stand handed down by them from the days of old Dampier, who lost his ship on Ascension Island, to the great and almost constant discomfiture of the navigator; who, although he may have no faith in one half of them, is yet scarcely justified in disregarding them.

Among these is the Doddington Rock, off the Bird Islands, in Algoa Bay, a plan of which Islands has been just received at the Admiralty from the Acting Commander of the *Hydra*, and corrected with the names bestowed on its surrounding dangers by the crew of the illfated *Doddington*, appears in a reduced form with our present number. The plan of these Islands preserved by Dalrymple is complete as far as concerns the position of the Doddington Rock, for it not only points out this rock, on which the *Doddington* first struck, but also shows that those of her people and portions of her wreck which were saved, were washed into the small inlets on the south side of the largest Bird Island, on which a lighthouse now stands, as shown in the plan; and being engraved from a plan done by the survivors of her wreck must be considered as conclusive on that point. Therefore all possibility of the Doddington Rock being three or four miles out in a S.W. direction from the island, as laid down by Horsburgh, is at an end; and the Doddington *vigia* need no longer trouble the seaman, who may be edging off the coast to give it a respectable berth in passing.

As an account of the loss of this ship forms an interesting episode in the history of the Doddington Rock, not only on account of the real position of this danger, but also from the fearful loss of life which occurred, we have transferred it here from a work on Shipwrecks which appeared some years ago.

Wreck of the Doddington, East Indiaman, on a Rock in the Indian Ocean, 17th July, 1755.

The *Doddington*, Captain Samson, sailed from the Downs, 23rd April 1755, in company with the *Pelham*, the *Houghton*, the *Streatham*, and the *Edgecourt*, all in the service of the East India Company. In about seven days they cleared the Channel, during which time Captain Samson perceived that his ship sailed faster than any of the others. Unwilling to lose the benefit of this superiority, by keeping company with the rest, he stood on alone and soon lost sight of them. On the 20th of May, he made Bonavista, one of the Cape de Verde Islands, in lat. 16° N., and on the 21st got into Porto Pryor (Praya) Bay. It now appeared that he had either been mistaken in supposing his ship to outsail the rest of the fleet, or that he had lost time by the course he had steered, for the *Pelham* and the *Streatham*, he found, had reached the bay two days before him. The *Houghton* arrived soon afterwards, but the *Edgecourt* did not come in till the 26th.

On the 27th the *Doddington*, *Pelham*, *Streatham*, and *Houghton*, having taken in their water, proceeded on the voyage together, leaving the *Edgecourt* in the road. They continued in company until the 28th, when Captain Samson, thinking the course too far easterly, ordered the *Doddington* to be kept south, which again separated her from the rest of the fleet; and after a fine voyage of seven weeks, she made the land of the Cape of Good Hope.

A new departure was taken from Cape Needles, on the 5th* of July, just after doubling the Cape of Good Hope, and the vessel having steered eastward about twenty-four hours, between lat. 35° 30' and 36°, the captain ordered her to be kept E.N.E. In this course she continued until about a quarter before one in the morning of Thursday, 17th July, when she struck.

The officer, whose journal afforded the materials for this narrative, was then asleep in his cabin, but being suddenly awakened by the shock, he started up in the utmost consternation, and hastened on deck. Here all the terrors of his situation at once rushed on him. He saw the men dashed to and fro by the violence of the sea rolling over them, and the ship breaking to pieces at every stroke of the surge. Crawling over to the larboard of the quarter-deck, which lay highest out of the water, he there found the captain, who said very little more than that all must perish. In a few minutes a sea parted them and he saw him no more. He made a shift to get back to the quarter-deck, though very much bruised, and with the small bone of his left arm broken. All the rest of the ship was then under water, and shattered to pieces.

In this dreadful situation, expecting every moment to be swallowed up, he heard somebody cry out *land!* He looked eagerly about him, but notwithstanding he saw something, which he supposed was taken

* Probably the 15th.—Ed.

for land, he believed it was only the surge of the sea on the other side of the breakers. At the same moment the sea broke over him with great violence, and not only forced him from his hold, but stunned him by a violent blow on the eye.

Though from this time he lay insensible till after daylight, he still continued on the wreck; and when he recovered, he found himself fixed to a plank by a nail that had been forced into his shoulder. Besides the pain of his wounds and bruises, he now felt himself so benumbed with cold, that he could scarce move either hand or foot. He called out as loud as he could to the people on the rocks, but they were unable to give him any assistance, whence a considerable time elapsed before he was capable of disengaging himself and crawling ashore.

This shore was a barren uninhabited rock in lat. $33^{\circ} 44'$ S., and distant about 250 leagues east of the Cape of Good Hope. Here were now met Mr. Evan Jones, chief-mate; Mr. John Cottes, Mr. William Webb, and Mr. S. Powell, second, third, and fifth mates; Richard Topping, carpenter; Neil Bothwell, and Nathaniel Chisholm, quarter-masters; Daniel Ladova, captain's steward; Henry Sharp, the surgeon's servant; Thomas Arnold, a black, and John M'Dowal, servants to the captain; Robert Beaseley, John Ding, Gilbert Cain, Terence Mole, Jonas Rosenbury, John Glass, — Taylor, and Hendrick Scantz, seamen; John Yets, midshipman; John Lister, Ralph Smith, and Edward Dysoy, matrosses. These persons, being twenty-three in number, were the whole surviving of 270 souls that were on board when the ship struck.

Their first care was to search for some covering among the things thrown on the rocks from the ship, in which they succeeded beyond expectation. The next article of necessity which they felt the want of, was fire, which was not so easily supplied. Some of their number made an unsuccessful attempt to kindle two pieces of wood by rubbing them together; others went prying about the rocks, to pick up something that might serve for a flint and steel. After long search, they found a box containing two gun flints and a broken file. This was a joyful acquisition, though they were still destitute of anything that would kindle from a spark; and until a substitute for tinder could be procured, the flint and steel were useless. A farther search was therefore undertaken with inexpressible solicitude and anxiety, and at last a cask of gunpowder was discovered, which, however, to their great disappointment, proved to be wet; but on a more narrow inspection, a small quantity that had suffered no damage was found at the bottom of the cask. Some of this they bruised on a linen rag, and it served them very well for tinder.

A fire was soon made, around which the bruised and wounded collected; and the rest went in quest of other necessaries, without which the rock could afford them but a very short respite from destruction. In the afternoon, a box of wax candles, and a case of brandy, were brought in. Both were extremely acceptable, particularly the latter, of which each individual deemed it advisable to take a dram. Some others of the party returned soon after, with an account of their

having discovered a cask almost full of fresh water, which was of still greater consequence than the spirits. Mr. Jones brought in several pieces of salt pork; and others arrived, driving seven hogs before them, which had come on shore alive. Casks of beer, water, and flour, were also seen at a distance, but it was not then possible to get them over the rocks.

Night approaching rendered it necessary to provide some shelter; all hands were therefore employed in making a tent of some canvas cast ashore, but the quantity recovered was so small, that the tent could not hold them all. For fear of being overflowed, they were obliged to erect it on the highest part of the island, which was covered with the dung of a water-fowl, rather larger than a gannet, that much frequented it. Those unable to walk were placed under the tent, and a fire kindled near them. They had passed the day without food, and were now deprived of rest during the night, for, independent of being sunk a foot in the dung, the wind was so tempestuous, that it scattered about their fire, and before it could be again collected the rain put it out. In the morning, those who were able went again in search of what could be saved from the wreck; but, to their great mortification they found all the casks which were seen the preceding night, except one of flour and another of beer, staved against the rocks. These, however, they secured, and soon after the tide flowing up interrupted their operations. The company were, therefore, called together to eat their first meal, and some pork was broiled on the coals for dinner.

Sitting down, thus desolate and forlorn, to a repast which they were wont to share in the convivial cheerfulness which the consciousness of plenty inspired, struck them with such a sense of their present condition, that they burst into passionate exclamations, wringing their hands, and looking around with all the wildness of despair. Amidst such tumultuous emotions, our reflections hurry from one subject to another in quest of something from which comfort may be derived: and here one of the survivors, recollecting that the carpenter was among them, and that he might build a strong sloop, providing he could obtain tools and materials, suggested it as a ground of hope to the rest. Every one's attention was immediately directed towards the carpenter, who declared his belief that, providing tools and materials could be found, he should be able to build a sloop that would carry them all to a port of safety. At that time, indeed, they entertained no prospect of procuring either, nor of being able to victual such a vessel, had they even had it ready built. Yet, no sooner had they rested their deliverance one remove beyond total impossibility, than they seemed to think it neither improbable nor difficult; they began to eat without repining: that moment the boat engrossed their whole conversation, and they not only debated on her size and rigging, but to what port they should steer, whether to the Cape or De Lagoa.

As soon as the repast was finished, some went to mend the tent, and others in search of tools, but none were found that day.

On Saturday, the 19th, four butts of water were secured, one cask

of flour, one hogshead of brandy, and a small boat, which had been thrown up by the tide in a shattered condition. Still no tools were found except a scraper. But next day they had the good fortune to discover a hamper containing files, sail-needles, gimblets, and an azimuth compass card; they also found two quadrants, a carpenter's adze, a chisel, three sword blades, and a chest of treasure. As a prodigious surf had been rolling in all the day before, which it was reasonably expected would throw something up, the search was made early in the morning. At ten o'clock all assembled to prayers; and not going out again until after dinner, they then found most of the packets belonging to the king and the company, which they carefully dried and laid aside.

While searching about the beach they found the body of a lady, which they recognized to be that of Mrs. Collet, the wife of the second mate, who was himself then at a little distance. The mutual affection subsisting between this couple was of remarkable tenderness; and Mr. Jones, the first mate, immediately stepped to Mr. Collet, and contrived to take him to the other side of the rock, while the other two mates, the carpenter, and some others, dug a grave, where they deposited the body, reading the funeral service over it, from a French prayer-book, which had driven ashore from the wreck along with the deceased.

Having thus paid the last tribute to one of their unfortunate number, and concealed from Mr. Collet a sight which would have most sensibly, if not fatally affected him, some days afterwards they found means gradually to disclose what they had done, and to restore him the wedding-ring, which they had taken from her finger. He received it with great emotion, and in future spent many days in raising a monument over the grave, by piling up the squarest stones he could find, and fixing an elm plank on the top, inscribed with her name, her age, and the time of her death, and also some account of the fatal accident by which it was occasioned.

On Monday the 21st of July, more water and pork, as likewise some timber, plank, cordage, and canvas, were recovered. These the survivors joyfully secured for the projected boat, though yet in want of many implements indispensable for the carpenter proceeding with his work. He had just finished a saw, though he had neither hammer nor nails. It happened, however, that one of the seamen, Hendrick Scantz, a Swede, having picked up an old pair of bellows, brought them to his companions, telling them that he had been a smith by profession, and that with these bellows and a forge, which he hoped by his direction they should be able to build, he could furnish the carpenter with all necessary tools, nails included, as plenty of iron might be obtained by burning it out of the timber of the wreck coming ashore. This account was received with a transport of joy; the smith immediately set himself to mend the bellows; and the three following days were occupied in building a tent and forge, and in collecting the timber and plank for the carpenter's use, who also was employed in preparing the few tools already in his possession, that the boat might be begun as soon as possible.

On Thursday, the 24th of July, the carpenter, assisted by Chisholm the quartermaster, began to work on the keel of the vessel, which it was determined should be a sloop, thirty feet long and twelve feet wide. This day, also, the smith finished his forge, and laid in a quantity of fir for fuel. He and the carpenter thenceforward continued to work with indefatigable diligence, except when prevented by the weather. The smith having fortunately found the ring and nut of a bower anchor, which served him for an anvil, supplied chisels, axes, hammers, and nails, as they were required; and the carpenter used them with great dexterity and dispatch, until the 31st of the month, when he fell sick.

As the lives of the whole company were dependant on the carpenter's safety, they watched his recovery with the utmost impatience and anxiety; and, to their unspeakable joy, his convalescence was such on the 2nd of August, as to enable him to return to work.

Meantime the stores which had been saved from the wreck were so nearly exhausted, that it was necessary to restrict each man to an allowance of two ounces of bread a day, while water also fell short. It was resolved to keep the salt pork to victual the new vessel.

In this distressing state they had recourse to several expedients. In digging a well they were disappointed in their hopes of finding a spring; but they succeeded in knocking down some of the gannets that settled on the top of the rock; the flesh, however, was very rank, of a fishy taste and as black as a sloe. They also made a catamaran or float, on which they proposed to go out fishing with such hooks and lines as had come ashore. Likewise they killed some seals, but all who ate of them were sick.

When driven to great necessity, they killed a hog; they generally had success in fishing, and sometimes sent out two rafts at a time. On one occasion, Mr. Collet and Mr. Yets, the midshipman, were nearly driven out to sea, while engaged in this manner, where they would have infallibly perished. They had been out fishing, on the 20th of August, until about four in the afternoon, when they weighed and endeavoured to come in again; but the wind suddenly freshening from the westward, they found that instead of gaining ahead they drove off very fast. Though the people on shore saw their distress, they knew not how to assist them; however, they sent out another float with kellicks and ropes, which they hoped would enable them to ride till the wind moderated. The surf, however, was so great, that the raft upset three times, and the men were obliged to swim back. In the interval they saw their friends driving out to sea at a great rate, and were just giving them up to inevitable destruction, when the carpenter sent them word that he could make the little boat so tight that she should not take in water faster than one man could bale out. This inspired them with new hopes, and every one was ready to venture to the assistance of their comrades. In a quarter of an hour the carpenter dispatched the boat, and she soon overtook the float, when she received the two people. They now found that the water gained

very fast on them, notwithstanding their utmost efforts, and when the boat came in she was so full that in a few minutes more she must have sunk.

As they were afraid to venture any longer on a raft the carpenter again set to work on the boat, and put her into complete repair. Their success in fishing was very uncertain; sometimes they caught nothing; nor were their supplies on shore less precarious; the gannets would sometimes settle in amazing numbers like a cloud, and then totally disappear for several days together. This rendered them very desirous of finding some way to preserve the food they caught from putrefaction, that they might store up the surplus of a successful day to serve when neither gannets nor fish were to be caught. They made several abortive attempts to cure both fish and fowl by smoking, and then tried to make salt, which had like to have been fatal to them all. The smith had made a copper vessel for the experiment, and they immediately set to work, not knowing that their process in making salt would produce verdigrise from the copper, and that it was poison. Salt nevertheless was procured, but the substance rendering it poisonous happened to abound in such a degree as to render it intolerably offensive to the taste, and it was on that account thrown away. Those who ventured to swallow it, were seized with violent cholics, cold sweats, and retchings, which sufficiently convinced them of the danger they had escaped.

On Wednesday, the 3rd of September, these unfortunate people had been inhabitants of this desolate rock nearly seven weeks; during which time they had frequently seen a great smoke on the main land, which made them extremely anxious to send the boat thither to see what assistance could be obtained. Therefore Bothwell, Rosenbury, and Taylor, this day set out on a voyage of discovery; and at night the people ashore made a great fire on the highest part of the rock as a signal to them.

While waiting the return of the boat, they were all thrown into the utmost consternation by an accident which befel the carpenter. He unluckily cut his leg in such a manner, with an adze, that he was in great danger of bleeding to death, as they had no surgeon among them, nor anything fit for applying to the wound. At length the blood was stanch'd, though with much difficulty, and the wound healed, without the intervention of any bad symptom.

The weather having been fair for forty hours, the return of the boat was impatiently expected on Saturday the 6th of September. As nothing was seen of her against noon, the people became very uneasy; but just as they were sitting down to dinner they were agreeably surpris'd by two of their number, who came running over the rocks to announce her approach. All starting up, overjoyed at the intelligence, ran to see her come in, entertaining great hopes that the excursion had succeeded. But they soon distinguished that she was rowed by only one man, who plied both oars, and thence concluded that the other two were either lost or detained. Presently another

was seen rising from the bottom of the boat, where it was supposed he had lain down for a short interval of rest, and then the boat advanced somewhat quicker, though yet slowly.

Dinner was now entirely forgot, and after they had waited an hour on the beach with the utmost impatience, the boat came in. The two men were Rosenbury and Taylor, who, the moment of landing, threw themselves on their knees, uttering short but earnest ejaculations of thanks to God, for having once more brought them safe to this place, which, barren and desolate as it was, they considered an asylum from a more distressing situation. Having exerted their last effort to bring the boat to the shore, their strength at once forsook them, and they were unable to rise from the ground without assistance.

As soon as they were conducted over to the tent, every one was busy to procure them refreshment, for they found the boat quite empty both of provisions and water. Some fish was hastily dressed, and their comrades, observing them quite exhausted by labour and watching, left them without asking any questions when they had ate their meal, and they immediately fell asleep. The behaviour of this unfortunate company to their poor messmates, was an uncommon instance of kindness and self-denial. The impatience of their curiosity must have increased in proportion as they were interested in the account by which it was to be gratified. Yet even this curiosity, where the very preservation of life was concerned, they had the consideration and fortitude to repress, rather than delay the refreshment of the others to satisfy it.

When the two adventurers awoke, their account was of the following purport:—

About three o'clock on the day of their departure, they got round a point about six leagues east of the rock, which, as they approached, had the appearance of a double point. This encouraged them to hope that between the two points they should find a harbour; but here they were disappointed, as a high surf ran all along the coast. However, about five o'clock, having seen only one of the natives, they ventured to pull in for the shore; but the moment they got into the surf, the boat overset, by which accident Bothwell was unhappily drowned. They themselves, who reached the shore in a feeble and exhausted condition, were left destitute of every supply except a small keg of brandy. As soon as their strength was a little renewed, they crawled along the shore in search of the boat, having no other chance of shelter from the wild beasts, which might be expected to come aboard in the night. After some search they found her, but were too weak to get her up; and, darkness coming on, they were obliged to lie down on the sand, without any other covering than the branches of a tree, in which condition they passed the night. As morning dawned they again went in quest of the boat, which the surf had driven from the place where they left her. Walking along the coast, they saw a man, who, on their advancing towards him, ran away into very thick woods near the beach. Proceeding onwards, they in a short time discovered the body of their comrade, Bothwell, which had been dragged up the

sand a considerable distance from the water, and was torn to pieces by some wild beast. This terrified them exceedingly, and, having found the boat, the dread of passing another night on shore was so great, that they resolved immediately to return.

The two adventurers were opposed in this attempt by a fresh gale at west, and before they could put back, the boat overset a second time, and drove with them along the shore. After much struggling and swimming, they once more got safe on the land, though fainting with hunger and fatigue, as they had been fasting ever since three o'clock of the preceding day. However, they happened to meet with a fruit resembling an apple, which they eagerly gathered and ate, without knowing either its name or its quality. Fortunately it did them no harm, and being somewhat refreshed by this repast, they made shift to haul the boat on shore. Turning it upside down they crept under it to sleep, well sheltered from the sun, and secure against wild beasts.

Those who know the irresistible power of sleep, after long watching and excessive labour, will not conclude that their first slumber was short because their situation was incommodious or exposed to danger. They wakened, however, before the next morning, and peeping out from under the edge of the boat, could discern the feet of several creatures, which, by the claws, they supposed to be tigers, pass by them to and again. This was a sufficient inducement to remain in their resting place until morning, when once more looking out they saw the feet of a man. On this discovery, they crept from below the boat, to the great amazement of a poor savage, and two other men and a boy who were at some distance. When they had all collected, and were a little recovered from their surprise, they made signs to the sailors to go away, which they endeavoured to do, though able to move but very slowly. Before having got far from the boat a considerable number of the natives ran down upon them with their lances. Rosenbury, as he went along, had picked up the mast of the boat and a pistol, which had been washed ashore. Thus armed, when the Indians came down upon him, and besides being unable to run, he imprudently turned about and exerting all his strength, advanced towards them in a threatening manner supposing they would have been panic struck and retreated into the woods. It happened, however, that he was mistaken, for instead of running away they surrounded him, and began to whet their lances. Taylor thought it was now time to try what could be done by supplication, and, throwing himself on his knees, cried in a piteous tone for mercy; while Rosenbury took refuge in the water. The savages immediately came up to Taylor, and began to strip him. He suffered them quietly to take his shoes and his shirt, but when they attacked his trousers he made some resistance, and by his gestures entreated that they would not leave him quite naked, on which they thought fit to desist. They then made signs for Rosenbury to come to them, who was all this time swimming about in the sea, but he refused signifying that they would kill him. They then pointed to Taylor, intimating that he had not been killed; on which Rosenbury advanced, and having first thrown them his pistol and all

his clothes but his shirt, ventured to put himself in their hands. When he came up they offered him no violence, only held the boat's mast and the pistols to him by way of deriding his attempt to frighten them. They seemed to be very much pleased with the clothes, which they divided among themselves as far as they would go. Then beginning to rife the boat, they took away all the rope they could find, and the hook by which the rudder hung to the stern-post; and next began to knock the stern to pieces, for the iron which they saw about it. Except absolute destruction of the unfortunate mariners, this was the greatest mishap they could sustain; and, rough as they were, they burst into tears, entreating the savages, with such agony of distress, to desist from injuring their boat, that they suffered it to remain as they found it. Encouraged by such an appearance of placability and kindness, and urged by hunger, they solicited by signs something to eat. This request was also granted; and the natives, having given them some roots, again made signs for their departure; on which they once more got into the boat, after launching it; but the wind blowing strong from the west, they could not put off. The natives, perceiving their willingness and also their inability to comply with their desire, covered them with the boat, to sleep under, and left them. The following morning, the weather proving fine and the wind easterly, they launched the boat a third time, and returned back to the rock.

(To be Concluded in our next.)

SAILORS' HOMES.

The last year closed and the present, which is scarcely a month old, has opened most auspiciously for these no less important than excellent Institutions.

On the 21st and the 31st of December, last Homes were opened at Cork and Devonport; and on the 1st and 4th of January, at Dover and Bristol; thus making four Homes in fourteen days.

As we can only appreciate things rightly by comparison, the force of this statement will be better recognized when it is remembered that from 1835 to 1849, a period of *fourteen years* and not *days*, two Homes only were established in this country; since when thirteen additional ones have been erected, at Dublin, Liverpool, Portsmouth, Aberdeen, Dundee, Sunderland, Stornoway, Falmouth, Belfast, Cork, Devonport, Dover, and Bristol; and seven others in progress, at Plymouth, Glasgow, Greenock, Cardiff, Poplar, Yarmouth, and Folkestone, making twenty in all.

It has been often observed with respect to our national character that while we are slow in adopting changes, a peculiarity dictated no doubt by a wise caution, we are, on the other hand, equally rapid in

maturing them, when conviction has once established the necessity for them. The facts above recorded add another instance to the truthfulness of this remark.

The country may now be said to be thoroughly alive to the importance of these Homes. As the knowledge of their nature, and the experiences resulting from the working of the few already established, have fairly removed the obstacles which had originally to be contended with from ignorance and prejudice, we have every reason to feel confident in the prediction we make, that the good cause which we have so long and so steadfastly advocated will now progress rapidly, particularly as the *esprit de corps*, if we may be allowed the expression, of those ports which have not yet possessed themselves of these valuable establishments, cannot fail to operate favourably in emulating the examples set them in this respect.

With these few preliminary remarks we shall proceed to give a sketch of the four Homes recently opened.

The Cork Sailors' Home.

Encouraged by the success of the Dublin Establishment, supported by the promoter of that Institution, and matured by the exertions of Capt. Thomas Stewart, R.N., and others; the former having been in constant correspondence, during the period of its formation, with Capt. Hall; this Home was opened on the 21st of December last. It is situated in Deane Street, off Merchant's Quay, an admirable locality. The present accommodation is, we understand, sufficient for thirty six persons, and is capable of extension, if necessary, by taking an adjoining house. The internal arrangements are of a most satisfactory nature, consisting of a dining room, a smoking room, kitchen, library, bar for sale of refreshments, schoolroom, dormitories, and washing room. The bedsteads are iron, and are provided with palliasses, mattress, and three comfortable blankets, each. In fact the comfort of the occupants is consulted in every way; and to the seaman who has any feeling of self-respect, such a lodging will appear the next best thing to a good harbour on a lee shore and a whole gale blowing. The charge for board, lodging, and medical attendance, is 10s. 6d. per week.

Among the principal subscribers to the Home we find the names of the Harbour Commissioners, £100; the Royal Exchange Assurance Corporation, £25; the Duke of Devonshire, the Earl of Eglinton, the Duke of Manchester, the Marquis of Thomond, Capt. Hall, Capt. Farquhar, A. Guinness, Esq., Messrs. Hardy and Sons, Messrs. Harley, &c., &c.

The Devonport Sailors' Home.

This Institution was opened, with much ceremony, on the 31st of December, last.

Capt. Hall, encouraged by the great and unparalleled success which had attended his labours in originating the Home at Portsmouth, the benefits of which have been so largely participated in by the seamen

of the naval service, visited Devonport, in August, 1851, with the view of securing to the naval seamen of that port similar advantages.

At the preliminary meeting, held in consequence, on the 21st August, in the Royal Naval Annuitants' Society's Rooms, and over which Admiral Thomas presided, it was resolved, and carried unanimously, "That the meeting, having heard the explanations furnished by Capt. Hall, was of opinion that it was highly desirable to establish a Sailors' Home at Devonport." It was further resolved to request the Earl of Mount Edgcumbe to become Patron; Admiral Sir John Ommanney, President; Admiral Thomas Fanshawe, the Mayor of Devonport, Capt. Rich, R.N., and James St. Aubyn, Esq., Vice-Presidents; Lieut. Lampter, R.N., kindly tendered his services as Honorary Secretary; and Capt. Hillyar, R.N., as Treasurer.

At another meeting, held on the 23rd of the same month, (August,) Capt. Hall explained at great length the working details of the Establishments at Dublin, Portsmouth, and other places, and advised with the Committee as to the course to be adopted. Numerous donations and subscriptions were announced. At the conclusion of the meeting, it being understood that Capt. Hall would leave Devonport immediately, for Falmouth, a warm vote of thanks was unanimously agreed to, and given to him, "For the great services he had rendered to the naval service of this country by his laborious and successful efforts in establishing these invaluable Homes."

The building which has been fitted up as the temporary Sailors' Home, is situated in St. Aubyn Street. On the basement story are an extensive store-room; a large smoking room; a kitchen, with an immense gas stove capable of cooking for 170 men; scullery; and other offices. On the ground floor is a large room, neatly fitted up with substantial furniture, appropriated as the sitting room in common for the inmates of the Establishment. In this room there is also a small but well selected library, presented to the Institution by the Lords Commissioners of the Admiralty; along the west side of the room is a large reading table, lighted with gas. Adjoining the sitting room, or library, is the committee room and steward's room; beyond, is a large dining room, fitted to accommodate about 100 persons; and leading from this is the entrance to the Northumberland dormitory, so called as a mark of respect to the noble Duke who presented the Home with the munificent donation of £200. This dormitory contains eleven cabins; each is fitted with an iron bedstead, a chair, a shelf for a bible and prayer-book, and is divided from the others by a partition, so that each man has a sleeping-place to himself.

Up stairs are two other large sleeping places, one called the Nelson dormitory, and the other the Collingwood dormitory. The cabins in these wards are, however, not completed, except three fitted up at the expense of Admiral Fanshawe; another, by Capt. Ramsey; and one or two others. The dormitories are supplied with wash-places. The estimated cost of each cabin, with the furniture complete, is about

£5 16s. The charge for board, lodging, and washing, to each inmate, is 12s. per week.

The principal subscribers to the Home are the following: the Duke of Northumberland, £200; the Earl of Mount Edgecumbe, £100; Sir Joseph Copley, Bart. and Charles Dixon, of Stanstead Hall, Esq., £50 each; the Marquis of Exeter, Earl Spenser, Vice-Admiral Thomas, and Rear-Admiral Hope, £25 each; Hon. Capt. Best, £21; Earls Fortescue, Howe, and St. Germans; Admirals Bowles, Sir T. J. Cochrane, Fanshawe, and Gage; Sir J. G. Bullen, M.P., Sir R. Lopes, Bart., T. H. Bulteel, W. H. Carew, M.P., Charles Mare, and C. Tayleur, Esqrs.; Capt. Furneaux, R.N., and Mr. Thomas Stevens, shipowner.

The Dover Sailors' Home and Reading Room.

This little establishment, (one of the first originated by the Sailors' Home Institution,) which is specially intended for the reception of shipwrecked sailors who may be landed at this port, and which is available as a receiving house for the Dover Royal Humane and Shipwreck Society, and as an adult school for those seafaring people who are unable to read, was opened on the 1st ultimo. A reading room is attached to the house, which is open, gratuitously, every day from 9h. A.M. to 10h. P.M., to sailors of every class upon entering their names upon the books of the Society and promising to abide by the regulations.* The room, besides being supplied with such periodicals as the *Shipping Gazette*, *Illustrated London News*, *United Service Gazette*, and *Nautical Magazine*, has a library of nearly 200 volumes of narratives, histories, voyages, travels, and religious works.

Among the list of subscribers we find the names of the Ladies Boyle, Lady C. Turner, Lady Ford, Lady Lambert, Lady Synger, Mrs. Hyde, the Institution for the Establishment of Sailors' Homes, &c.

The Bristol Sailors' Home.

From the report read at the opening of this Home, on the 4th of January last, we gather the following facts:—

The want of a Sailors' Home at Bristol having been long felt, a meeting of merchants, shipowners, and others, favourable to the establishment, was held on the 16th September, 1851, in consequence of Capt. Hall's visit; when that gentleman having forcibly pointed out the benefits and advantages which had thereby resulted to society, and to the seamen themselves, it was unanimously resolved that such an Institution should be established. Circulars were immediately issued, and an active canvas, under the superintendance of Mr. Ford, commenced for subscriptions and donations. In February, 1852, the purchase of premises in Queen Square was effected for £1,300, and for £600 more, a building containing dining room, reading room, dormi-

* Within one fortnight of the opening, ninety-five seafaring people entered their names, being sixty more than was expected in so short a time.

tories, lavatory, infirmary, kitchen, &c., and capable of affording excellent accommodation to fifty-two scamen, was completed. In addition to the sums named, for the purchase and alterations, about £300 was expended in the necessary furniture: bedding, china, linen, &c. Board, lodging, and a fair allowance of washing, is provided for seamen at 13s. per week, or 2s. per day; for boys at 10s. per week, or 1s. 6d. per day, including beer. Each man has a sleeping cabin, with lock and key, to himself. Four meals a day are provided; provisions of the best description given, and every attention paid to the comfort and welfare of the boarders.

The Society of Merchants subscribed to the Institution, £100; Peter Maze, Esq., £100; and the following gentlemen £50 each, viz.: Messrs. Miles and Kingston; Gibbs, Bright, and Co.; Miles, Miles, Savile, and Miles; &c.

On the occasion of the opening, Mr. Aitken, in a speech of considerable eloquence, observed with much truth, "There were few men who had so strong a claim on British benevolence as the sailor, and all England would say of him, as was often said of all England, 'with all thy faults I love thee still.' The failings of the class were those of our common nature under strong temptation. Let them send a landsman on board ship, he was ignorant and helpless and very unsteady; and if a sailor came on shore was it very surprising that he also should exhibit symptoms of moral unsteadiness? as soon as he planted himself on land he became the victim of the designing and the vilest of our race; avarice, deceit, and villainy, pursued him, till the poor prodigal, after a few days of riotous living, fled in disgust from the voice and face of man to take refuge again among the howling storms of the ocean."

We cannot do better, in concluding this encouraging account of our Sailors' Homes, than give the following diary of their progress, taken from the correspondence of the *Sailors' Homes' Institution* which was handed in at the meeting just alluded to by Mr. Montague Gore, the distinguished friend and patron of these Homes.

Sept. 20.—*Greenock Sailors' Home*.—Expect to open shortly; amount already raised considerably over £1,700.

Oct. 9.—*Dover Reading Room and Sailors' Home*—The ladies of this place, delighted at the idea of such an Institution, will lend it their best assistance.

Oct. 15.—*Bristol*.—Have collected about £1,700 in donations and £160 in subscriptions and hope to make it up £2,500 and £200.

Nov. 5.—*North Shields*.—A very important meeting of merchants and shipowners held; £1,000 subscribed by gentlemen present; Duke of Northumberland has promised a handsome donation.

Nov. 19.—*Dublin Sailors' Home*.—Doing a large amount of business. Superintendent reports, under this date, that he received nine men from a barque, six of whom came and gave him their money amounting to nearly £40. Those who depended upon their own pockets lost nearly all they received.

Nov. 23.—*Dundee Sailors' Home*.—Doing a great deal of good, for

it frequently happens that when the sailors leave they find at the railroad some of their shipmates, who had gone to some lodging house, all their money gone, and their chests arrested for what they are said to be in debt; whereas those from the Home have their money safe, having expended only a few shillings, and all their linen washed and repaired.

Nov. 27.—*Poplar Sailors' Home*.—£105 subscribed towards this Home by Messrs. Wigram and Sons, and Somes Brothers, of Canal Dock Yard, Blackwall, the offer of a house rent free.

Dec. 7.—*Sunderland Sailors' Home*.—Had a large amount of seamen in the Home last month, sometimes more than could be put up.

Dec. 17.—*Belfast Sailors' Home*.—Home opened. Board, lodging, and medical attendance, provided for seamen at 1s. 6d. per day, or 10s. per week; apprentices and boys, 1s. 3d. and 8s.

Dec 19.—*Falmouth Sailors' Home*.—Number of inmates received since opening of the Home, in May last, 600; of these 150 have received medical aid.

Dec. 20.—*Glasgow Sailors' Home*.—Committee have purchased a piece of ground, of above 1,300 square yards, in one of the finest situations of the city.

Dec. 20.—*Plymouth Sailors' Home*.—Very liberal subscriptions have been made and a commodious Home opened.

Dec. 21.—*Cork Sailors' Home*.—Home opened.

Dec. 24.—*Folkestone Reading Room and Sailors' Home*.—The first meeting held for carrying out a Home here: most satisfactory in its results.

Dec. 31.—*Deronport Sailors' Home*.—Home opened.

1853.—Jan. 1.—*Dover Reading Room and Sailors' Home*.—Reading Room and Home opened.

Jan. 4.—*Bristol Sailors' Home*.—Home opened.

Jan. 17.—*Dover Reading Room and Sailors' Home*.—95 seafaring people have entered their names as members of the Reading Room: this is 60 more than was expected in so short a time.

Jan. 17.—*Portsmouth Sailors' Home*.—Quite full every night, and want very many more dormitories, as, after the beds were all full, had 250 men on the floors a few nights since.

APPLICATIONS TO BOARD OF ADMIRALTY FOR REWARDS FOR IMPROVEMENTS
IN CHRONOMETERS.

[From a paper laid on the table of the House of Commons.]

61, Strand, 13 December, 1852.

SIR,—I beg leave to acquaint you, for the information of the Lords Commissioners of the Admiralty, that a motion has been made in the House of Commons for copies of the applications which have been made to the Board

of Admiralty since 1849, for reward on account of improvements in chronometers, and also for a list of the chronometers which have been tried at Greenwich, in their order of merit, in continuation of the Parliamentary Papers of 1849 on this subject. I should never have thought, myself, of asking for, or expecting any reward for my inventions, except that of an increased sale of the articles to which they are applied; but it is evident from the terms of this motion, that the same chronometer-maker on whose behalf the Parliamentary Paper of 1849 was moved for, has been making some further application to be rewarded for an invention which he has frequently represented as the only one which successfully effects the important object of compensating chronometer-balances for extreme and mean temperatures; and if applications of this kind are to be made, and then published at the expense of the nation as advertisements of those who make them, to the obvious disadvantage of other persons in the same trade, I am compelled to submit to their Lordships my claims with reference to this subject, on which I should otherwise have remained silent.

It appears that in 1835 Mr Eiffe privately communicated to the Astronomer Royal an invention of his, for effecting this "secondary compensation" for extreme and mean temperature, and it was shortly afterwards tried at Greenwich, and as it appeared to be successful, and was the first known invention for doing what had never been done, a reward of £300 was given to Mr Eiffe in the year 1840. But it appeared that this was only another of the numerous instances in which several persons are, independently of each other, making inventions for the same purpose, not because any one of them has really made a discovery in advance of the existing state of science, but because science has arrived at that point at which such inventions are sure to arise; for before Mr Eiffe's invention had been published, Mr Molyneux had actually obtained a patent for an invention which the Astronomer Royal pronounced to be identical with Eiffe's, and I had also been for some years making experiments with the same object; and in 1842 I patented an invention for effecting it, in a manner quite distinct from Mr Eiffe's, and I have applied it to all my best chronometers ever since; and notwithstanding this addition, I reduced the price from £75, which had long been the established price of the best chronometers, to £42.

Some years after this Mr Loseby drew the attention of the Astronomer Royal to an invention of his, which he represented to be very superior to anything else which had been contrived for effecting the secondary compensation. The correspondence on this subject is contained in the Parliamentary Paper of 1849 before referred to.

In the same year (1849), these inventions having then become sufficiently common, Mr Airy began the system of exposing the chronometers sent to Greenwich for public trial to greater extremes of heat and cold than had been previously practised, and the Greenwich lists for the last four years exhibit the weekly results of these trials, and therefore furnish the materials for estimating the comparative value of the different contrivances for secondary compensation; *i. e.*, for preventing chronometers from gaining at mean temperatures when they are adjusted by means of the ordinary or primary compensation, to keep the same rate for extreme temperatures, or from losing at both extremes, such as 20° and 100°, if the primary compensation is adjusted for two intermediate ones, such as 32° and 80°.

But although the Greenwich rates furnish the materials for forming this estimate, they do not of themselves exhibit it. I will therefore shortly explain the method of arriving at the true result with regard to this particular correction, for which all the inventions in question are designed.

The trials are continued for a period of about 24 weeks, from January to

July in every year, and the results are finally exhibited in one page, in the order of temperature ; consequently, if we take the average weekly rate of each chronometer for the first eight weeks, as shown in that page, we shall have a very good indication of its rate of going in extreme cold, with all the other accidental errors due to causes independent of temperature, eliminated as far as possible, by thus taking the average of a tolerably long period of temperature of one kind.

In like manner the average rate for the eight middle weeks will show the effect of the compensation for mean temperature, and the average of the eight last weeks will show the effects of the compensation for extreme heat, as compared with both the cold and the mean temperature. The results are as follows :—

In the year 1849 the difference between the average weekly rates of Mr Loseby's chronometers at mean temperature and cold was 4·4 seconds, and between mean and hot the difference was 5·9 seconds ; but in a chronometer sent by Mr Poole in the same year, these differences were only 3·2 and 2·2 seconds ; and in Mr Eiffe's they were still less, being 1·4 and 2·5 respectively.

In 1851 Mr Loseby's differences of weekly rate in the three periods were 1·5 and 3·4 seconds ; while Mr Lawson's, with yet another different kind of compensation, which Mr Loseby pronounced incapable of succeeding at all,* varied only 1·3 and 2·0 seconds between mean and cold and mean and hot temperatures.

In the year 1852 Mr Loseby's mean compensation did approach very nearly to that for extreme heat, the average weekly rates of those two periods differing only by 0·2 seconds ; the difference between his mean temperature weeks and the cold ones was 2·5 seconds. Mr Eiffe's differences were respectively 6·7 and 1·2 seconds ; but those of my chronometer, "Dent 2,240," were only 1·0 and 1·2 seconds, and it is to be observed that in my case this 1·2 seconds is also the extreme difference between any two of the three periods, there being only a difference of 0·2 seconds between the rates of my chronometer in heat and cold ; whereas that extreme difference in Mr Loseby's chronometer is 2·3 seconds.

Lastly, in the year 1850, the differences between Mr Loseby's weekly rates for the mean and cold and the mean and hot periods respectively, were 2·8 and 2·2 seconds ; while mine, "Dent 2,173," were only 1·1 and 0·4 seconds ; the differences between the hot and cold periods were, as it happens, exactly the same in his chronometer and in mine.

I venture to say, that this analysis of the Greenwich rates for the whole of the four years during which the severe trials have been continued, shows very clearly,—First, that Mr Loseby's invention for secondary compensation is by no means the best, inasmuch as there is not a single year in which his chronometers have not been beaten by those of other makers, in this particular point for which his invention is specially designed.

Secondly. It appears that Mr Loseby has been beaten in this respect, not only by Mr Eiffe, Mr Poole, and Mr Lawson, each once, but by me twice.

Thirdly. That neither he nor any one of those three gentlemen who have beaten him have ever come up, even to the worst of the two rates of my two chronometers of the years 1850 and 1852, much less to the best of them, in which the extreme difference between the average weekly rates of any two of the three periods of cold, mean, and hot temperatures, is less than half of what any other chronometer maker has yet accomplished.

Fourthly. This investigation shows, that although Mr Loseby has, in three years out of the four, sent in a chronometer which, upon the whole, taking into

* See his Pamphlet, Effingham Wilson, Royal Exchange.

account the casual errors incidental to all chronometers, not arising from temperature, but from defects of workmanship and other uncertain causes, has gone a little better than any other in that year, nevertheless that superiority cannot possibly have arisen from the invention for which he claims to be rewarded, but must have arisen from the care which he has personally bestowed upon the getting up of that one chronometer in each year.

When I was much younger, and had more time at my disposal, and, I may add, when it was of more consequence to me to obtain personal distinction than it is now, I prepared, with my own hands, a chronometer for trial in the year 1829, the published rate of which has never been equalled before or since; but that chronometer contained no new invention or scientific improvement, and its excellence was only due to the extreme care which I personally bestowed upon the getting up and the adjustments of that one instrument, which is a very different thing from making a distinct invention, such as that for secondary compensation, which must materially improve any chronometer to which it is applied; and probably it was for that reason that the old practice of giving premiums for the two or three best chronometers sent to Greenwich every year was abandoned, and in my opinion very properly; for one chronometer which I used to make in 1829, I have now to make 50; and it is of infinitely more consequence to the naval profession that every one of those 50 should be such as can be safely relied on, than that I should spend my time in making one show or prize chronometer in a year, which would be no guarantee of the value of those which I keep for every day's sale to anybody who comes for them.

In short, for testing the value of any particular invention, such trials as those which take place at Greenwich may be no doubt extremely valuable, but as an indication to the public of the quality of the instruments which they may expect to find for ordinary sale at the shop of every particular maker, those trials are obviously of no value whatever. I submit to their Lordships that the Greenwich trials have amply proved the value, and I venture to say the superiority, of my invention for effecting that which Mr Loseby asserts that nobody had done successfully except himself. The general value of the chronometers which I keep for ordinary sale, I am quite content to leave to the judgment of their Lordships, and other naval authorities by whom they have long been sufficiently tried. And with reference to that, I hope that the fact communicated to me, respecting the performance of the chronometers in the late Arctic expedition under Captain Austin, will appear in the papers now called for, viz., that one of Mr Loseby's chronometers, as well as those of two other makers stopped, in consequence of exposure to extreme cold, while mine did not.

In conclusion, and merely as a matter of form, I hereby beg to apply for any reward which it may be thought proper to give for improvements made in chronometers, and with many apologies for troubling their Lordships with so long a statement, which I should certainly not have done, but for the unusual course taken by one of my competitors in business,

I have, &c,

(Signed) ED. J. DENT.

To the Secretary of the Admiralty.

P.S.—Permit me most respectfully to request, that you will be pleased to lay my small treatise on Chronometers before their Lordships, as it will show, at page 2, that I was the first person to draw public attention to the secondary compensation, and which was published by me in the *Nautical Magazine* so long back as 1833.

MAGNETIC VARIATION.

Table showing the mean monthly westerly declination, or westerly variation of the magnet, and the mean monthly dip, at the Royal Observatory, Greenwich, in the year 1846.

	Variation, W.	Dip.
January	22° 50' 56"	68° 58' 1"
February	22 50 17	68 55·4
March	22 49 21	68 57·0
April	22 51 51	68 56·4
May	22 49 32	68 57·9
June	22 51 48	68 57·9
July	22 49 24	69 0·4
August	22 49 33	68 59·9
September	22 48 55	68 58·5
October	22 47 55	68 59·5
November	22 47 38	68 59·1
December	22 47 51	68 57·0

The mean variation has been found by taking the mean of two-hourly observations. The mean dip by taking the mean of morning and afternoon observations, made twice a week.

G. B. AIRY.
Astronomer Royal.

DEEP SEA SOUNDINGS.

The following extracts from a letter received from Captain H. M. Denham, dated H.M.S. *Hera'd*, 29th of November, 1852, Table Bay, Cape of Good Hope, give the results of some interesting experiments on the depth and temperature of the sea in the South Atlantic Ocean. The position, it will be seen, is in about the parallel of the mouth of the river Plata, and about half way between the American continent and Tristan d'Acunha. We have recorded similar experiments of Captain Sir James Ross, Sir Edward Belcher, and Capt. E. Barnett. This, however, is far beyond any of theirs.

The following are references to our volumes for accounts of deep soundings :
1840—pp. 347, 507, Sir James Ross, 2,426, 27° 4' S., 17° 5' W.; 2,677, 33° 3' S., 9° 1' E.

1843—p. 796, Sir E. Belcher, 3,065, 0° 4' N., 10° 6' W.; 1,620, 4° 2' S., 9 6 W.

1849—p. 121, Captain Barnett, 41° 2' N., 44° 3' W., 3,700 attempted, broke for want of more by effects of current.

1850—p. 699, American soundings, East of Bermuda.

1851—p. 275, Lieut. Gouldsbrough, U.S.N., 3,100, 28° 3' S., 29° 3' W.; p. 433, Commander J. Adams, from a New York paper, but unauthenticated by any other document we have seen, deepest being 5,500 fathoms, in 32° 1' N., 44° 8' W.

H.M.S. *Hera'd*, as follows, (7706 fathoms,) obtained in lat. 36° 49' S., long. 37° 6' W., on her exploring voyage to the South Seas, under the command of Captain H. M. Denham, F.R.S. 30th October, 1852.

A TABLE showing the Rate at which the 9lb Plummets (11.5 by 1.7 inches) descended with a Line of 1-10th of an inch diameter (and weighing, when dry, 1lb per 100 fathoms) through a depth of nearly 9 English miles of Ocean Water, at which depth it apparently reached the bottom.

Successive Depths.	Notation.			Interval Ψ 100 Fathoms.			Interval Ψ 1000 Fathoms.			Successive Depths.	Notation.			Interval Ψ 100 Fathoms.			Interval Ψ 1000 Fathoms.					
	h.	m.	s.	h.	m.	s.	h.	m.	s.		h.	m.	s.	h.	m.	s.	h.	m.	s.			
Immersion	8	30	45							4100	Fms.	11	49	10		9	41					
100 Fms.		32	15		1	30				4200	"		57	45		8	35					
200 "		34	20		2	5				4300	"	12	6	10		8	25					
300 "		36	45		2	25				4400	"		14	45		8	5					
400 "		39	15		2	30				4500	"		21	40		7	25					
500 "		42	4		2	49				4600	"		31	5		9	25					
600 "		45	0		2	56				4700	"		40	10		9	5					
700 "		48	0		3	0				4800	"		48	35		8	25					
800 "		51	5		3	5				4900	"		57	10		8	35					
900 "		54	20		3	15				5000	"	1	6	35		9	25		1	27	6	
1000 "		58	0		3	40	0	27	15	5100	"		17	55		11	20					
1100 "	9	1	50		3	50				5200	"		27	0		9	5					
1200 "		5	45		3	55				5300	"		36	25		9	25					
1300 "		9	30		3	45				5400	"		45	55		9	3					
1400 "		12	45		3	15				5500	"		56	15		10	20					
1500 "		16	40		3	55				5600	"		6	55		10	10					
1600 "		20	40		4	0				5700	"		19	40		12	45					
1700 "		24	50		4	10				5800	"		30	15		10	35					
1800 "		29	0		4	10				5900	"		40	55		10	46					
1900 "		33	15		4	15				6000	"		52	0		11	5		1	45	25	
2000 "		37	40		4	25	0	39	40	6100	"	3	5	10		11	10					
2100 "		42	0		4	20				6200	"		14	40		9	30					
2200 "		46	30		4	30				6300	"		25	20		10	40					
2300 "		51	0		4	30				6400	"		37	55		12	35					
2400 "		55	30		4	30				6500	"		48	0		10	5					
2500 "	10	0	5		4	35				6600	"		57	50		9	50					
2600 "		4	45		4	40				6700	"	4	8	0		10	10					
2700 "		9	45		5	0				6800	"		19	15		11	15					
2800 "		14	50		5	5				6900	"		30	45		11	30					
2900 "		20	10		5	20				7000	"		41	15		10	30		1	49	15	
3000 "		25	50		5	40	0	48	10	7100	"		52	15		11	0					
3100 "		30	15		4	25				7200	"	5	1	50		9	35					
3200 "		36	15		6	0				7300	"		11	40		9	50					
3300 "		43	10		6	55				7400	"		24	10		12	30					
3400 "		50	40		7	30				7500	"		34	20		10	10					
3500 "		58	45		8	5				7600	"		44	22		10	2					
3600 "	11	6	50		8	5				7706	"		55	30		11	8		1	14	15	
3700 "		14	45		7	45				Total fthms.												
3800 "		22	30		7	45				7706 =												
3900 "		31	10		8	40				15412 yds												
4000 "		39	29		8	19	1	13	39	= 8 3/4 English miles												
										Total Interval						9	24	45				

NOTE.—This line could sustain 72lbs in air, at a suspension of one fathom; but as the 7706 fathoms weighed 77lbs (in addition to the plummet) became weighted one half more by saturation, (equal to 115lbs,) it could not bring up the plummet again to exhibit to us the nature of the bottom; it broke, whilst carefully reeling it in, at 140 fathoms below the water line. H. M. DENHAM, Captain, R.N.

The following is the extract of the letter referred to:—

"We reached the lat. of $36^{\circ} 49' S.$, and long. $37^{\circ} 6' W.$, on the 30th of October, when the fineness of the weather permitted me to employ the 15,000 fathoms of sounding line which Commodore M'Keever, of the United States Navy, had very generously presented to me, and we had the gratification of obtaining the (I believe) unprecedented sounding of 7,706 fathoms, equal to $8\frac{1}{2}$ English miles, the particulars of which I have tabulated as enclosed.

"Such was the apparent increase of the magnetic variation as we proceeded eastward, on the parallel of $37^{\circ} S.$, that the effecting a landing on Tristan d'Acunha to test the actual amount, free from any local disturbances of the ship, appeared to me an essential step. Availing myself, therefore, of the tranquil state of the weather, on the day of sighting it, (12th November,) I effected a landing on the island, with the necessary instruments for settling the longitude, as well as the variation of the compass, and the shore data at once confirmed what had been indicated afloat, viz., that the variation has doubled in amount since 1813, being now in that vicinity $20^{\circ} 4' W.$, instead of $9^{\circ} 51' W.$

"I took the opportunity of another calm day to ascertain the temperature of the sea at 900 and at 1,000 fathoms. At both depths it proved the same, viz., 40° of Fahrenheit, whilst near the surface it was 58° . At the same time I employed means for tracing the depth to which the sun's rays penetrated, and found it to be 66 feet."

As we considered the foregoing statement would have been imperfect unless accompanied by particulars of this interesting proceeding, contained in Captain Denham's letter to the Hydrographer, Sir Francis Beaufort, it is with much satisfaction that with his permission we are enabled to add to it the following extract:—

"I must not omit, even in this, to allude to the generous offering to our expedition of 15,000 fathoms of sounding line by Commodore M'Keever, of the United States Navy, whose broad pendant was flying on board the *Congress* frigate at Rio. He was not content with presenting me with books, &c., but having observed that he had something *in our way*, sent me, the day before he sailed, 10,000 fathoms on one reel, and 5,000 on another, of most admirably adapted line for experimenting in deep deep-sea casts. Without compunction as to ships' stores, I determined to hazard the 10,000 fathoms (beautifully laid up, or grafted into one length) the very first opportunity; and we as assuredly did get to the bottom at 7,706 fathoms, as not actually bringing up a sample can permit me to say, for I and Lieut. Hutchison, in separate boats, with our own hands, drew the plummet up 50 fathoms several times, and after it had renewed its descent with the same velocity it had done during the last hundred fathoms, it landed on each occasion abruptly to the original mark to a fathom, and would not take a turn more off the reel. By its parting at 140 fathoms from the surface, we lost a six's thermometer, which I had bent on at 3,000 fathoms. With the remainder of the line I have obtained some 500's, when our own lines could not have been employed to that extent; and on two occasions between Tristan d'Acunha and this, (Cape of Good Hope,) I obtained 900 and 1,500 fathoms with thermometers attached, saving them each time, and showing that 40° is the minimum temperature after 200, where it averages 50 and 52, no matter what the surface temperature may be. I have still 5,000 fathoms to play upon, before reeling up spun yarn again, which from our junk I had done to the length of 8 miles before I had the present."

We have no doubt the worthy Commodore will be much gratified with this disposal of his line. We need scarcely assure him that such generous marks of friendly feeling cannot fail to be appreciated, and particularly so when it is considered that he was giving away the means by which he himself might have gained the credit of finding the greatest depth of the ocean yet attained. But

noble minds are above such personalities. The bottom was reached, and that was sufficient.

We shall leave our readers to form their own conclusions on the experiment, as to the up and down depth, as a seaman would say. But we may add, that although the experiment was made in a favourable part of the South Atlantic Ocean, we cannot suppose it possible that the ship would remain for the nine hours during which it lasted in a vertical position immediately over the lead, although nothing is said by Captain Denham as to the direction in which the line grows as the ship drifts while the operation is going forward, nor whether the boats and the ship were separated by the effect of any current. We by no means impugn the statement that bottom was reached when $8\frac{1}{2}$ statute miles were out, but should like to know whether or not some deduction should be made for drift, and what that should be, before an up and down depth can be asserted.—ED. N. M.

STEAM TACTICS.

SIR,—In a very valuable article in the *Practical Mechanic's Journal* for January, 1853, some remarks are made at p. 228 on the handling of Screw Ships. Deeming your periodical well adapted for the discussion of such subjects, I take the liberty of forwarding to you the following observations for insertion, should you think them worthy a place in your next impression.

And first, "on the relative advantage of steaming head to wind, and beating to windward under steam and sail.

During a long period of employment in steam vessels, both paddle and screw, making passages in every description of weather, I have always found, no matter what was the power of the vessel, that when steaming head to wind, the paddle vessel should be kept at it as long as the course can be held, but the moment she begins to fall off, first to one side and then to the other, the fore and aft sails should be set, and the vessel turned to windward. I have made from 70 to 100 miles right in the wind's eye in 24 hours, against a wind and sea in which the power of the vessel was insufficient to give her good steerage way. If under the same circumstances I had kept her at it, I should not have made one half of the distances above quoted.

There is no economy in keeping a screw vessel against a head wind and sea after her speed is reduced to two or three knots per hour, because she keeps up her revolutions nearly, and whole cylinders of steam are wasted in "slip." In the paddle vessel the revolutions decrease nearly as the speed decreases, and the consumption is not so wasteful as with the screw. There should be no hesitation, therefore, in assisting the screw with the sails the moment the rate of going is reduced to two or three knots per hour.

Next, with regard to "tacking."

In tacking a sailing ship, the object is to give her sufficient way through the water, before putting the helm down, to ensure her not missing stays, and the practice must ever be to put them about in the least possible space of time, except in smooth water, when the evolution may be prolonged to admit of "shooting in stays." Generally, the longest ship for her size will take the longest time in stays. But in trying to windward under steam and sail with a screw ship, the following are the tactics. Let the ship come up into the wind gradually by giving her three or four spokes of helm, and when the wind is about half a point on the bow, swing the main yard; now right the helm, and keep her head to wind until the after yards are trimmed and the main tack boarded while under the lee of the head sails; then put the helm over again

and complete the evolution. If, on the contrary, you put the helm right over, you will find that you cannot work the ship fast enough, particularly if there is a strong wind. So that when we speak of a screw ship tacking, we must not say that one ship is better than another because she is the shortest time in stays. On the contrary, if among a number of screw ships steaming together, one ship is put about in much less time than the rest, the chances are that she has been improperly handled.

Lastly; the readiness with which a screw ship, while under steam, answers her helm, can be made use of in other ways than keeping her under controul while in stays. If necessary, her head can be turned round several points of the compass just before the anchor is tripped, by putting full power on at once, with the helm hard over, a manœuvre which the writer has frequently practised with advantage.

I remain, Sir, &c., &c.,
MASTER MARINER.

ARCTIC PROCEEDINGS OF CAPTAIN MAGUIRE, in *H.M.S. Plover*, in *Behring Strait*.

The *Amphitrite*, with Commander Maguire and officers going out to join the *Plover*, sailed from the Sandwich Islands on the 30th May, and arrived at Port Clarence on the 30th June, where they found the *Plover* preparing for sea, and Captain Maguire took the command, relieving Captain Moore, who had now passed four winters in the ice.

Arrangements were immediately made for communicating with Point Barrow, where there was an Esquimaux rumour that the *Enterprize* was wintering, but this proved, like all Esquimaux reports, untrue.

Commander Maguire proceeded with the *Plover* up to Icy Cape. The weather was very bad, but thinking it would moderate, he started with the boats for Point Barrow, having appointed a rendezvous where they were to be picked up, on their return in the boats.

No sooner had the boats departed than the gale freshened, and blew so hard that great apprehensions were entertained for their safety; and not without cause, as it appears from Commander Maguire's account that they were very nearly lost. However, on getting under the lee of the land they were in smooth water, and succeeded in reaching Point Barrow.

Finding that neither Captain Collinson nor Captain McClure had communicated with this spot, and having examined the harbour discovered by Capt. Moore and found it fit for winter quarters for the *Plover*, the boats now returned.

Owing to some misunderstanding about the rendezvous, the boat party were thrown into difficulty, and after waiting seven days at Icy Cape, and seeing nothing of the *Plover*, and their provisions running short, Captain Maguire started for Cape Lisburne, and was eventually picked up by the *Amphitrite*.

Rejoining the *Plover*, Captain Maguire proceeded with her to Point Barrow, and although it is not known if she got safe and well into winter quarters, at that advanced post, there is every reason to suppose that she would do so without difficulty.

JOHN BARROW.

ARCTIC REGIONS.—The subjoined report is additional proof of the antiscorbutic properties of Edwards' Patent Preserved Potato, and its great importance as a vegetable diet with salt provisions, which we have frequently noticed in this journal.

From Capt. Kennedy lately commanding Lady Franklin's Private Arctic Expedition

"It gives me great pleasure to add my testimony to the numerous acknowledgments already received of the wholesome and nutritious properties of Edwards' Preserved Potato, which I have had the best opportunity of testing in the course of the voyage of the *Prince Albert* to the Arctic Regions last year. While in winter quarters in Prince Regent Inlet it was used constantly along with our salt provisions, and found to be an admirable antiscorbutic, equally useful in the prevention and cure of scurvy. In the course of our extensive exploration, during the winter and spring of 1852, we found several cases of the Preserved Potato amongst the stores deposited on Whaler Point by Sir James Ross, three years before; and its valuable properties were in no respect impaired, either by time or exposure to the climate. As an instance of its remarkable remedial properties in the cure of scurvy, I may mention, that, on arrival at Whaler Point, myself and five men were suffering severely from this disease (scurvy), but by a free use of the Preserved Potato we were restored to comparative health in little more than a week. I can have no hesitation in recommending it as a most useful, and, indeed, indispensable article of food at sea. I should say that no long voyage should be made without it, and much less one to the Arctic Regions.

London, Nov. 23rd, 1852.

"WM. KENNEDY."

NEW ARCTIC EXPEDITION.—We learn, from good authority, that a considerable quantity of Edwards' Patent Preserved Potato is now being supplied for the new Arctic Expedition, and it is much to the credit of the naval authorities that this prudent course has been adopted, the antiscorbutic and nutritious qualities of this vegetable diet being so fully and practically established in the Arctic Regions, in which scurvy had before prevailed to a great extent. The American Government is now ordering supplies of Edwards' Patent Preserved Potato for the service of the United States' Navy. — *United Service Gazette.*

NAUTICAL NOTICES.

SAILING DIRECTIONS FOR THE MAURITIUS. *By Colonel Lloyd, late of that Island.*

In making the Mauritius from the eastward, in the parallel of 20°, a group of mountains will be seen to the southward, called the Bamboo range, which, in clear weather, are visible at the distance of 40 or even 50 miles. These mountains, of which the highest is 2,042 feet above the level of the sea, surround Port south-east, or Grand Port.

To the northward a small island may be observed, called Round Island; its summit is 1,049 feet above the level of the sea, and it can be seen at the distance of 20 or 30 miles; when the weather is hazy it is frequently discovered before the main land.

GRAND PORT NORTH ENTRANCE.

A vessel intending to enter Grand Port or Mahébourg by the northern en-

trance, must keep Bamboo Peak bearing west by compass until Rocky Island is made, which is surmounted by a beacon visible at five miles distance. This rock is situated at the extremity of the reef, and forms the northern arm of this entrance to Grand Port; it should be passed one-third of a mile to the southward. A S.W. $\frac{1}{4}$ W. course must then be steered about two miles, when on the port bow a remarkable isolated breaker called the Diamond will be visible opposite to another entrance to Grand Port, called the Danish Channel. Having brought this breaker to bear S.S.W., distant one-third of a mile, steer W. $\frac{1}{4}$ S. about one mile, when a bluff hill will be seen on the port bow, stretching to seaward, surmounted by a curious black rock, and at the foot of its leeward extremity there is a battery. This is called the Devil's Point, and as soon as the black rock bears W.S.W., distant one mile, steer S.W.b.S. $\frac{1}{2}$ S. for about $1\frac{1}{2}$ mile, passing the Devil's Point two-thirds of a mile from the Battery, and bring up in 9 or 10 fathoms sand and gravel, the Devil's Point bearing N.W. $\frac{1}{4}$ W., and the Bamboo Peak N.W. $\frac{1}{4}$ N.

In passing the Devil's Point take care to keep closer to the reef on the port hand than to the land, as there are two large banks one-third of a mile from the shore, with only 2 or 3 fathoms of water over them.

By following the above directions, and not approaching the reefs on either side of the channel within less than a quarter of a mile, a vessel may be taken to the above safe anchorage without risk.

It would not be advisable to attempt going any further towards Mahebourg, without being well acquainted with the intricate channels and shoals, or there is a colonial pilot on board.

EASTERN, OR ISLE OF PASSE ENTRANCE.

The Eastern entrance to Grand Port is less intricate than the above, in preference to which it is recommended. It is situated about 9 miles S.W.b.S. of the northern entrance, and can be easily made out by the Isle Pass rock, which forms the northern arm of its entrance, as well as by a remarkable bluff mountain, 1583 feet high, inshore, immediately opposite, called the Lion's Head, which in making the Pass must be kept on a N.N.E. $\frac{1}{4}$ E. bearing.

The Isle of Pass will be easily recognised; it is the southernmost of several small rocks or islands bordering the reef, and is covered with houses, fortifications, &c. There is also a flagstaff near its centre.

In entering the Channel keep the Lion's Head bearing N.N.E. $\frac{1}{4}$ E., as above, until the centre of the Isle of Pass bears E.b.N., distant $\frac{1}{2}$ of a mile; then steer for the rock of the Devil's Point, which will bear E.N.E., and after running $\frac{1}{2}$ of a mile bring up in about 13 fathoms sand and gravel, the Isle of Pass bearing S., and the Lion's Head S.W. $\frac{1}{4}$ W. It is not advisable to go any further without a pilot.

DANISH PASSAGE.

The Danish Passage already mentioned, bearing W.N.W. $\frac{1}{4}$ W: from Peak Bamboo, cannot be recommended on account of the small depth of water at its mouth, (3 fathoms,) which occasions a heavy cross sea, sometimes breaking from point to point. If, however, this entrance be attempted, when off the mouth of the channel keep as close as possible to the northern point, in order to avoid a large coral bank in the centre of the Pass, on which there is only $2\frac{1}{2}$ fathoms; steer two-thirds of a point to the southward of Peak Bamboo for about a mile, when the Diamond Rock will be right ahead; pass it on either side at a cable's length, and as Bamboo Peak is brought to bear W.N.W. $\frac{1}{4}$ W., steer W. $\frac{1}{4}$ S. to make the Devil's Point, and follow the directions given above for the northern entrance to pass that point to the anchorage.

TO RUN THROUGH THE ISLANDS FOR PORT LOUIS.

A vessel bound to Port Louis, on nearing Round Island, a large rock of a

whitish colour will be seen, called Serpent Island, and further to the westward two more islands and a large rock. The nearest to the main land is called the Gunner's Quoin, the next Flat Island, and the rock is called the Pigeon or Dove House.

In channel between Round and Serpent Islands are 23 fathoms, but it is not advisable to attempt this passage at the risk of being becalmed, and also on account of two dangerous reefs, one $1\frac{3}{4}$ mile to the westward of Serpent Island, and the other half a mile N.W. of Round Island. The latter breaks only when the sea runs high. Should a vessel be obliged to run through this channel, she should pass midway between the two reefs, or about $\frac{2}{3}$ of a mile to the southward of that of Serpent Island, which is always visible by its breakers.

To the eastward of Serpent Island a ledge of rocks extends about $\frac{1}{2}$ of a mile, and in running to the northward or eastward of this island it is not advisable to approach it within a mile; care must be taken also to give its reef a wide berth.

Round Island is situated in lat. $19^{\circ} 50' 34''$ S., and in long. $57^{\circ} 47' 56''$ East of Greenwich, and is $13\frac{3}{4}$ miles E.N.E. $\frac{1}{2}$ E. of Cape Malheureux, the northernmost point of the Mauritius. It may be passed to the eastward as well as the southward at the distance of a mile, and in case of calm, anchor in 15 fathoms, half a mile from the shore, the island bearing S.W. and the reef North, distant $\frac{1}{2}$ of a mile.

The Gunner's Quoin is situated $2\frac{3}{4}$ miles N.b.E. $\frac{1}{2}$ E. of Cape Malheureux, and $11\frac{1}{2}$ W.S.W. $\frac{1}{4}$ W. of Round Island; its north-western extremity is steep, and 515 feet above the level of the sea; it slopes gradually towards the S.E., where it is terminated by three dangerous rocks, called the Carpenters. There are also several dangerous rocks on the North and N.E. sides, distant about a quarter of a mile.

In running between the Gunner's Quoin and the Mauritius, give the main land a good berth, as there are several shoals off it; the deepest water is about half a mile from the Quoin, from 20 to 30 fathoms.

Flat Island is situated 4 miles N.E. of Gunner's Quoin, and 7 miles W. $\frac{1}{2}$ S. of Round Island; its south-western extremity is steep and rugged, the remainder of its surface is flat, and comparatively smooth. It is cut in two from N.E. to S.W. by an arm of the sea, which forms a sandy cone opposite the Gunner's Quoin, shut into the N.W. by a ledge of reefs; the S.E. portion is called Gabriel Island.

The channel between Flat Island and the Gunner's Quoin is the safest and most generally used. In running through it give a good berth to a ledge of rocks extending out half a mile to the southward of Gabriel Island, and attention also must be paid to the rocks N.E. of Gunner's Quoin.

The Pigeon House rock, 172 feet high, resembles a prismoid; it is only $\frac{1}{2}$ of a mile N.N.E. of Flat Island, and the intermediate channel containing 2, 3, and $3\frac{1}{2}$ fathoms, is very unsafe and never attempted.

A vessel may also run between Round Island and Flat Island, but must not approach the latter or the Pigeon House within a mile.

The flood between these islands sets N.E., the ebb S.W. The stream is very rapid, averaging from 3 to 4 miles per hour, which must be allowed for, and during the S.E. monsoon in June, July, and August, the stream sometimes runs 6 miles with the flood, and the ebb occasions an equally heavy race, between the Gunner's Quoin and the North part of the Mauritius.

Whichever of the above channels may have been adopted, the bluff of the Quoin must be brought to bear $6\frac{1}{4}$ miles E.N.E. before rounding in, abreast or E.S.E. $\frac{1}{2}$ E. of Cannonier Point, which is low and sandy; at its extremity there is a battery and watch tower, from which a dangerous reef also extends out to sea about half a mile. From thence steer S.W. b.S. $\frac{1}{2}$ S. $10\frac{1}{2}$ miles, which will

clear every reef abreast of the Bell Buoy, or outer beacon of Port Louis, and bring up in 13 fathoms.

A pilot generally attends two or three miles from Port Louis, and he must not be refused, unless the vessel is under 100 tons; the entrance of the harbour is marked by buoys on each side, and will be known by the Pieter Booth mountain bearing S.E. from it.

A vessel not making the Mauritius till the evening, and the weather hazy, should not run between the islands in the night; but in clear weather, as they are visible at a great distance, she may pass with safety between Flat Island and the Gunner's Quoin.

Following the directions given above for clearing Cannonier Point, and the other reefs extending along the N.W. coast of the Mauritius, the breakers are heard at the distance of three miles, and should not be approached within 15 fathoms.

All the bearings given are by compass, which in 1844 varied $11^{\circ} 17' 34''$ W. High water at full and change, 12h. 30m.

LOCAL ATTRACTION; ITS EFFECTS AND OBVIATION, *Illustrated with Diagrams and Plates.* By Lieut. Julius Roberts, Royal Marine Artillery, F.G.S., &c.

Assuredly the deviation of the compass in these days of iron appliances in a ship has become a monster evil. The time was when our forefathers sailed in wooden ships, like good, sober, hardy old square-toed gentlemen as they were, and kept their reckoning well enough for the "common purposes of navigation" in their day, so that no small deviation of the compass from its path of duty ever disturbed their dreams. Yet, as the world rolled on, men's heads became wiser; and as the means of correcting a ship's reckoning were improved, it was discovered that this favourite little bijou of the seaman, his friendly guide both by night and day, was not so faithful in its duty as had been supposed. Although a good servant to one master, and well deserving of the character it had once earned, *agité mais constant*, yet when a second appeared in company, and it had obeisance to make to him also, its good character became indeed questionable. But when, alas, this new master, strengthening with years, and appearing, Proteus-like, in many shapes, such as in heavy armaments of iron, cables and rigging of iron, steam engines of iron, and even ships of iron; then indeed the poor compass was quite bewildered, its character was no longer doubtful, it was fairly gone and no longer to be trusted. Man cannot serve two masters, nor can the compass obey the mandates of his new iron lord without forfeiting some allegiance to his old master, to which his first adherence was *naturally* due, as belonging to their mutual mother earth; and thus the magnetic pole was no longer the pole of the magnet on board a ship, and only on shore could it command undivided allegiance from its vassal. Hence the great deviation of the compass on board ship became a monstrous evil, and the question naturally presented itself, is its good character irretrievable? for without the compass there would be an end of navigation. The first proposal was to correct its naughty habit by means of additional iron, fixed in one place, so as to be always in close company with it, but experience soon showed that this was but a mitigation of the evil; that it still existed in perhaps a lesser, perhaps a greater degree, and it was at length wisely determined to find the amount of this erratic propensity of the compass, to ascertain the extent

of its wanderings, and to make a generous allowance for them. Such was the wise conclusion, and such is the safe system pursued ever since with the ships of the Government. Still there are other shipowners besides the Government, and they like to have a corrected compass; for the method of applying correcting forces to it is more to their taste, and still is followed in some ships, to the great annoyance of their commanders. There are proofs of this even in our last volume, among many others of common occurrence, which of late have fearfully increased, leading to disasters on our own shores, and rendering it extraordinary how a system of correction which is known to be imperfect can be persevered in. Here are some consequences:—

Remarks on the Compasses of the Iron Steamboat Keera, from Newcastle to Sydney.—Correct as far as the equator; first found wrong in the south-east trade, October 3rd, 1851, lat. 27° S., long. $23^{\circ} 52'$ W.; ship's head by compass S.W. true, S.W.b.S. On getting to the southward of the south-east trade, the deviation increased as we got to the eastward. In lat. $41^{\circ} 21'$ S., long. $33^{\circ} 45'$ E, the course by observation was N. 89° E.; course by binnacle compass, E.b.N.; course by cabin compass, S.E. $\frac{1}{2}$ E.; deviation of binnacle compass increasing. November 28th, lat. 40° , long. $82^{\circ} 40'$ E., steered N.E. to make an east course. On Thursday, December 3rd, lat. 42° , long. 100° E., in a heavy gale hove to; the compass frequently changed ends, sometimes continuing reversed two or four hours, and then vibrating a long time, in fact useless. They continued so until the 6th, when I reversed the poles of the antagonist magnets, and removed them about two feet further from the compass, after which we made good courses with the ship's head east, but found the compass sometimes one point wrong, ship's head north on the coast.

Extract of a letter received from Captain James Hamlin, of the iron ship *Thomas Hamlin*, arrived at Aden under date 26th April, 1852:—

“We rounded the Cape of Good Hope 8th March. The compasses have almost put me mad, but I am now getting used to it. Off the Cape they were *only six points out*, and this not on one point only, but varying greatly at different points, and also on the same points in different localities; so that from time to time, after labouring with azimuths and amplitudes to get a scale of errors made, I have had my pains for nothing, and had to begin again. And now it is my daily task.”

Warnings such as these might be supposed sufficient to ensure the adoption of the safe system pursued in H.M. ships. But this is not the case, and one among other modes of correcting these dangerous deviations is to be found in a compound compass, of great ingenuity described in the work before us. The author says plainly, that he has found out the method which he proposes of correcting the deviation under “a long conviction,” not peculiar to himself, of the inaccuracy attending the present mode of swinging ships; and that owing to the results obtained in one latitude being inapplicable in another, and the change in the arrangement of the various iron masses in a ship, he is convinced that “the method of swinging ships must sooner or later be discarded,” and he would therefore at once substitute for it his own method of correcting the acknowledged evil.

As to results obtained in one latitude being inapplicable in another, change we presume is the common lot of all, and must be accordingly compensated for in time and place. But with respect to the system of swinging ships, it stands established under the authority of the veteran Professor Barlow, at whose earliest experiments in H.M. ships, now many years ago, we had the good fortune ourselves to assist. It is true that the object is gained at the expense of a little time and even some trouble; but does any one suppose it is likely to be given up until a safer and less expensive mode of effecting the same object is established beyond all question. Found by actual experiment the deviator

must be, and although "the repetition" of this process "in different latitudes" may, in the estimation of our author, "occasion annually a very great and serious expenditure of public and private money, (a very considerate mode of advancing the merit of his own compass by the way,) we yet would ask, what is this expenditure compared to the loss of a single ship? Economy is a good argument, but safety must be one of its ingredients, or where is economy?

But we have now to inquire what is the kind of compass which Lieut. Roberts has invented, which he tells is to obviate these effects of local attraction. The experiments and conclusions of this gentleman have resulted, we learn from him, in the production of a form of compass entirely new. As far as we can see of its construction, (for we find no finished representation of it in the work before us,) Lieut. Roberts appears to have divided the compass card into two equal parts by the East and West line, and attaches needles to each of them, which shall act on each separately, the two sections being free to move concentrically, independently of each other, and without in the least interfering with each other, being placed in different horizontal planes, so that they may assume any angle with each other. The needles are suspended in the central pivot-line common to both; they are either both short, and placed on one side of the central pivot, or one of them (either the upper or lower) has the same length on each side of its pivot, while the other is entirely on one side of it, the deficiency in this case on the opposite side of the pivot being compensated by a weight. The North and South ends of each needle being but a short space apart, (one over the other,) a piece of iron is attached to the outer end of one, by which the magnetic circuit is preserved. Then a mutual attraction or repulsion going forward between each needle, the magnetic meridian found from them is to be designated by a pointer attached to one of them; this pointer being moveable round the circumference of the cards, it may be made to bisect the angle of opening between them for that meridian. We must refer those of our readers who are interested in the subject to Lieut. Roberts's work for a fuller account than this mere outline, and to the instructions which he tells us are to be supplied with each instrument, which instructions we conclude, will contain more particulars of the mode of adapting the compass to compensating the local attraction of the vessel after it is found; so that swinging the ship even with Lieut. Roberts's compass does not seem to be dispensed with for finding it. But it is sufficiently clear from this arrangement, that the degree of magnetic power in each needle, as well as its liability to change, is a very important element in the subject, affecting the direction of that meridian, and giving, indeed, a very questionable one; and also that Lieut. Roberts aims at correcting an error *gradually* approaching and receding from a maximum quantity. The question then presents itself, is this really the case with the local attraction of a ship on her compass?

A glance at the tables published by Captain Johnson, in his valuable work entitled *Practical Illustrations of the necessity of ascertaining the Deviations of the Compass*, shows that it is uncertain. The very title indeed of this work at once declares the opinion of the author. His illustrations go directly to prove the necessity, in consequence of this very irregularity, of always ascertaining the amount of the deviation on every point by actual experiment. Lieut. Roberts is no stranger to this work, for he has introduced into his own several examples to show the amount of *regularity* with which the deviations increase.

In certain cases of large ships there is an approach to regularity, but it is very different in others, and an invention like that under consideration, that assumes to be applicable generally, must be dealt with accordingly. Therefore let us take the case of the *Onyx*, given by Capt. Johnson in p. 37, not among Lieut. Roberts's quotations. In 1848, at Greenhithe, her line of no deviation

was in a direction S.b.E. ½ E. and N.W.b.W., while at the same place in 1850 it was N.E. and W.b.S., the points of greatest deviation in the former case being E.S.E. and S.W.b.S., and in the latter S.S.W. and N.N.W.

In the former case ten points of the compass are sufficient for her to pass from one maximum deviation to another, and in the latter thirteen. We might repeat such anomalies, for Captain Johnson's valuable tables abound with them. Indeed, excepting some cases of large ships, where the poor compass has something more approaching fair play than in smaller ones, his very valuable observations on the important subject of the deviations of the ships' compasses of H.M. navy, show a mass of anomalous irregularities from beginning to end; and duly impressed with the great importance of the subject, involving as it does life and property, he lays down the following axioms, which in these days of speculative invention it would be well to remember:—

1. That in steam vessels generally the points of no deviation are not North and South, nor are the points of maximum deviation East and West; neither does it follow that the points of no deviation are invariably opposite to each other.

2. That the deviation in one vessel is not a guide to its amount or direction in another, and we might add after the word "direction," what no doubt Captain Johnson considered as amounting to the same thing, "or in the same vessel at different periods," as shown in the case of the *Onyx* above-mentioned.

3. That supposing the deviations of the compass in steam vessels to be represented by curves, they are much more abrupt in some vessels than in others, &c.

And lastly, that *nothing but actual observation in each vessel can be relied upon for practical purposes.*

This advice, the result of many years' experience of a scientific officer charged by the Government with the important duty of carrying out his own practical conclusions, is set at nought by Lieut. Roberts, who can only see the advantage of doing it all away in the adoption of his own compass. Now it would have been at least satisfactory to his readers, if Lieut. Roberts had given them in the work before us some report of the behaviour of his compass in a seaway. Indeed we cannot but suppose he has provided himself with proofs of its efficiency under the most trying circumstances, with which to support his address to our shipowners and merchants, (besides the imposing appearance of the Government arms on the cover of his work,) for that address is couched with the air of experience, in terms complimentary of the unprejudiced interest with which all improvements tending to the public good are welcomed by them. We may presume that he has some such recommendation, when he says of his invention, "that he is thus the more encouraged, with the greatest confidence, to submit these instruments to their consideration." And why? Is it because of his opinion of the inaccuracy attending the present method of "swinging ships," and the little confidence that can be placed in the results so obtained? He must be a bold man who would advance such reasons in favour of the adoption of his invention, when the system which he thus impugns has saved ships from destruction ever since it was first established, which no ship of the British navy is permitted to put to sea without undergoing, and not only this, but every ship is obliged, by order of the Admiralty, owing to the change in effect from change of place, to repeat the same operation periodically, and send the results to the office.*

So much for the inaccuracy of the present system of swinging ships. How far the shipowners may adopt Lieut. Roberts' compass remains to be seen, but

* See Admiralty order in our former volume.

considering its novel and complicated construction, and liability to derangement, in comparison with the improved compasses now in use, we apprehend they will prudently require an account of voyages performed with it, and a full and clear exposition of its behaviour under different circumstances of sea and weather before adopting it.

DESERTION OF SEAMEN IN AUSTRALIAN PORTS.

The following important letter, addressed to the editor of the *Sydney Empire* of Nov. 9, by Captain Parfitt, the commander of the Peninsular and Oriental Company's screw steamer *Formosa*, reveals a most extraordinary state of things in Australia:—*Daily News*.

SIR,—My name has been brought forward so frequently of late, in connection with the Water Police, that I feel forced to publish a plain statement of all the facts (from first to last) concerning the *Formosa's* crew.

By your inserting this you will not only oblige me, but lay before the public an example of the great difficulties against which the shipping interest has to combat in Sydney, and thereby, I trust, urge them to strong measures to inquire into and root out the evil, and establish a more healthy system (in the administering of the laws relating to shipping, in the place of the rotten and unjust one at present in practice).

During the passage from England to Port Phillip, the *Formosa's* crew, in common with all other ships coming to Australia, conducted themselves disgracefully, so much so as to compel me on one occasion to keep all the seamen in irons for three days, and the two ringleaders, till I arrived at Port Phillip, where I prosecuted them and left them in gaol.

Yet not one of this troublesome crew did I lose at Port Phillip, a place with far more inducements for seamen to desert than Sydney, and in our case (having to coal alongside three colonial vessels close to the shore), it offered equal facility. I have to thank the decision and promptitude of the Water Police Magistrate at William's Town for keeping my men.

On arriving at Sydney, I was aware that my men would use every endeavour to desert, and to induce them to remain, I offered to enter into an agreement with them to give them up to Singapore £10 per month, in addition to the pay they had at Southampton agreed to serve for, for three years. At this time they agreed to the proposal, but in the evening I received a letter, signed by 21 seamen and firemen, stating that unless I cancelled my old articles, and agreed to bring them back from Singapore at the terms I offered, they would "stand their chance."

I then told them that, as they refused my offer, I withdrew it altogether. I then made arrangements for keeping the ship in the stream during her stay in port, allowed no liberty or visitors to the crew, and, in fact, took such precautions to prevent desertion, that at length they refused to perform duty at all. Summonses were then taken out by me for their arrest. The official log-book was read to them, collectively and individually, and all the legal rigmarole was duly conformed to, and the men were lodged in the watchhouse, the water police magistrate giving me every assistance, and informing me that, after the committal of the men to gaol, I could, upon due application, have them sent on board previous to sailing out of the harbour. Thus far, whilst the matter remained in his hands, all seemed in a fair way towards success. Now mark the turn given to affairs as soon as the city of Sydney became the

scene of action. I attended at the Police Court by appointment, I wait patiently for my case, I am sent for by the water police magistrate, and informed that probably my case will not come on till very late, but that I may get it postponed by application to the bench through Mr. Powell, the inspector of police. I apply to Mr. Powell to make the application, he consents, and I leave the court. Next comes my legal adviser, Mr. Nicholls, who ascertains from the opposing solicitor that the case was postponed; accordingly he, Mr. N., leaves the court. Soon after this the case is called on. Mr. Powell asks for postponement. The bench quarrel on the subject, and at length the majority admit the crew to bail on their own recognisances. Away go the men into the town, and in the afternoon some half dozen of them, drunk, repair to the ship, demanding some dinner, and stating that the magistrates told them to come on board and make themselves comfortable. The chief officer of course refused them admittance, well knowing the hindrance which a gang of drunken and disorderly seamen would be to a ship then in a critical position and requiring every attention, with a number of men employed in the room of these fellows at 10s. per day each. When these facts came to my knowledge, I saw immediately that the mischief was done, and knowing that these men, after communication with the crimps, lodging-house keepers, and runaway sailors in the town, even if compelled to sail in the ship, would come on board so prepared as to create a mutiny of a very serious nature as soon as we got to sea.

Not being anxious to be brought before the public, (as the captain of the *Georgiana* has been,) I at once determined to abandon all prosecution, and let the men go about their business; intending at the same time to refuse their discharges and clothes, as they all received two months' advance on the 4th of August last, and, with one exception, all left behind them a monthly note, which cannot be stopped till the 18th January next, thus leaving them in debt to the ship some two months' wages. The men, half drunk, then in a body stop me in the street, and creating a great disturbance, much to my annoyance and hindrance of passers-by, demand in angry terms their discharge. I refused. They then ask if I will admit them on board the ship. I reply, "Yes, to work on the original and existing agreement." They say, "No; if we come, we come on our own terms."

On Wednesday last the police apprehended two men at Morpeth, without any warrant or instructions from me. Why these two men were taken I cannot conceive, when 15 others of the crew had been daily lounging about Lower George-street, and no notice taken of them. I declined prosecuting them, for the same reason as before, because they no longer could be of any use to me, and the expenditure of my time is of more value than the mere gratification of having them lodged in gaol. I was next sued by 15 of these men in the Supreme Court for £29 each, (why this exact sum was pitched upon I know not,) and I found that as they sued as paupers, (the lawyers and crimps I presume found the money for the expenses,) that to defend the action would cost some £300, and then, when a verdict was gained, I could not recover 300 farthings. My solicitor then applied to the seamen's solicitor to stay all proceedings till the next day, when an arrangement could be made, which was agreed to. Yet after this, Thursday morning, I find six more summonses issued, and threatened, if these were not paid, the others would not settle the affair. One of these men left Sydney in the *Shamrock* the day before, and could therefore have had no interest in the affair. I was therefore compelled to compromise, and yield to any demand the lawyer chose to make, (for Jack now appears to me to have had little more to do with the matter,) rather than expend time and money upon a vexatious lawsuit, and become a martyr for the public good; and, liberal and wealthy as the company is in which I serve, yet the directors would scarcely like to find that they were obliged to stand up alone to expose an abuse which affects the whole shipping interest,

and has for some time been tolerated in Sydney, and appears likely to exist still longer, if the press and public do not take the matter up, both here and in England.

I remain, Sir, your obedient servant,
WILLIAM PARFITT.

Steam-ship *Formosa*, Sydney, Nov. 8, 1852.

P.S.—The ship is now detained for want of men, after our going to the enormous expense of working day and night to get ready, in order to start punctually and save the mail, for the accommodation of the public.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory.
From the 21st of December, 1852, to the 20th of January, 1853.

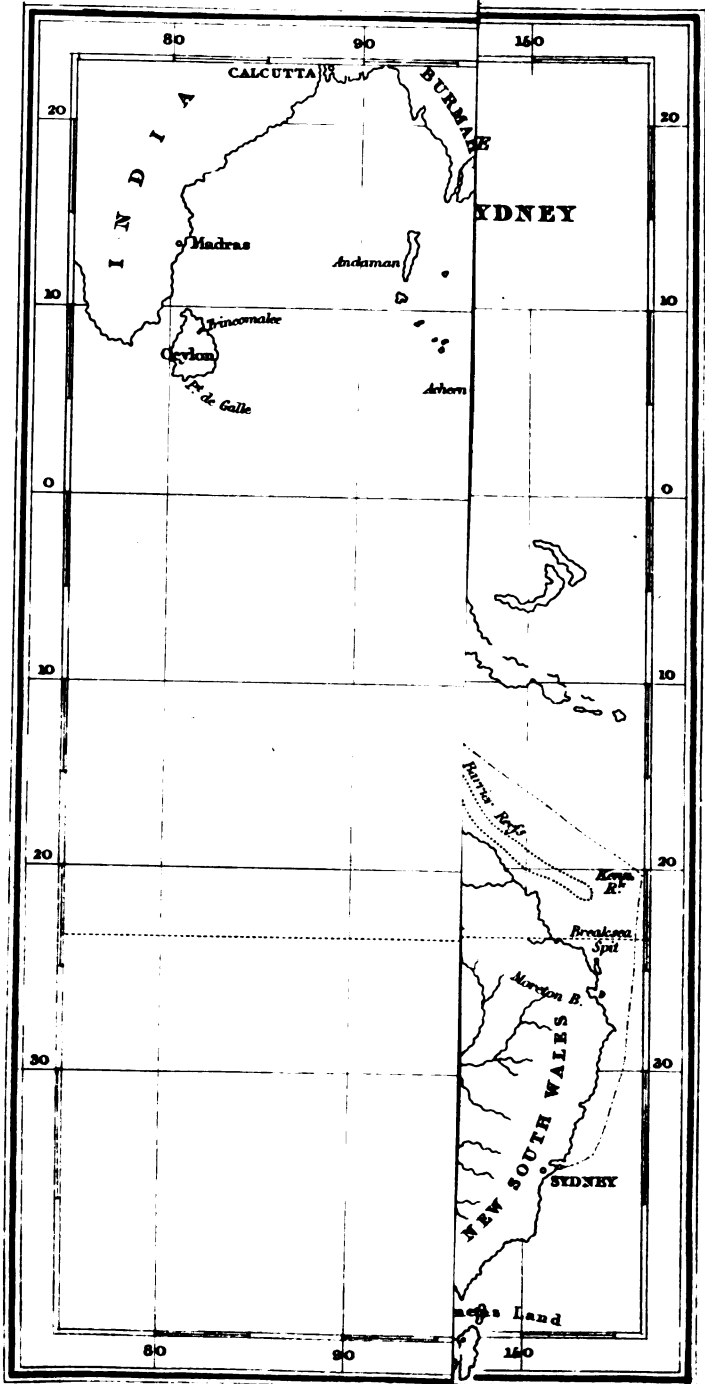
Month Day.	Week Day.	Barometer.		Thermometer in the shade.				Wind.				Weather.			
		In Inches and Decimals.		in the shade.				Quarter.		Strength.					
		0 A.M.	3 P.M.	0 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.N.	P.M.	A.M.	P.M.		
		In Dec.	In Dec.	0	0	0	0								
21	Tu.	30.07	30.02	42	48	41	40	W	W	2	2	b	bc		
22	W.	29.82	29.72	44	48	41	40	E	SW	1	1	od (2)	bc		
23	Th.	29.75	29.75	41	39	38	41	E	SE	2	2	bc	o		
24	F.	29.75	29.75	48	53	39	51	S	SW	4	5	od (2)	qbc		
25	S.	29.78	29.78	50	48	48	51	SW	SW	5	1	qor (1)	bc		
26	Su.	29.78	29.76	45	48	43	40	SW	SW	2	2	bc	bc		
27	M.	29.10	29.30	53	52	47	53	SW	SW	9	9	qbcp	qbc		
28	Tu.	29.54	29.62	41	45	40	46	SW	SW	2	2	bc	bc		
29	W.	29.77	29.65	42	49	34	50	S	S	3	5	bc	qbc		
30	Th.	29.80	29.86	50	51	46	52	SW	SW	2	5	bc	qbc		
31	F.	30.16	30.12	42	49	40	50	S	SW	2	4	bc	bc		
1	S.	30.06	30.02	49	50	44	51	S	SW	2	2	o	bc		
2	Su.	29.91	29.87	50	50	48	51	S	SW	3	2	od (2)	bc		
3	M.	29.70	29.78	48	46	40	40	SW	W	2	2	op (1) (2)	bc		
4	Tu.	29.64	29.57	47	49	38	50	S	S	6	7	qor (2)	qor (3 (4		
5	W.	29.64	29.66	42	48	41	40	SW	SW	2	2	bc	bc		
6	Th.	29.64	29.50	42	42	38	48	S	SW	4	5	bc	qbcp (3)		
7	F.	29.28	29.15	46	52	36	53	S	SW	4	7	or (2)	qor (3)		
8	S.	29.45	29.41	40	45	38	47	S	SW	1	2	o	bc		
9	Su.	29.74	29.76	36	40	34	48	SW	SW	2	2	bc	bc		
10	M.	29.66	29.44	46	47	39	51	S	S	2	5	or (2)	qor (3) (4)		
11	Tu.	29.51	29.62	43	46	42	48	SW	SW	6	5	qbc	qor (3)		
12	W.	29.66	29.56	50	51	47	52	SW	SW	5	5	qbc	qor (3 (4)		
13	Th.	29.40	29.34	43	46	41	48	SW	SW	4	4	b	bc		
14	F.	29.70	29.80	39	44	38	45	W	NW	3	3	bc	bc		
15	S.	29.40	29.42	46	45	38	46	S	W	5	5	qor (2)	qbc		
16	Su.	29.44	29.34	39	42	35	43	S	SE	1	1	bc	or (3) (4		
17	M.	29.15	29.30	38	40	36	42	N	NW	4	5	bc	qo		
18	Tu.	29.80	29.85	37	41	36	42	NW	N	4	3	bcm	bc		
19	W.	29.98	29.94	42	48	32	40	S	S	2	2	od (2)	o		
20	Th.	29.60	29.64	51	53	48	54	SW	W	5	2	qbep (1)	bc		

December, 1852.—Mean height of the barometer = 29.695 inches; mean temperature = 46.5 degrees, being remarkably high; depth of rain fallen, = 1.97 inches.

TO CORRESPONDENTS

We are unavoidably obliged to postpone the continuation of our bottle papers to our next.

We understand that the *Australian* has arrived with a remarkably clean bottom, and is to receive three more coatings of Peacock and Buchan's composition.



THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

MARCH, 1853.

THE STEAM ROUTE FROM SINGAPORE TO SYDNEY, VIA TORRES STRAITS.—By G. W. Earle.

[The interest attached to Australian communication has induced us to prepare for our readers the following paper descriptive of the route from Singapore to Sydney. It has been abridged from several others on the same subject that have appeared already in the *Journal of the Indian Archipelago*, an excellent periodical, published at Singapore, from the pages of which we have occasionally obtained some useful information.—ED. N.M.]

The direct bearing and distance of Cape York from Singapore is E.b.S. $\frac{1}{2}$ S. 2,400 miles; but the divergence necessary to pass round the south end of Borneo, and to proceed only by the most frequented tracks through the Archipelago, increases the distance by about 100 miles. With the exception of the strait between Celebes and Salayer, on the northern track through the Java Sea, and the passages through the islands east of Madura on the southern track, there are no channels throughout the route so contracted as to render the navigation difficult either during night or day; and by properly timing the departure of a steamer from either terminus (a process with which steam navigators in the Indian Seas are familiar) it can be so arranged that the former may be passed during daylight. It should be observed that no weather is likely to be experienced throughout the route sufficiently boisterous to retard the speed of steamers of a large class, and thereby interfere materially with calculations made previous to starting.

About eight o'clock in the evening is the time best suited for the sailing of the vessel from Singapore, and as the steamers with the

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outward mails from Europe so time their departure from Penang as as to arrive at Singapore almost invariably at ten or eleven o'clock in the forenoon, this arrangement will afford ample time for transferring the mails and embarking passengers. From the outer roads the course is E.b.N. to

PEDRA BRANCA, (32 miles,) a detached rock, twenty-four feet in height above the level of the sea, situated nearly in the centre of the Eastern entrance of the Strait of Malacca, which has been the leading mark for vessels entering or leaving the strait for ages past. The main channel, which lies immediately to the north of the rock, is four miles wide in the narrowest part. A Lighthouse of dressed granite, seventy-five feet in height, has recently been erected on the summit of the rock, which is probably the most perfect of the kind that has ever been constructed to the eastward of the Cape of Good Hope. The light, which has been regularly illuminated since the 15th of October, 1851, is on the revolving principle, attaining its greatest brilliance once a minute. It is visible from the deck of a ship at a distance of fifteen miles, when it disappears below the horizon, but it may be seen much farther from the masthead, as its brilliancy is so great that the horizon is the only limit to its range. The reefs and dangers which beset the eastern entrance of the Strait of Malacca are all within the influence of the light as visible from a ship's deck. It has been named the "Horsburgh Lighthouse," as an appropriate tribute to the memory of one who laboured so indefatigably in facilitating the navigation of the neighbouring seas. Indeed the sum that formed the nucleus of the fund had been subscribed by the mercantile community in China some twenty years ago for the purpose of erecting a testimonial to the great Hydrographer. To the European mariner this structure will prove a guide of great value, by day as well as by night; but to the native traders from China and Siam, who navigate their junks by the compass alone, its advantages are incalculable. It may also be made to afford some sort of protection to the small junks which so often fall a prey to pirates when leaving the Straits; as a signal from the tower could direct a cruiser lying under Point Romania to any suspicious vessels that might make their appearance in the offing.

From Pedra Branca the course is about S.E.b.E. 315 miles, with soundings of twenty-five to thirty fathoms mud, to

THE CARIMATA GROUP, (347 miles,) a cluster of islands lying at the northern entrance of the strait between Borneo and Billiton, commonly called the Carimata Passage. Carimata, the principal island of the group, is fifteen miles in circumference, and consists of high land, with a peak near the centre, upwards of 2,000 feet in elevation, which is visible in clear weather at a distance of fifty miles. Souroutou is also high, but more level, with a hummock near the western extreme, which is visible at a distance of twenty-five to thirty miles. The strait which separates it from the S.W. end of Carimata is two miles and a half wide. I passed through this strait in 1834 and had regular soundings in eight or nine fathoms; but it has never been

fully surveyed, and as a steamer has the advantage over sailing vessels in being able to pursue a straight course, without having to make short cuts through the islands to avoid detention by contrary winds, there will never be any occasion to go out of the beaten track.

The Carimata Group has no permanent inhabitants, although the soil seems to be fertile. The people of Billiton and of the adjacent coasts of Borneo, resort to the islands in considerable numbers in April and May to fish for trepang and the shell-turtle; but they generally return to their homes before September.

The most frequented track through the Carimata Passage lies to the south of Souroutou, the channel between it and Ontario Reef being somewhat less than twenty miles in breadth. When the Peak on Carimata comes to bear N.N.W., a S.S.E. course, which will bring the Peak right astern, leads clear through the strait, about mid-channel between the Mancap shoals, which extend from the S.W. point of Borneo, and the reefs on the eastern side of the strait. The east island of the Montaran group may be seen in clear weather from the masthead while passing, but as the Peak of Carimata will be still visible, no other leading mark is necessary. The depth of water throughout the passage varies from fifteen to twenty fathoms mud.

After passing through the Carimata Passage, the navigator has the choice of two beaten tracks to the eastward, which unite at Pulo Kambing on the north coast of Timor, each of which has its peculiar advantages at certain seasons. During the prevalence of the easterly monsoon, from April to September inclusive, the southern track, along the north side of the islands east of Java, is to be preferred by steamers bound to the eastward, as during this season the current generally runs in that direction, after passing Bali, at the rate of between one and one and a half knots an hour. The northern track, by the Strait of Salayer, has the advantage in point of distance by about thirty miles; and as the westerly monsoon, which prevails from October to March, is often attended by squalls and heavy rain among the islands east of Java, while the northern track enjoys comparatively fine weather, the latter is likely to be preferred by steamers passing in either direction during that season.

Southern Track.

BAWIAN, 705 miles. Lubek of the old charts, an island about thirty miles in circumference, consisting of a central mass of hilly land about 2,000 feet in elevation, with plains of small extent at its base. The island is thickly inhabited, the population amounting to nearly 30,000, a portion of whom are employed in cultivating all the available land which the island affords, and in manufacturing chair and sleeping mats, siri-boxes, and rice-baskets, from the leaves of Pandanus palm, for exportation; while others are occupied in navigating their bulky prahus on trading voyages, or as day labourers in the plantations of Singapore, where they are known by the name of "Boyans," and are remarked for their industry, honesty, and stupidity, the latter quality, however, being rather attributable to their want of knowledge of Eu-

ropean modes of culture than to any natural deficiency of intellect. Altogether, they are a very singular people, and we could dilate upon their peculiarities at considerable length, were it not out of place in an essay of this description. A decidedly agricultural race, without timber for shipbuilding, and without exports save their simple mats and baskets, yet they import timber from Java to build large prahus, in which they carry the rattans of Borneo and the rice of Java to Singapore, and even make voyages beyond the Strait of Sunda to Engano, on the S.W. coast of Sumatra, to obtain the Rami fibre, which is highly prized by the natives of Java and Madura for making fishing nets. Madura and the islands to the eastward as far as Kangeang, are inhabited by people of the same origin, who are equally remarkable for industry, if not for enterprise. A Dutch Official resides at Singkapura, the capital, on the south side of the island.

If the steamer does not arrive abreast of Bawian until after dark, it will be best to steer for Pondy, off the east end of Madura, so as to pass through the channel between it and Gilion soon after daybreak. If, on the other hand, Bawian is passed before dark, the better course will be to steer for the N.W. end of Kangelang, which will afford a clear run during the night, and the channel between that island and Urk may be adopted. Both these passages are thoroughly well known, and are much frequented by shipping.

PONDY (807 miles) is about nine miles in circumference, and consists of a table land from 80 to 150 feet in elevation, with precipitous cliffs on the sea coast. The island is well inhabited, and abounds with refreshments, especially yams, sweet potatoes, and cattle; but it is not much frequented by European ships, the produce being for the most part carried by the natives in their own small prahus to Sourabaya, the eastern capital of Java.

GILION, or Gili Yang, (Gili being the name for island in the language of Madura,) is more than double the size of Pondy, and differs in appearance, as the hills slope gradually down to the sea shore. This island is also in a high state of cultivation, the entire face of the country being divided into small plantations by hedge rows or walls of loose stones; and being studded with farm houses, it presents a greater resemblance to an European landscape than any other island of the Archipelago. The passage between Pondy and Gili Yang is generally adopted by ships from Bali Strait bound to Singapore and China, and by the Dutch Company's ships bound to Banyu Wangi to fill up with coffee previous to sailing on their homeward voyage.

KANGELANG or Kangeang is visible from a ship's deck at a distance of thirty miles. The chanel between this island and Urk is ten miles wide, and perfectly safe with forty to fifty-three fathoms in midchannel. Care must be taken to avoid the Takat Shoal (The Brothers of the charts) a coral reef with three low sandbanks upon it; but as it is distant nearly twenty miles from Kangeang, only ordinary precautions are necessary.

Soon after passing through the islands east of Madura, the depth of the sea becomes unfathomable, and the route during the ensuing four

days will lie across the volcanic gorge which separates the continent of Asia from that of Australia. A course should now be steered to reach the parallel of 8° S. when abreast of the N.W. extreme of Sumbawa, from which point a due east course along the same parallel will lead clear to the Ombay passage where the track joins the northern route by the Strait of Salayer. The landmarks on this part of the route are highly conspicuous. The peak on the east end of Lombok is visible at an immense distance, and it is a useful mark for vessels passing along the islands east of Java. The northern shores of these islands are generally bold, and steep-to, with no soundings a mile off shore. The shoals laid down in some of the charts off the north coast of Lombok, marked *doubtful*, have been repeatedly sought for without success by Dutch cruisers, so that it may be safely said that they do not exist.

FLAT ISLAND, (1,018 miles,) where the east and west passage commences, in lat. $8^{\circ} 8' S.$, and long. $117^{\circ} 23' E.$, is visible from the deck at a distance of sixteen miles, but as the summit is nearly level, the island is not easily distinguished during the night. The Maria Reygersbergen shoal, which is laid down to the N.W. of Flat Island, in lat $7^{\circ} 56' S.$, was examined by a Dutch cruiser in 1825, and found to be in lat. $7^{\circ} 51' 30'$, so that the channel between it and Flat Island is about sixteen miles wide. The great mountain Timboro, on the north coast of Sumbawa, whose fearful eruption in 1815 has often been recorded, lies thirty-five miles to the eastward of Flat Island, and is a valuable land mark.

BRMA (1,108 miles) is a settlement of the Dutch, near the bottom of a deep bay on the north coast of Sumbawa, and may be considered as the capital of the island. Sandal-wood and bees' wax are the chief exports. The double peaked Volcanic Island which lies close to the north-east extreme of Sumbawa is a noted land mark. The northern peak is an active volcano.

RUSA LINGIT or Nusa Ringit (1,300 miles) is also an excellent mark, being high and steep-to. A reef is laid down about twenty miles to the N.W. of this island, called Bangalore Shoal, concerning which some doubts are expressed in *Horsburgh's Directory*. It is now pretty well ascertained that the *Bangalore* must have been wrecked on Angelica Shoal, which lies thirty miles to the north-east of Rusa Lingit; this island, and not Rusa Raji, having been the land set as bearing S.S.W. from the wreck.*

* Angelica Shoal. Lieutenant 't Hooft's squadron approached the southern edge of Angelica shoal or Passier Layer-an within one or half a mile, May 3rd, 1844. At noon H.M. sloop *Arend* had the reef bearing $N. 79^{\circ} E.$ to $N. 46^{\circ} W.$, Rusa Linguette peak $S. 31^{\circ} W.$, Rusa Radja peak $S. 49^{\circ} W.$, Flores head $S. 63^{\circ} E.$, lat. obs. $7^{\circ} 48' 30'' S.$, and had no soundings in 80 fathoms; but H.M. schooner *Janus* sounded 19 fathoms about half a mile to W.N.W. ward; the reef seemed to extend W.N.W. and E.S.E., about three miles, and appeared to be about half a mile broad near its extremes, which are nearly even with the water, but only two cables' length near the centre.

H.M. sloop *Haai* ran aground during the night, December 9th, 1846, near

IRON CAPE, (1,340 miles,) a high bold promontory, forming the north-east extremity of Flores, is another prominent landmark. The native name of this cape is Tanjong Bunga, or the Cape of Flowers. Hence, probably, the Portuguese name of Flores, which has been extended to the entire island. The east end of this island has been in possession of the Portuguese for upwards of 300 years, and many of the natives are Christians. The chief settlement is at Larantuka, in the Strait which separates Flores from Sodor and Adenara. This spot has been recommended as a coal depot, should such an establishment be necessary on the route.

Northern Track.

SALOMBO, or Nusa Lombo, (782 miles,) is about twenty miles in circumference, the greater portion consisting in a hill of singular form, with a broad, level summit. There are no permanent inhabitants, and the island has the repute of being a favourite resort of the Lanun pirates. It is therefore rarely visited by traders, European or native, but Dutch ships of war have reconnoitred it in the course of the present year, in search of a fleet of rovers which had been reported to have assembled there. After passing Salombo at a distance of ten miles to the south, a due east course leads up to point Layken, the S.W. extremity of Celebes. At a distance of 150 miles to the eastward of Salombo, the soundings increase to 60, 100, and 130 fathoms, but decrease again suddenly to 15 and 16 fathoms when to the south-east of the Hen and Chicks, after which they become variable, sometimes with no ground, until the Point of Celebes is approached. These overfalls are startling to strangers, but no real danger exists, as the track across the banks has been well explored.

In clear weather Lumpo 'Batang, or Bonthain Hill, an immense round-topped mountain, will be seen before the lower land; but it is

the S.E. extreme of this shoal, but, fortunately, was got off at the next spring, December 16th, after having thrown overboard her guns, drinkwater, &c. When aground she had one fathom near the bow, two fathoms near the rudder, and forty fathoms on the edge of the shoal, about two ships' lengths to N.N.E. ward; Iron head bore S. 63° 30' E., Ilimandiri peak S. 52° E., Lobetobie peak S. 32° E., Rusa Linguette peak S. 30° W., Rusa Radja (indistinctly seen) S.W. ¼ W., Kalao Toea N. 55° W., lat. obs. 7° 48' 30" S.

The reef appeared to extend about four miles, and is divided by two narrow channels, which traverse it in a north and south direction, and there are some dry rocks on the centre.

Bangalore or Jagers Reef, on which the ship *Bangalore* from Amboina bound to Allas Strait, was wrecked April 12th, 1802, is said to extend north and south about three miles, and in breadth two miles, dry at low tide on the western part, with rocks resembling prows under sail. From the wreck on the shoal, Flores bore from S.W. to E.S.E., an island forming like a dome S.S.W. distant seven or eight leagues, and an island (supposed to be Schiedam) N.W. distant eight or ten leagues. It is very probable that the ship had been lost on the west part of Angelica Shoal, as Rusa Linguette appears at a distance like a dome, and several ships having made a fruitless research for dangers to N.N.E. ward of Rusa Radja. — *Guide for the Islands and Straits to the Eastward of Java*, by Lieut. H. D. A. Smits, Dutch Navy.

usually enveloped in clouds. Tanakeke, a small island off the S.W. extreme of Celebes, is low and level, and may be seen at a distance of from fifteen to twenty miles. The channel between the island and the mainland affords excellent anchorage throughout the year in eight or nine fathoms. It was examined by H.M.S. *Chameleon* in December 1842, when on her way to and from Macassar. There are no permanent residents on the island, as the natives have some superstitions concerning it, but there is a large and flourishing village on the opposite mainland, called Topie Java, where the Dutch have a small establishment.

The scenery on the south coast of Celebes is of a very interesting character, the stately and massive Lumpo Batang forming a picturesque back ground to the cocoa-nut groves and sandy beaches of the sea-shore, studded here and there with neat little clusters of thatched houses. The soundings increase gradually from the shore, which may be approached with safety, as the water is sufficiently clear to show any danger that may exist.

BONTHAIN is a Dutch settlement situated on the sea-shore at the base of Lumpo Batang, and consists of a mud fort, with a small garrison of European and native troops; a large native village on a creek to the eastward of the fort; and the establishment of the "Posthouder," or civil functionary, to the west. We visited Bonthain in the *Chameleon* in December 1842, and were well received by the officers of the garrison, who afforded us every facility for making ourselves acquainted with the country. The vessel anchored in $6\frac{1}{2}$ fathoms, with the flagstaff N.E., and the extremes of Celebes E.b.S. $\frac{1}{4}$ S., and S.b.W. $\frac{1}{4}$ W. Bonthain is celebrated for the abundant supply it affords of European potatoes, rather a luxury in this part of the world. These are grown on the elevated lands of Lumpo Batang. There is a post road overland to Macassar, the southern capital of Celebes, distant fifty miles to the north-west.

BULU KUMBA, also a Dutch port, lies fifteen miles to the east of Bonthain. The anchorage here is preferable to that of Bonthain during the strength of the easterly monsoon, as it is more sheltered, but the latter has the advantage during the westerly monsoon.

When abreast of Bonthain Hill, the centre of the channel between Middle and South Islands in Salayer Strait should be brought to bear due east before steering for it, in order to pass to the north of Mansfield Bank, which is said to have only $3\frac{1}{2}$ fathoms water upon it in some places.

SALAYER STRAIT (1,139 miles). The most frequented track through the Strait lies between Middle and South Island, the channel being four miles wide, and clear of dangers. There are passages through the other channels, which, although sometimes used by the country vessels, have not been thoroughly explored. To the eastward of this Strait, and throughout the Moluccas, the westerly monsoon is the fine season, this part of the Archipelago being supplied with moisture by the rain-clouds brought from the Pacific by the easterly winds which prevail from April to September inclusive. Salayer is also the eastern

boundary of the Great Asiatic Bank in this latitude, for after passing through the Strait the sea becomes unfathomable, and continues so until the Great Australian Bank is reached.

When clear through the Strait, an east course may be continued until the high peak of Kambyna bears N.W., when S.E.b.E. leads direct to the passage between Ombay and Pulo Kambing. The only land near this part of the track is HAGEDIS or Lizard Island, (1,272 miles,) which is low, but well wooded, and is visible from the deck at a distance of 20 to 25 miles. It is chiefly remarkable for being overrun by the large-footed jungle fowl or *megapodius*, which forms its nest by scratching up the earth and dead leaves into heaps sometimes nine feet high and forty feet in circumference, in which its eggs are deposited to be hatched by the vegetable heat. The island is uninhabited, and is rarely visited. Even the Lanun pirates, who occupy temporarily most of the uninhabited islands, seem to avoid it, as it is out of the track of all native prahus, except those of the trepang fishers who resort to the north coast of Australia, and these are cruised for in the neighbourhood of Timor, where, owing to the contraction of the channel, they are picked up more readily.

The track from Hagedis to Pulo Kambing is not so much frequented as the tracks through Salayer Strait and along the islands east of Java, which are traversed almost daily by ships employed in the commerce of the Archipelago, or proceeding to and from China by the eastern passages. Nevertheless the track has been sufficiently well explored to remove all doubts as to the safety of the channel; but as the groups on either side have not been thoroughly explored, it will be well to keep the beaten track, which a steamer can easily do. In December, 1842, H.M.S. *Chameleon* followed this track, when on her passage from Macassar to Port Essington. The westerly monsoon, which is supposed to attain its full strength at this time of the year, utterly failed, and the winds were light and variable up to the time of her arrival at Port Essington, in the end of January. The passage from Salayer Strait to Pulo Kambing occupied ten days; indeed her progress was so slow, that a favourable opportunity was afforded for seeing any dangers that might lie within the range of sight from the mast-head. Hagedis, which was passed at a distance of twenty miles to the south-east, was the only object seen.

PULO KAMBING, or Passage Island, (1,520 miles southern track, 1,490 miles northern track,) is one of the most noted landmarks in this part of the world, being situated at a point where two frequented tracks cross each other. Ships passing between the Cape of Good Hope and China by the eastern passages, enter or leave the Strait of Timor by the channel between Kambing and Ombay, and vessels from Torres Strait, if bound to Macassar Strait, or along the islands east of Java, enter the inner seas of the Archipelago by the same channel. The island is about 25 miles in circumference, with steep wall-like sides, crowned by a peak about 2,500 feet high. The precipices in some places rise abruptly from the sea, but elsewhere they are fringed at the base by narrow beaches of sand. There is no anchorage near

the island owing to the depth of the sea, which is sometimes unfathomable at a distance of only two ships' length from the shore. The inhabitants are numerous, the face of the country being studded with plantations of maize and yams, and groves of the *tuah* or toddy-palm. Singularly enough, although ships pass near the island almost daily, and the chief settlement of the Portuguese, who have occupied the neighbouring coast of Timor during three centuries, is only fifteen miles distant, the inhabitants hold no intercourse with Europeans, or even with the native traders. The passes by which they descend to the sea shore to obtain shell-fish are of such a nature, that by rolling large stones from the summits of the cliffs, which are always kept in readiness, they can effectually prevent intrusion. In 1838 the writer had an interview with a party of the natives at the house of the Capitan China at Dilli, who occasionally held intercourse with them, but they scrupulously avoided the neighbourhood of the fort, and no persuasion could induce them to visit the English war-brig which was lying in the harbour. They bore a close resemblance to the natives of Wetta and the Serwatty Islands, and the small prahu in which they came was identical in every particular with those of the fair races of the Moluccas. When it is considered that these seas are swept annually by the Lanun and Bonarati pirates, and that the slave trade is still rife in the neighbouring settlements of the Portuguese, their determination to avoid intercourse with outside nations shows a tact and strength of purpose which these eastern races do not generally display. Their exclusiveness seems to have relaxed somewhat lately, for in 1839 Capt. Watson, of the British schooner *Essington*, succeeded in opening a friendly intercourse during a short visit to the island, but not without great delay and circumspection; and in 1844 Lieut. 't Hooft, when in command of a Dutch flotilla cruising for pirates, established communication with a village situated on the edge of the cliffs of the west coast. In the first instance the inhabitants tried to crush their visitors by rolling stones over the cliff, but finding that their intentions were not hostile the islanders desisted, and a friendly intercourse was eventually established.

The channel between Kambing and Ombay is eighteen miles, and that between Kambing and Babi, eight miles wide. Both are clear of danger, and may be adopted according to the convenience of the navigator.

DILLI, the capital of the Portuguese possessions in Timor and Solor, lies fifteen miles south of Kambing. It is a reef harbour, easy of access, perfectly sheltered, and exceedingly well adapted for a coal depot, should such be required. There are several other settlements along the north coast of Timor, but as the houses are small they can only be distinguished when close in with the land.

The channel between Wetta and Timor is wide, and perfectly clear of danger. There are small fringing reefs on the shores of both islands, but generally the sea is unfathomable at a distance of a quarter of a mile from the coast. The land on both sides is exceedingly high, and as there is generally a dense haze near the surface of the sea during

the heat of the day, its outline is often more clearly distinguishable during the night.

PULO JAKI (1,513 miles southern track, 1,553 miles northern track,) is low and level, with a fringing reef. The strait between the island and the East Point of Timor, is narrow, but safe, with anchorage under the Timor shore. Some Bugis prahus are generally to be seen here during the westerly monsoon, as it is a small trading station, and the vessels employed in the Tripang fishery on the north coast of Australia generally call here to fill up their fresh water. This spot will probably be selected as a depot for fuel when establishments of this description come to be formed in convenient situations throughout the Archipelago, which must happen when steam communication becomes more extended. It is within the Portuguese territory, although no establishment has ever been formed there, nor do the traders from Delli extend their voyages so far along the coast. A nation possessed of a greater spirit of commercial enterprise would not have allowed a position so admirably adapted for a trading station to remain long unoccupied.*

Pulo Jaki is uninhabited, the natives preferring the uplands of the adjacent island of Timor, where the population is considerable, and is chiefly employed in cultivation. The island derives its name from the troops of monkeys with which it is overrun, *Jaki* being the term for monkey in the Malayan dialect of the Moluccas. It is also appropriate, as this is the eastern limit of their migration, no variety of the tribe existing in a wild state among the islands to the eastward.

KISSA (the channel between which and the east end of Timor is 18 miles wide) is 16 miles in circumference and thickly inhabited, the population in 1838 amounting to about 8,000, nearly a third of whom were Christians of the Dutch Reformed Church. Letti, which lies 25 miles to the north eastward of Pulo Jaki, is more extensive but less densely peopled. Refreshments are to be obtained at both these islands, but more especially at Kissa, where the inhabitants have long held intercourse with the whale ships frequenting these seas, which they supply with large quantities of pigs, poultry, yams, and sweet potatoes.

After leaving Timor, no land will be seen until Torres Strait is reached, unless it be deemed advisable to make Cape Wessel, a precaution by no means necessary, as the soundings decrease gradually as the Strait is approached, thus affording sufficient warning to the navigator; while the latitude can always be obtained at least once in the

* Intelligence has recently been received from Timor, that Senior Lopes de Lima, a distinguished officer who was formerly Governor General of Portuguese India, had arrived at Dilli with full powers to reorganize the establishments in that quarter. The Government has already issued invitations to Steam Companies to make Dilli a depot on the route between Singapore and Australia, and offers the following advantages:—Exemption from Harbour Dues and Pilotage Fees, and from Export Duties on supplies required by the steamers; and the government engages to house the coals and furnish cargo boats free of charge for supplying the steamers with fuel and fresh water.

twenty-four hours, for it has been generally remarked that during the westerly monsoon, (the only season in which the sun is likely to be obscured,) when the day has been overcast, the night has invariably been clear, or *vice versâ*. For the first 200 miles after leaving Timor the sea continues unfathomable, but soon after attaining this distance, soundings will be struck in 130 to 150 fathoms on the Great Australian Bank, which decrease gradually to nine fathoms near the entrance of Endeavour Strait. There are several coral patches to the south of the track, about the parallel of 10° , but none of these have less than seven fathoms water upon them, with the exception of the Money Bank, which was discovered by the ship *William Money* in 1841, and was afterwards passed over by several of the ships employed in conveying H.M. 80th regiment to India in 1844. The least depth on the bank is $4\frac{1}{2}$ fathoms. Victoria Rock, the only danger north of the track until Torres Strait is approached, was discovered by a steamer of that name while on her voyage from Sydney to Singapore in 1843. The boat was sent to examine it, and only six feet water was found on the shallowest part. On approaching Torres Strait, it will be well to get at once into the parallel of the western entrance of Endeavour Strait, ($10^{\circ} 45'$ to $10^{\circ} 50'$ S.,) in order to avoid some dangers said to exist to the eastward of Booby Island, called the Aurora and Proudfoot shoals. These are laid down respectively in long. $141^{\circ} 7'$ and $141^{\circ} 33'$ E. in the parallel of $10^{\circ} 33'$ S., but on what authority is not distinctly known.

RED WALLIS, (2,493 miles southern track, 2,463 miles northern track,) one of the land marks for the western entrance of Endeavour Strait, is a rocky island, about a mile in circumference, and very scantily clothed with vegetation, the red stone and earth of which it consists giving it the appearance from which it derives its name. Woody Wallis, which lies about a mile and a half to the south, is somewhat larger, and is covered with stunted trees. These islands are visible from a ship's deck at a distance of fifteen miles. From Red Wallis to the site of the proposed depot for fuel at Port Albany, the distance is thirty-seven miles, which will make the entire distance from Singapore to Cape York 2,500 miles by the northern track through the Strait of Salayer, and 2,530 miles by the southern track along the islands east of Java.

(To be Concluded in our next.)

WRECK OF THE DODDINGTON ON THE SOUTHERN COAST OF AFRICA.

Concluded from page 89.

The carpenter and smith now continued working on the vessel, till the fourth Sunday, the 29th of September, and the people were busy in securing what was from time to time thrown up by the wreck, particularly cordage and canvas for rigging. They likewise recovered some casks of fresh water, which they were solicitous to keep for sea

store, as their escape depended no less on fresh water than on the vessel itself, which was to carry them.

This day, the officers, after prayers, a duty regularly and publicly performed every Sunday, discovered that the chest of treasure had been broke open, and the greater part of it taken away and concealed. It may probably appear strange that those whom danger had made religious should at the same time be guilty of theft; but it should here be remembered, that as soon as a ship is lost, the sailors lose their pay, and the captain his command; and whatever is cast ashore from the wreck, is considered by the sailors in the light of common property. The men, therefore, who ventured secretly to take what they deemed their share of this treasure, were not conscious of acting dishonestly, but only designed to secure what they dreaded the officers would monopolize, and thus prevent disputes, which, in their circumstances, might produce fatal effects. The officers, however, on discovering what had been done, and finding that none would own knowing anything about it, proposed to write the form of an oath, and administer it separately to every individual, themselves taking it first. But to this the majority immediately objected, for though they might not suppose themselves guilty of a crime by taking the treasure, they were aware that it would not only be immoral but impious to swear they had not taken it. As the minority were not in a condition to enforce their proposal, the matter was suffered to rest without further inquiry or remonstrance.

A fowling-piece was found on the 6th of October, which was a joyful acquisition, and although the barrel was much beat, it was soon made serviceable by the carpenter, and used with great success in shooting the birds. There was no other method before of taking them, but by knocking them down with a stick.

On Friday the 11th of October, the gannets, which had of late forsaken the rock, were observed again hovering about it in great numbers. The shipwrecked people were therefore in hopes that they would settle to lay their eggs, and in this they were not disappointed. They were constantly supplied with great plenty of eggs until the beginning of January, when the laying season terminated.

Mr. Cottis, Mr. Webb, the third mate, and two others, once more ventured out on a raft on the 20th of October, but the wind springing up very fresh, the raft broke loose, and drove them to the other side of the rocks. The sea running high and the wind still increasing, it was impossible for the boat to put out; therefore they were obliged to remain all night among the seals on the rocks, without any shelter or refreshment. But in this situation, however dreadful, they received great comfort from reflecting how much more dangerous it would have been had they, instead of being carried to the rocks, been driven out to sea. The wind did not abate before next day at noon, when the boat ventured off: but as the waves still ran high, it could bring in no more than two at a time, and the float was left behind them.

Some rainy weather now prevailed, which was very acceptable, as they contrived to save some of the water for sea store; but they were

still in want of bread, and had lived many days on short allowance. As a last resource, they thought of building an oven, for though they had no bread they had some barrels of flour. In this attempt they succeeded beyond expectation, and were enabled to convert their flour into tolerable biscuit.

At length the biscuit also was near exhausted, and their allowance of it restricted to a few ounces per day, without brandy, of which only a small quantity remained, and this was preserved inviolable for the use of the carpenter. Water likewise ran short, and a pint a day was all their allowance. However, their health still remained in a great measure entire; and on the 16th of February 1756, they launched their vessel, which they called the *Happy Deliverance*. Next day, their little pittance of stores was got on board, and on the 18th they set sail from the rock, which, at parting, they named Bird Island, and where they had lived just seven months.

All their provisions consisted of six casks of water, two live hogs, a firkin of butter, about four pounds of biscuit for each man, and ten days subsistence of salt provisions, in bad condition, at the rate of two ounces a day per man.

At one in the afternoon of the 18th the adventurers weighed anchor, and with a light breeze from the west, set sail for the river St. Lucia, on the coast of Natal. Fortune, however, did not cease to persecute them; for five days they met nothing but adversity; and during twenty-five in succession, their provisions were almost exhausted, and currents, running at the rate of a mile and a half an hour, carried them so far out of their course, that a favourable wind was of little avail. Their state became more and more deplorable, and they at length despaired of reaching the river St. Lucia; as the currents ran strong to the west, and easterly winds almost always prevailed, they resolved to change their course, and attempt to make the Cape of Good Hope. Thus on the 2nd of March they bore away to the west.

Next day the weather proved hazy, and they apprehended that heavy westerly gales would ensue. Their conjectures were verified, for the wind increased to prodigious violence, until the 4th of the month, when they endeavoured to lie to, but shipped such heavy seas that they dreaded lest every surge would dash their slight vessel to pieces; thus they were still obliged to be cautious, and bear away under a topsail. The squalls were at times so violent that the sea appeared like cliffs above the stern; and in this alarming manner were they hurried along by furious storms until the morning of the 5th, when fine weather ensued.

A calm prevailed on the 7th, and they cast anchor about three quarters of a mile from a shore, where they soon observed several of the natives, who came down from the mountains. Encouraged by this sight, they attempted to land; and Thomas Arnold, the black servant, accompanied by two seamen, embarked in the boat, carrying a string of amber beads as a present to the Indians. Arnold leapt out of the boat when near the beach, and swam ashore, while the boat returned to the vessel, which was standing on at some distance

on at some distance in search of a place where the people might safely disembark. Attended by about forty of the natives, Arnold followed the vessel to a suitable place, and the boat was sent to take him off. He reported that on his arrival, the savages at first appeared very reserved, but, at length, having all sat down, they made him sit down among them. He then presented the string of beads to the oldest, who received it with marks of consideration. On making signs that he wanted food, they supplied him with Indian corn, fruit, and water, in a calabash. He added that they had sent into the country for sheep, oxen, and other necessaries, whence he was desirous of returning to them; but the wind continuing westerly, the boat only was sent ashore, which soon returned with food sufficient to serve during four days.

The vessel coasted along until the 10th of March, when the wind changed to the east, and the people then cast anchor in twelve fathoms, half a mile from the shore. Several Indians came down to the beach in the evening, and by signs invited them to land, which they considered impracticable. Next morning the natives renewed their invitation by driving before them a great many goats and bullocks. This was a pleasing spectacle to men almost famished with hunger; however, they still judged it impossible to land. In a condition so tantalising they continued until the 14th, when two men requested to be sent ashore at all risks, saying it was better to go and live among the savages than to perish of hunger on board, where for two days they had not ate a morsel. They were therefore sent off in the boat, and with great difficulty reached the shore. The wind fell the same evening, and seemed tending to the west, which occasioned much uneasiness to those on board, on account of their two comrades ashore, for they dreaded that it might blow too hard for them to remain at anchor until morning. Thus frequent signals were made through the night by showing lights, in hopes of bringing them down to the beach, that they might get off before the surf rose too high. No intelligence was obtained of them until six in the morning, but it was then too late to get them on board from the violence of the wind and height of the surf. Trusting to find some more favourable place whence to take them in, signals were made that they should proceed along the shore, while the bark followed the same direction. They had not advanced two leagues, when a very convenient spot was found, opposite to which the vessel, working close to the shore, anchored in five fathoms water. The boat was then sent out with four men, two of whom were employed in recovering those ashore, and the other two in sounding the mouth of a river, where they were in great hopes of finding water enough for the vessel to pass over the bar. About three hours afterwards the two men were seen with the four belonging to the boat, but on account of the height of the surf they durst not embark.

All those on board spent the night in the greatest uneasiness; at break of day they weighed anchor and stood still nearer the shore; but observing that their companions were still afraid to venture, they

made them understand that if they did not immediately return, or show that it was possible to enter the river, they should be obliged to abandon them, as provisions began to fail and there was no appearance of any here. These menaces had the desired effect, and two of the men braved the extreme violence of the surf in the boat. Having gained the bark they said that they had been well received by the natives, who gave them beef and fish to eat and supplied them with milk; and then conducted them over the mountains from the place where they landed, to that where they found their companions.

An easterly wind rendered it dangerous to remain in this spot, but was favourable for their entering the river, where sufficient water was said to be above the bar; accordingly they weighed anchor at eleven in the forenoon, and advanced, the boat always being before sounding. But when close to the bar those ashore made signals to desist; which they did, and anchored. The boat returning, informed them that there were only eight feet of water on the bar, and that it was necessary to wait the flowing of the tide in order to pass it. At two in the afternoon, they once more hoisted sail, easily entered the river, and cast anchor in two fathoms and a half.

Their first consideration was how to traffic with the natives for provisions and other necessaries, having never heard of any commerce on this coast. The consultation did not continue long, for they had but little to exchange; their whole stock consisting of brass buttons, nails, and iron bolts, copper hoops, of which they made rings, such as are called bangles by the Indians and worn as bracelets on the legs and arms. These they carried on shore, and showing them to the natives, made signs, by imitating the lowing of cattle and bleating of sheep, that they wished these animals in exchange for them. The Indians quickly comprehended their meaning, and speedily brought two small oxen, which were purchased for a pound of copper and three or four brass buttons. Each of the oxen weighed about five or six hundred pounds, and the flesh proved excellent. The Indians seemed well content with their bargain, and promised to bring more cattle; they likewise sold a great quantity of milk at a very low rate, demanding but a single button for two or three gallons. They also sold at the same rate a quantity of small grain, resembling Guinea corn, which the strangers, bruising between two stones, made into a kind of bread, which they baked on hot cinders. This they were in hopes to preserve until they could procure what was of better quality, but here they were disappointed, for in three days it became mouldy. Nevertheless, the grain was found salutary food when boiled along with meat.

In this place they remained about fifteen days, and frequently penetrated the country ten or twelve miles, to the dwellings of the natives, who lived in huts covered with rushes, which formed a kind of thatch. They were extremely clean within, and the natives frequently invited their visitors to spend the night there, during their residence on the coast. They always testified great friendship towards the English, often ate along with them, and seemed to enjoy the European method of preparing food. But they particularly prized the entrails of ani-

mals, which they commonly ate raw after giving them a shake. They also took much pleasure in going on board the vessel, and repeatedly came up the river in the boat along with the English, uniformly displaying a very sociable disposition. They showed no jealousy, and left their sisters and daughters whole days with the strangers, while rambling about the woods.

Hunting is the principal occupation of these savages; their only weapons are lances, and two short clubs, with a large knob at the end, which are used to kill an animal when it is wounded by the lance. The river is full of manatics, or sea-cows, which commonly come to the banks and pasture in the night; they are quite harmless, and the natives frequently kill them for food while asleep.

They also had a few elephants' tusks, which they would have given for a mere trifle, but the English had no room for them in the vessel. These savages wore few clothes in the daytime, but at night covered themselves with a bullock's hide, which was well dried, and which they had the art of rendering very pliant. Their chief ornaments were a piece of the tail of an ox, which hung from the rump down to their heels, and was adorned with small sea-shells. They also wore pieces of skin round the knees, ancles, and arms. Their hair was anointed with abundance of fat or grease mixed with a kind of red earth, and the whole body was likewise anointed. Their activity and address were so great in throwing their lances, that at the distance of thirty or forty yards they could strike an ear of corn set up as a mark. They practised another exercise, particularly at meeting each other, or on separation, which consisted in dancing or leaping in a circle, and uttering the most hideous cries, sometimes like hounding of dogs, and sometimes like the grunting of hogs, all the while actively wielding their lances.

The English were extremely surprised to find among these savages, who were quite black with woolly hair, a youth, apparently twelve or fourteen years of age, perfectly white, with European features, fine light hair, and altogether different from the natives of this country. They remarked that he was treated as a servant, that the savages sent him their errands, and sometimes did not allow him to eat with them, but that he waited until the end of their repast before making his own. They seemed, at the same time, to live in great friendship with each other, and when they had any thing to eat, though in ever so small a quantity, the owner shared it equally with all present, and appeared to enjoy much satisfaction in doing so.

After the English had thus, by the intervention of Providence, collected a very considerable quantity of provisions, they weighed anchor at five in the morning of the 29th, and stood over the bar. But there a dangerous surf was running, which almost broke into the vessel, and becalming their sail, put them in great hazard of being shipwrecked on the rocks. At length they had the good fortune to get over the bar, and sailed for the River St. Lucia, where they arrived on the 6th of April, without any remarkable occurrence.

Having landed, they were soon convinced that those with whom

they were to traffic, were very different from the savages they had left. On signifying that they wished to trade with them the Indians intimated that they wanted no commodity but a kind of small beads; nevertheless, when shown copper buttons, they speedily brought several bullocks, fowls, potatoes, gourds, and some other provisions. No bullocks could be purchased, because the natives demanded copper rings large enough for collars in exchange; but they sold fowls and gourds at a low price, giving five or six of the former, of a large size, for a bit of linen, not worth above fourpence in England.

Here the English remained three weeks, occupying themselves in traversing the country, and in seeing the savages' mode of life, as also in endeavouring to obtain the articles they required. These Indians put the highest value on copper; and on being shown the handle of an old box, offered two bullocks for it; the bargain was speedily concluded, and they drove them to the bark. The natives appeared very proud and haughty, and quite different in the recommendatory manners that characterized those whom the English had lately left. The latter discovered that the principal chief, whom they paid for being accommodated all night in one of his huts, had stolen some pieces of iron, which they had brought in a basket, to discharge their expenses while ashore. Though remaining two or three days in the interior, the natives could never be prevailed on to eat along with their visitors. They differed also from the former Indians in the method of preparing their food, which was here done with greater neatness; they were likewise more cleanly in their persons, and bathed every morning, apparently as an act of devotion, nothing of which was observed among the others. They wore no kind of ornament similar to them; their chief pride seemed to be to keep their hair in great order. They watched strictly over their women. Their arms, however, resembled those of the others, as did their diversions. Men were seen among them who came from Delagoa, trading in ambergrease and elephants' tusks.

A favourable breeze springing up from the west, attended with good weather, the English weighed anchor, at seven in the morning of the 18th of May, and set sail. About a quarter of an hour before high water, when almost on a bar crossing the river, some of them were so imprudent as to lower the sail, and cast anchor on a sand bank. Nine men then got into the boat and rowed towards the shore, declaring they would rather run all risks among the savages, than be drowned to a certainty in passing the bar. Those on board hesitated whether to attempt the passage, or return; but the wind and tide driving the vessel out of the river, gave every reason to believe that if the tide fell she would strike the bar and be dashed to pieces. At length they weighed anchor, trusting to save the vessel and preserve their lives, and were soon carried among the breakers. Here they were in the most alarming situation, there were only eight feet of water, while the vessel drew five. After remaining half an hour in the jaws of death, the surface of the sea suddenly became smooth as glass, and they left the River St. Lucia in safety. Those ashore, most of whom had no-

thing but a shirt and a pair of trousers, followed along the coast on foot.

On the 20th of the month the English made Delagoa River, where they cast anchor in nine fathoms. There they found the *Rose*, a snow, commanded by Captain Chandler, in which some of them requested a passage to Bombay. Having remained three weeks in this place, three of their comrades, who had gone ashore at St. Lucia, rejoined them in a small canoe, and said that their six companions were on the other side of Delagoa Bay, from whence they waited an opportunity of coming over.

The officers, judging themselves now in the most convenient situation for securing the treasure, packets, and other effects of the *Doddington*, sent four or five men ashore, and two on board the snow. Mr. Jones then came in Captain Chandler's pinnace, well manned and armed, to the vessel, and carried all the money, plate, and letters, he could find in her to the snow, that they might be given up on her arrival at Madras. The people remaining in the vessel, apprehending a second visit, which might have been extremely disagreeable, took an opportunity of escaping during the night.

The *Rose* sailed for Madagascar on the 25th of May, for the purpose of completing her cargo, as, in consequence of a misunderstanding between Captain Chandler and the natives, they had drove away above a hundred head of cattle after having sold them to him. On the same day a vessel came in sight, which, on approaching, proved to be the bark. Two of the people, one of whom was the carpenter, coming on board the snow, persuaded Captain Chandler to purchase their little vessel for five hundred rupees, and he gave his note for that sum. They told him that they had recovered the other six men, who had gone ashore at St. Lucia, but three of that party were already dead, and two extremely ill, from the fatigues they had suffered in travelling by land. These also died a few days afterwards. Captain Chandler then continued his course to Madagascar, in company with the bark, and, after a voyage of twenty-two days, discovered the island, where he anchored, off Morondova, on the 14th of June. The *Caernarvon*, commanded by Norton Hutchinson, bound from Europe for China, likewise arrived there on the 16th.

The packets and treasure being destined for Madras, they were put on board this vessel, which quitted Morondova on the 1st of July, and, having arrived, a month afterwards, at that government, the whole were delivered according to their original destination.

REVIEW OF THE HISTORY AND PROGRESS OF THE GENERAL SYSTEM
OF LIGHTNING CONDUCTORS EMPLOYED IN THE ROYAL NAVY.

Concluded from vol *xxi*, p. 472.

57. In concluding this review of the most effectual means of guarding the Royal Navy against the electrical discharge, we have to call attention to certain phenomena of singular interest, observed in numerous instances in which H.M. ships fitted with the general system of conductors have been struck by lightning. The conductors on the masts, and even in the hull, have been frequently rendered luminous, a phenomenon occasionally described as "Lightning running down the conductor." The mast itself, also, together with the mass of the vessel, has been said to have become enveloped in a blaze of electrical fire; and the discharge has sometimes appeared to explode like a shell or rocket, casting forth sparks of electricity in all directions, but without any ill effects. In some instances the explosion has been attended by a loud whizzing noise as if the safety valve of a steam boiler had been raised; in others, the chain cables and other metallic bodies have been observed to emit electrical sparks. The peculiar ringing sound and crash of the thunder has been, in some instances, assimilated with the sound of cannon fired close at the ear, filling the surrounding air with a sulphurous odour.

58. Now, it is impossible not to be struck with the concurrence of the several observers of such phenomena, nor can we fail to be impressed with the importance of the fact that the statements have been made by officers in the public service of unquestionable honour, quite unconnected with each other, uninfluenced by any personal interest, and at intervals of many years; their statements, also, are in plain intelligible language, describing what they witnessed according to the common acceptance of the terms they use. There cannot be the least doubt, therefore of the facts; nor of the ships having been struck by lightning and effectually preserved from damage in the way they describe; and it therefore only remains to apply certain known elementary principles of electricity in explanation of the phenomena observed.

59. Considering the marvellous rapidity of the progress of the electrical discharge, that it moves through good conducting matter at the rate of 576,000 miles in a second of time, the idea of seeing a stroke of lightning run down a lightning conductor must necessarily appear to be an absurdity, and, doubtless, the expression, taken in this sense, is perfectly fallacious; still the phenomenon itself demands explanation in its relation to the great practical purpose of the preservation of a ship from the terribly destructive agency of lightning.

The solution of this and the other phenomena just described is to be sought for in the elementary laws of electrical accumulation and discharge; and they will be found in complete accordance with these laws, and such as might be reasonably expected.

60. In explaining these phenomena we have to observe, that the return

of a charged system of electrics and conductors to a normal or quiescent state constitutes electrical discharge. Now this system of electrics and conductors in the case of a stroke of lightning is made up of a certain portion of the surface of the earth or sea, of large masses of vapour, under the form of cloud, directly opposed to it, and of the intervening air; the former being conductors the latter an electrical or non-conducting body: and it is under this arrangement that from certain natural causes a large electrical accumulation obtains, and the system becomes charged with electricity, in which case the mass of the air extending to the earth's surface is in a state of excitation, and it can only return to its normal or quiescent state by a redistribution of the free electricity; now this return may be effected in various ways, giving rise to very different effects and constituting different kinds of electrical discharge.

The most palpable and violent form of electrical discharge is what Faraday has very sagaciously termed disruptive discharge. In this case what he calls the electrical polarization or tension of the molecules being raised to a degree past all endurance, the neutralizing electrical forces recombine with a sort of convulsive effort, causing a sudden extrication of light and heat, a sharp concussion through the particles of the air, and an almost irresistible expansive power. Such is virtually what we call thunder and lightning. This form of disruption, however, is not the only form in which the charged system can return to its normal or quiescent state, the same result may be brought about by a less convulsive effort, in fact by a more gradual and successive series of impulses, in the course of which a very sensible portion of time may elapse. If, for example, we continue to diminish the extent of surface, originating a disruptive spark by allowing a point to project from it into the air, then very curious results ensue: the charged electrical particles begin as it were to gradually unload themselves, stars and brushes of light appear on the point, and if the particles be induced to unload themselves upon a small rounded or fair surface, a sort of luminous glow or phosphorescence will be often observed of a beautiful and variable form. Faraday considers both these phenomena as variations of disruptive discharge, he has termed the one brush discharge; the other glow discharge; both are easily produced by means of our common electrical apparatus.

61. In the case of lightning all these forms of discharge may obtain, and it is here to be especially observed, that one of the great operations of a pointed lightning conductor is either the mitigation of the disruptive shock, or, otherwise, the reduction of it to a less convulsive effort. Suppose, for example, we should attempt to discharge a very powerful electrical battery by presenting to it a continuous metallic line of conduction terminating in a pointed wire. Then, as is well known, a large portion of the charge will run off as it were by brush or glow discharge before the convulsive, or what we have termed disruptive shock ensues, and it will pass off as a progressive current, occupying a sensible portion of time. Now it has been very beautifully shown by Professor Henry, of Princeton, U.S., that when a

quantity of free electricity is thrown by impulses upon a long conducting wire the whole surface is rendered luminous; the phosphorescence, however, is perfectly harmless, you may cast the most inflammable of the common percussion powders upon the wire without any ignition of it. This is what virtually occurs in the action of an efficient lightning conductor in parrying the disruptive shock of an intense electrical accumulation, and furnishes a satisfactory and elegant solution of the phenomena witnessed by so many officers of the Royal Navy on the occasions of lightning having fallen on their respective ships, and which they have described as "Lightning passing down the Conductors."

62. In fact, before the disruptive or convulsive effect ensues, the conductor commences its operation in producing brush or glow discharge, the excited particles of the air begin to rapidly unload themselves, and the violence of the succeeding shock is anticipated or greatly mitigated by a transmission of a very considerable portion of the charge in a progressive current; at this instant the metal may glow with a phosphorescent light, and if the conductor can in this transmitting effort, by brush and glow discharge, keep pace with the growing intensity of the accumulation, the disruptive or explosive discharge may be avoided altogether. This, however, it cannot always do, so that a burst, as it were, of the whole charge of the air finally takes place upon the conductor, which is now exposed to the condensed spark produced by the remaining portion of the accumulation, as being the channel upon the earth's surface, through which the forces return to their normal or quiescent state. It will be here immediately perceived that the previous or brush action, occupying a sensible portion of time, may be so closely followed by the full disruptive effect as to cause the two to be considered as one action, and hence the notion that lightning is seen to run down the conductor.

63. In the case of the *Ganges*, 84, struck by lightning in the Piræus, in January, 1850, both brush and glow discharge were present, according to the accounts given. "The stream continued to descend the mast for forty minutes." One of the observers states, in the case of the *Minden*, 74, struck by lightning in a furious thunderstorm at Hong Kong, in August, 1849, that he saw, "The electric fluid fall on the main-mast and run off in a continuous stream of fire quite frightful to behold." The notices of such phenomena are very numerous and important.

The *Ranger*, 18, was exposed, in December, 1850, on the coast of Africa, to a heavy thunderstorm of two hours duration, "The ship during this time was enveloped in electrical discharges, one of the flashes was observed to pass by the conductor on the beam over the First Lieutenant's cabin, who was at the time sick in bed, the whole surface of the metal was luminous. In this storm, "severe strokes of lightning fell on both the fore and main masts," but no damage ensued.

The phenomenon of a conductor becoming luminous at the time of a thunder stroke is by no means of modern date; it was witnessed so long since as the year 1777; a vivid flash of lightning fell on the

Tower of Sienna, when several persons saw on the conductors "a long and regular train of light."*

64. The knowledge we now possess of the nature of electrical action enables us to explain satisfactorily many phenomena, which, although placed upon record by unimpeachable authority, have still been generally considered as so tinctured with the marvellous as to warrant a certain incredulity concerning them. The following instance, supported as it is by a similar and comparatively recent case, is such as to excite great scientific interest.

On the 22nd of March, 1749, a paper was read at the Royal Society relative to an observation made by Mr. Chambers on board the *Montagu*, 74, then under the command of Admiral Chalmers. It appears that on the 4th of November of the preceding year, Mr. Chalmers was in the act of making an observation on the quarter-deck, about 10 minutes before 12 A.M., when one of the quartermasters directed his attention to a huge ball of blue fire rolling down, apparently from to windward, on the surface of the sea, and then about three miles distant. It came down upon the ship so fast that before they could shorten sail the ball rose perpendicularly with a terrific explosion about fifty yards from the main chains, shivered the maintopmast in pieces, and rent the mainmast to the keel. It is quite evident that in this case the glow discharge was being induced upon the surface of the sea by heavy thunderclouds moving along in the direction of the wind, and which gave rise to the observed movement of the glow, described as a "huge ball of fire." The ship was at the time under reefed topsails and courses, which would correspond with a velocity for the wind of about thirty miles in the hour, being about the rate at which the ball would move toward the ship from to windward. When, however, the clouds approached the ship then, as is evident, the striking or disruptive distance would become raised from the surface of the sea up to the height of the ship's spars, which would be something considerable, and then we should expect in such case the usual phenomena of a stroke of lightning. There is not the least question or difficulty whatever relative to this account, given by Mr. Chalmers; it being, with our present knowledge of electricity, perfectly intelligible. The following analagous observation was obligingly communicated to the author of these papers, in September, 1843, by the Rev. E. Budge, vicar of Helson, in Cornwall, and which, taken in connection with the preceding account, is peculiarly interesting. "On the night of the 2nd of August 1843, an American vessel was at anchor in Helford Harbour, at about half a mile from the shore. About 9h. P.M. some of the boatmen belonging to the service of the Customs, and then on deck, observed a light moving down the river; presently it passed the vessel, going in the direction of the wind, then blowing off the land from the north. As the light approached they describe it as being round and brilliant, and, apparently, about the size of a tar barrel on fire. It passed the vessel at about 100 yards or more distant and

* Tilloch's Magazine, vol. viii.

went clear out to sea, its rate being about nine knots an hour. Sometimes this light seemed to divide into two or three, became single again, and finally looked like the light of a steamer as it vanished in the sea."

Here then we have another instance of this glow discharge moving with the clouds, but not of sufficient intensity to become disruptive at a distance of 100 yards from the ship, furnishing complete confirmation of Mr. Chalmer's observation on board the *Montagu* in 1749.

65. The following additional and well authenticated instances of electrical glow discharge from the atmosphere, confirm in a remarkable way the immediate source of this class of meteor:

In the *Philosophical Transactions* for 1773, is an interesting account of the effects of lightning on a house at Steeple Ashton, in the county of Wilts. Just before the house was struck, a ball of fire was observed between two persons in one of the rooms, at about a level with the face. It appeared to be of the size of a small loaf of bread, and to be surrounded by a dark smoke, and is described as "having burst with an exceeding loud noise, like the firing of many cannons all at once, filling the room with a smell of sulphur, vitriol, and other minerals in fusion." One of the observers, Mr. Pitcairn, who was struck down by the subsequent discharge and much injured, "remembers very well to have seen this ball of fire in the room for a second or two after he found himself struck by lightning."

In May 1803, the Librarian of the Botanic Gardens in Paris observed, during the presence of thunder clouds, a vivid glow of light on a bent iron bar enclosing a wall in the gardens. It assumed the appearance of "a ball of fire a foot in diameter, and lasted eighteen seconds." It was then followed by a severe stroke of lightning, which fell on the house about six feet distant.* These accounts are perfectly in accordance with the preceding, except that the charged clouds were stationary, or nearly so, instead of being in rapid motion.

One of the most beautiful and remarkable instances of this atmospheric glow discharge was observed by Ross and Sabine, in the course of their return from their Arctic expedition. In the Greenland seas, during a dark cloudy night, they observed a luminous space on the surface of the water, directly in the ship's course. It appeared to occupy an area of about 500 square yards, and had very considerable elevation. The ship sailed out of pitchy darkness into this luminous space; the masts, yards, and sails became, as the successive masts advanced, covered with light, and finally, as the ship sailed on, became again involved in complete obscurity.†

This was evidently the result of glow discharge, of insufficient electrical intensity to become disruptive, after the manner of a stroke of lightning, and was evidently produced by the deep black clouds covering the sky.

66. This species of glow discharge therefore may obtain, under a great variety of circumstances, with or without disruptive action, and so give

* Gilbert Annal xiii., p. 484.

† Annuaire for 1838, p. 372.

rise to the phenomena described by several observers as a blaze of electrical fire. The ship and spars may, under the operation of glow discharge, appear for a short time to be enveloped in electrical flames; in fact, the whole mass of the surrounding air may at the instant become luminous. Moreover, it is almost impossible to imagine the operation of so intense an electrical disturbance as that producing a stroke of lightning, without at the same time perceiving that the entire mass of the charged air near the earth's surface must be necessarily in a state of high excitation, giving rise to a great variety of luminous and other electrical effects. It is well known that in the case of discharges between two metallic spheres, artificially produced by the common electrical apparatus, all the intervening air becomes electrically affected, producing sparks, brushes, and often massive illuminations and corruscations, the particular effect depending on the intensity of the discharges, the distance and size of the balls, one of which will frequently appear to be covered with light. It is hence not at all surprising in the case of a thunder cloud about to send forth its lightning upon a ship, to find the mass of the vessel and air electrically affected, so as to give rise to the emission of common electrical sparks from metallic bodies, and cause the general structure to exhibit a variety of other minor electrical effects. It is not at all uncommon to see the pavement of a street luminous at the time of a thunderstorm, especially in heavy rain, or to see glow discharge settling on various pointed and other bodies. In the case of the *Scylla* sloop (51) (41), struck by lightning in the West Indies, in August 1843, and effectually preserved by the conductors from serious damage, the chain cable, coppers, and various parts of the ship were reported to "exhibit symptoms of electricity." All these phenomena are quite harmless, and practically distinct from the presence of the dense explosion we term a stroke of lightning, the immediate source of the destructive effects experienced, and which it is the particular duty of the conductors to parry and transmit to the sea, without the usual explosive effects.

67. The peculiar "whizzing" noise reported to have been heard in several instances of lightning falling on the conductors, is an effect almost always attendant on brush discharge of high intensity, but more especially on disruptive discharge, modified by the presence of conductors, and so caused to approach a sort of continuous stream action; a whizzing sound has also been observed to attend long electrical sparks striking directly upon the sea (50). In the memoirs of the Count de Forbin, before quoted (50), a brush discharge which settled on the vane spindle of the mainmast, is described as having sent out a roaring noise, similar to the firing of "wet gunpowder." This noise attendant on brush discharge is more or less modified by the rapidity of the electrical movement. When the brush discharge approaches to an actual disruption, the noise frequently resembles the sharp crack of a waggoner's whip; in others it is more like the violent escape of steam from a steam boiler. As the discharge becomes absolutely condensed into a single convulsive effort, as in the case of a

stroke of lightning, we have again a new kind of sound. In some instances it approaches a terrific crashing sound, as if thousands of porcelain jars had become smashed upon a hard pavement. In others we have a stunning sound, with a reverberating roar, and conveying the idea on shipboard of the explosion of the guns near the ear. In the case of H.M.S. *Trident*, 64, struck and damaged by lightning in October, 1803, the log says: "The electrical discharge burst over the ship with a crash as if the main deck guns had been fired."

68. It may not be unimportant to notice, under a tabular form, some of these phenomena, as observed in certain cases of H.M.S. struck by lightning.

Actæon, 26, fitted with conductors, Central America, middle watch, running with square yards.—"A most tremendous clap of thunder burst over our mast heads, the lightning appearing at the same time to run down the conductor."—Reported by the Officer of the watch.

"There came a crash of thunder as if the ship's broadside had been fired, attended by a loud whizzing noise. A momentary vivid flash seemed to strike the conductors, the effect of which in carrying off the lightning was truly beautiful."—Statement by the Carpenter of the ship, then on deck.

Beagle, 10, surveying vessel, Rio de la Plata, August, 1832.—"The ship appeared as if wrapped in a blaze of fire, accompanied by a loud crash; one of the clouds had evidently burst on the vessel; the mainmast for the instant appeared a mass of fire. On going below the purser, Mr. Rowlett, ran out of his cabin, through which a main branch of the conductor passed, and stated that at the instant of the shock he heard a vibrating sound, as of water rushing along the beam to which the conducting plates were secured."—Reported by Capt. Sullivan, R.N., the Lieut. of the ship.

"At the instant of a vivid flash of lightning, accompanied by a crashing peal of thunder, a hissing sound was heard on the masts; ship preserved by the conductors."—Report by Capt. Fitzroy.

Belleisle, 18, not having lightning conductors, struck and damaged by lightning in May, 1824, West Indies.—"As the lightning shot towards the earth it produced a noise like the whizzing of musket balls."—Reported by Capt. Leath, R.N.

Convoy, 28, Algoa Bay, September, 1844.—"Several of the seamen engaged in reefing the main topsail distinctly saw the electric fluid at the time of a heavy explosion of thunder run down the conductor of the fore topmast."—Reported to the Captain.

Dryad, 44, Coast of Africa, January, 1831.—"I distinctly saw the lightning run down the conductor on the foremast, and the officer on the fore-castle told me he heard a whizzing noise resembling the boiling of water. A short time after several of the officers saw it during another flash go down the mizenmast, and heard the same hissing noise."—Report by Capt. Turner, R.N.

Fox, 42, East Indies, April, 1847.—“Lightning struck the mainmast, and passed *visibly* down the conductors through the midshipman’s berth without doing any damage.”—Ship’s Log.

Fisgard, 44, struck by lightning in the Nisqually River, September, 1846, and preserved by the conductors.—“The First Lieut. on deck, and near the mainmast, was sensible of three distinct effects, viz., 1st. An intolerable and vivid glare of light. 2nd. A sharp ringing sound, almost indescribable. 3rd. A terrific burst of thunder, all following close upon each other.”—Statement by Lieut. Rodd.

“The crash was most awful, as if five hundred broadsides had all gone off together.”—Statement by the 2nd Lieut.

The people on shore stated, “that the ship appeared to be enveloped in a blaze of fire, with terrific bursts of thunder.”

Ganges, 84, Mediterranean, Jan., 1850.—“The electric fluid burst at the middle of foremast like a pyrotechnic shell; it appeared to scatter a shower of sparks in all directions; this was followed by a heavy peal of thunder. The stream continued to descend the mast without intermission for about 40 minutes.”—Statement by the Master of the ship.

Minden, 74, Hong Kong, China, August, 1842.—“Two flashes struck the ship, and the conductor for a few seconds conveyed away a stream of fire through the ship awful to behold. A loud frizzling noise was distinctly heard.”—Statement by Mr. Cook, Purser of the ship.

Racer, 16, Rio de la Plata, Feb., 1844.—“During a heavy thunder storm lightning was distinctly seen to run down the foremast; the copper rim round the truck was found to have been melted.”—Statement by the Captain.

Racer, 16, Jan., 1847, off Maldonado, a thunder cloud burst over the foremast.—“Prior to the crash, lightning was seen to run down the foremast.”—Statement by the Captain.

Ranger, 18, Coast of Africa, Dec., 1850, in a thunder storm of two hours’ duration.—“One of the flashes passed safely by the main conductor over the beam in the First Lieutenant’s cabin, who was at the time sick in bed, rendering the metal luminous.”

69. Such are a few striking instances, out of many which might be quoted, in illustration of the principles of electrical action to which we have just adverted and with which these several reports are perfectly consistent. We have only now to offer a few brief remarks on the peculiar sulphurous smell attendant on heavy shocks of lightning falling on a ship, and which is said frequently to fill the ship and surrounding air. In the case of the *Calliope*, struck by lightning at sea in July, 1851, and preserved by the conductors, “there was a strong smell of burning sulphur all around.” This effect is very common in heavy strokes of lightning, as may be seen especially in the numerous instances in which the electrical discharge has operated destructively on the vessel. No very satisfactory explanation has been

as yet given of this curious phenomenon. A peculiar smell or odour is attendant on common electricity artificially produced, and is said by a celebrated German chemist, the inventor of the gun cotton, to be produced by the presence of a principle as yet unknown, and which he terms "Ozone." Dr. Faraday appears inclined to think that the odour arises from a chemical combination of the elements of the atmosphere in which nitric acid is produced; the presence of this odour leaves no doubt of lightning having fallen on the ship.

70. In conclusion, it may be as well to state explicitly what is fairly to be expected from a capacious system of electrical conductors, the history of which we have been reviewing, and what is not.

It is certainly to be expected that such a system should effectually guard ships against the damage arising out of those violent disruptive atmospheric discharges falling within the ordinary experience of mankind, as in the common cases of ships said to be "struck by lightning;" and that the system is adequate to this, is as certain as any extraordinary degree of probability or assurance depending upon a large induction of facts can attain.

On the other hand, it is not to be expected that the system should guard against every possible kind of atmospheric discharge, accompanied by electrical phenomena; such for example as those associated with solid matter, sometimes called "thunderbolts," "fire balls," "meteorolites," &c., &c. Neither is it to be expected that the system should quiet all those minor electrical actions dependent on the excited state of the general mass of the ship and air already described (66), nor can it obviate that terrible concussion attendant on strokes of lightning, which in common with similar mechanical effects resulting from the discharge of cannon, will be often severely felt, and may shake frangible matter, such as glass, in pieces. Against all this no kind of lightning conductor can provide. Our system can only insure protection by disposing of the great source of destruction, that is, the body as it were of the electrical discharge itself, and dispersing or conveying it away under the form of a non-explosive current, and this in every instance as yet experienced it has never failed to do.

[Sir William Harris has very justly assumed that high credit to which he is entitled of having effectually protected the ships of H.M. Navy from lightning, the effects of which he has shown in the pages of this journal (previous to the application of his conductors) produced the most disastrous results among them in all parts of the world. Doubtless it was a bold, even an unprecedented step, to lead this destructive agent fearlessly through a ship of war, crowded with life, in the very midst of those well known combustible materials which are essential to her duties; and his plan was received, as might be expected, with prejudice. But the measure was founded on sound principles of science, and, seeing that it had the support of such persons as Sir Humphrey Davy, Dr. Wollaston, and other leading practical men of the day, we at once accorded to him the assistance of this journal to make known his theory, and his plan for carrying it out in the defence of our Navy. The result has fully rewarded our expectations: the loss of life, or the destruction of spars, from the effects of lightning, is no longer known in the British Navy, and if a solitary instance should occur, it turns out that the vessel has, from

some accidental cause, not been fitted with the conductors of Sir W. Harris. For our own part we congratulate, most sincerely, not only Sir W. Harris, who has effected it, but our seamen and officers, as well as the country at large, who have benefited by this great achievement, in the successful application of scientific research to so important a purpose, the good effects of which at a critical moment it would be difficult to overrate. And we look back at the course which we adopted, when Sir William Harris's views were opposed by others who knew less of the subject than he did, with feelings of satisfaction approaching to exultation at the complete success which has crowned his exertions; rejoicing that while the avowed object of our pages is to warn the navigator of hidden dangers which lie in his path, they have been also the medium of promulgating, throughout the maritime world, an effectual defence of his ship from another, danger which has proved itself to be equally as fatal to him as the former.—ED. N. M.]

LOSS OF THE BRIG MARY AT NATAL, WITH EARLY RECOLLECTIONS OF THAT SETTLEMENT.

(Continued from page 36.)

A continuance of fine weather and a smooth sea, had enabled us to employ our time successfully in landing provisions and stores from the wreck, which was now fast filling with and sinking into the sand. We had succeeded in fishing out of the hold several barrels of beef and pork, but unfortunately the principal part of our bread and flour being stowed in the after lower hold, was totally destroyed by salt water; besides the three bags of the former damaged by the swamping of the boat on the first attempt at landing. We had not remaining more than one hundred pounds of bread saved in good condition.

When the first excitement occasioned by the danger and uncertainty of our position with the natives had passed away, unfortunately symptoms of disaffection and insubordination began to manifest themselves among our party. Instead of harmony and concert, for the common benefit, scenes of riot and intemperance commenced. The wines and spirits, that in the more urgent moments of danger and exertion had been unheeded or entirely neglected, were eagerly sought after and plundered by two or three of the crew, who were known to be of dissipated habits. In despite of the strict injunctions of the captain, and the vigilance of the officers, daily scenes of disorder and drunkenness occurred. To put a stop to this, Capt. King resolved that every drop of spirits saved, or that thenceforth might be saved from the wreck, should be destroyed. The disgusting scenes of riot and intoxication which had begun, could not fail to degrade us, even in the estimation of the natives. That sailors in such a condition as ours should be so imprudent as to lose sight not only of their common safety, but give way to a reckless thirst for ardent spirits, would hardly be credited by persons of reflection who are strangers to this mad propensity, which does not prevail to such an extent among any other

class of men. In consequence of our captain having put his salutary resolution in force, our little band was broken up. Three of our number, headed by Norton the second mate, took offence at this measure, occasioned by their own bad conduct, seized the long boat, and determined rather than live without their *grog*, to trust themselves in an open boat to the mercy of the sea. No doubt anxiety to escape such a dreary prospect as we had before us, had some influence on the decision of these daring men to undertake the perilous adventure of making the voyage from Natal to Algoa Bay in an open boat only 16 feet long, but I have no hesitation in saying the first was the primary reason of their adventure.

Capt. King's intentions were, that as the carpenter's tools had been saved from the wreck, to have lengthened and proportionably enlarged the long boat to have taken all hands, and by decking her over and otherwise strengthening her, to make her more secure for performing the voyage to the Cape Colony. And it was mutually agreed on by the more orderly of the crew, seeing that the boat in her present condition was totally unfit to perform the voyage with any portion of the crew with safety, to give her up to these disaffected men, and to take our chance of getting away by constructing a vessel for ourselves. Fifteen days after the wreck of the brig, the party sailed in the long boat with our united prayers for their success, but they bade us adieu at Natal for ever.

Having saved everything moveable that could be got from the wreck, our attention was now turned to selecting a more eligible spot for a residence, and one at the same time suited for our design of constructing a vessel, and the erection of a more substantial residence than our tents afforded from the inclemency of the weather, and the intrusion of wolves and tigers, which were constantly annoying us by their descent at night upon our tents. They kept us constantly on the watch, and disturbed us by their hungry howling for more dogs, for by this time they had succeeded in carrying off these our faithful attendants, the last of which was a fine Newfoundland, a most sagacious animal, who had been a most active and useful member of the community in saving many small articles washed overboard from the wreck. This faithful animal was regretted by all of us, but by no one more than myself, for having fallen overboard at sea on the passage out from England, when on the Equator, the noble animal by jumping over after me saved my life. I could not swim a stroke, but by holding on to him he swam with me alongside of the ship, it being a calm, and the vessel hardly moving through the water. I got hold of a rope, and by this means both myself and my saviour were hauled on board the brig. The loss of this fine favourite dog drew down vengeance on these marauding persecutors. The ingenuity of Mr. Hutton suggested a method of ultimately ridding ourselves of these nocturnal visitors. This was effected by fixing a musket in the ground, doubly charged with powder and ball, with the butt end depressed and the muzzle rather elevated, so that a piece of meat would lay sufficiently below it as to admit the head of a tiger or a wolf to come in contact

with the muzzle. To this bait was attached a cord, which passing round the butt end of the gun was fastened to the trigger; a fence was made round the gun, so that an approach could not be made to the bait in any direction but point blank to the muzzle, -so that by taking the bait the gun was discharged into the very teeth of the thief. In this way, though it was in a manner locking the stable when the horse was stolen, Mr. Hutton succeeded in clearing our tents from these ferocious intruders. I have seen several tigers with their jaws literally shattered to pieces in this manner, for we found it was necessary to charge the guns with three or four balls to secure the beasts, as several had got away when severely wounded, having traced them in the morning by the track of blood on the ground until lost in the thicket and jungles, where further search would have been dangerous. Our shot seldom failed to take effect in some part of their carcase, but so tenacious of life are these animals, that they would keep the whole of us at bay, armed with bludgeons, and could not be overcome until absolutely riddled with shot.

Our party had been reduced to eight in number by the sailing of the long boat from Natal, and many were the conjectures hazarded whether or not they would ever reach their destination in so frail a bark. These reflections were frequently uppermost among us. The moment of their departure had buried all angry feelings occasioned by their disorderly conduct, and mutual sympathy and good wishes predominated on either side. The thoughts of old associations and companionship, about to be broken up for ever, softened the hearts of those departing and those remaining in the bonds of good wishes for each other. In fact, our mutual safety and deliverance naturally possessed our minds, and the doubt and uncertainty of our respective prospects of the future adding still more to the interest of the occasion, when the moment of parting had arrived manly feelings gave way; the stubborn breast which had been proof against the voice of reason and authority was subdued, and in that moment an appeal to those feelings would have sufficed to alter their purpose.

Men may become the slaves of degrading and destructive passions, but they have hearts endued with generous feelings, latent though they may be until roused by the touch of some tender string, which vibrates in unison with them in the dark hour of adversity. Companions in adversity can only share in that pure and self-denying love and interest for those on whom the mantle of misfortune has fallen. It is theirs to know the inexpressible delight which fills the heart that truly adorns human nature and brings man nearer to his God, levels all worldly distinctions but that of nobleness and generosity of soul. It is when trembling beneath the chilling blast of adversity that hearts are softened towards our fellow creatures, when man feels for his fellow man, and feelings are engendered by its effect that are unknown in the genial sunshine of prosperity. Hence the many noble instances of self sacrifice made by the poor in assisting each other.

Our labours having terminated at the wreck, and having collected all the scattered materials from the beach, we now employed our time

in cutting timber and collecting thatch for the building of a house. Capt. King, with Mr. Hutton the chief officer, having made a survey of the locality, had determined on a spot on the S.W. side of the harbour, as being the most eligible for the construction of a vessel, the headland called Cape Natal being well wooded, and the side towards the harbour being steep, the timber, after being cut, it remained only to launch it down the face of the hill into the channel on the S.W. side of the harbour. Having cleared away the spot selected, and on the foundation of the first house being laid, or rather when sinking the first post into the ground, Capt. King, in honour of his friend and patron, named it Townsend, by which name we shall hereafter speak of it, and the remains of which may perhaps be visible to this day. In the course of a week's steady perseverance at our labours, we had succeeded in getting sufficient materials collected to commence the building of our house, when the labour was interrupted by the arrival of Mr. Farwell and his party, accompanied by a messenger from the King, who having heard of the arrival of an uncombie vessel, with (Moolongas) white men, requested their attendance at his royal residence, Umbollalili. It was in consequence of this summons resolved to suspend our labours for the present, and as many as could be spared of our party to accompany Capt. King on the journey to the King's residence.

Capt. King made up a suitable present for his majesty, consisting of bead bugles and a few blankets, and accompanied by Mr. Hutton and three of the seamen, having two of Mr. Farwell's Hottentots as guides, when the greetings with his old friend, Mr. Farwell, were mutually exchanged, started early on the morning for their interesting journey to King Shaka's residence. The distance was represented as being about fifty miles, in a north-easterly direction from Natal. It was truly an amusing scene to look upon, which the starting of our party presented. Mr. F. had an old stumbling, broken rosinante, which he kindly lent Mr. King to assist him over the journey, and on which this gentleman was mounted, the saddle consisting of a goat's skin stuffed with old rags and a portion of the rider's wardrobe, evident by a stray shirt sleeve dangling out at the after part, the whole being firmly girted on the animal's back by a broad cowhide thong, set up, as Jack said, at the starboard gangway with a heaver, which being a stout piece of wood, answered the double capacity of a buckle and stirrup; while the three tars were mounted on as many pack oxen, their broad and plump backs rendering anything in the shape of a saddle superfluous, and with only a thong passed through the nose for the purpose of steering. On this elevation Jack was chucking and whipping his stubborn steed, his arms and legs exhibiting the identical convulsive motions of those wooden men-toys which are acted on by pulling a string in the centre, and whipping away with might and main, though to very little purpose, the motion of the animal being only increased in eccentricity, and, as Jack said, tacking and making stern boards. The whole at last was got under way in a straight line, by a driver being appointed to each beast, which, after affording much amusement passed on with

three hearty cheers from those remaining at Port Farwell. Myself and Mr. Isaacs being left in charge of our premises and effects, while Capt. King and the rest of my shipmates are on their journey to the King's, I will give the reader a brief description of Fort Farwell and its inhabitants.

(*To be continued.*)

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from page 74.)

Before entering into any conversation I remonstrated most indignantly with the General (Chintæ) on being kept waiting by him three quarters of an hour in the sun, and on the mud, which, I told him, I considered not only an insult to myself as a British officer, but a total want of courtesy to a stranger; to my surprise, the General instantly pleaded total ignorance of my proximity, but afterwards apologized for the discourtesy, ascribing it to the neglect of the officer in charge of the fort, who, he said, should be punished; I warned him to be more careful for the future in his demeanour towards British officers, who were ready at all times to acknowledge courtesy, but also perfectly prepared to resent the want of it, if necessary. I then complained of the misbehaviour of the Colonel whom he had sent on board, and at once received from him an assurance that his conduct should be inquired into. I next requested to be informed why the batteries were manned, and the guns pointed at my small boat (a whale boat pulling five oars) as though I had been an enemy attempting to force my way into the river; to which he replied, that it was not done with any hostile intent, but that it was customary always to keep the forts and guns manned, and prepared for any emergency. I knew this was not true, as he had brought sixteen hundred men with him from Tientsin only the day before. I contented myself, however, by rejoicing, that it was a strange way of receiving a friend, but that, if otherwise intended, it was in my power to retaliate in a manner that, perhaps, would not be agreeable; indeed I made use of stronger language but Medhurst softened it down in translating.

I now introduced the subject of the despatches, and, after a long conversation, it appeared that the General had no authority to receive them, nor indeed any power to move in the matter on his own responsibility, and was waiting a reply to a communication he had already made to the Viceroy of the Province, inquiring whether he should provide me with the means of carrying the letters to Peking in person, accept them for transmission himself, or refuse them altogether. He then inquired whether the letters referred to some which had been sent to the capital, and to which answers had already been returned: in reply he was informed that my despatches were duplicates of those.

Finding thus that the originals were already in Keying's possession, and inferring, that, with a knowledge of this fact, the General could no longer have any reason to hesitate about accepting them, they were formally tendered; but, to my astonishment, and no little mortification, he rejected them with the utmost unconcern; offering, however, to receive them the moment the reply of the Viceroy, if favourable, arrived. I therefore stated I would return on board, and wait for it, but protested strongly against the indignity offered to H.B.M.'s Government in thus demurring to receive a communication from its Foreign Minister; and I told him plainly that this refusal would add another item to the already numerous list of grievances of which we have had to complain since the peace; and that such conduct towards us, if persisted in, would inevitably lead to a resumption of hostilities, at no distant period, adding that I should consider it my duty to report the whole of the circumstances to my Government: this terminated our conference.

On our way off we met the Colonels coming ashore, and were told by the white-button Mandarin, that our detention on the mud was caused by the General's anxiety to see his own officers before us; so much for the assertion that he was not aware of our proximity! The commanding officer on board gave me an amusing account of their behaviour after I left the ship; they fancied they were prisoners, and for a long time remained abaft the mizenmast, fuming and gesticulating, evidently in a great rage at the turn affairs had taken; at last they inquired, through my Chinese servant, whether they might be conveyed to their junk, which was anchored close to the ship, to eat their rice; this request was, of course, complied with instantly; but the moment they got on board they lifted their anchor, and made sail for the river.

Monday, June 3rd.—Two white-button Mandarins arrived this morning with some of the promised provisions, consisting of live pigs, and Shanfung cabbages, and thin cakes of unleavened dough, which last are very good fresh, but soon turn sour; they ought to have been here yesterday, but the junk stuck on the bar in trying to get out.

About 11h. A.M., the wind, which was easterly, increased rapidly, veering to N.E., and before sunset had freshened to a gale; it was accompanied by a short but heavy breaking sea, which I don't think any undecked boat could have lived in; the ship rode remarkably easy, although the deck, from the mainmast forward, was all afloat; veered to fifty fathoms on the small bower, which was evidently coming home, and forty on the best bower; about 11h. P.M. the gale was at its height, the rain poured down in torrents, and the flashes of lightning were incessant. A large junk drove across our hawse before midnight, barely clearing the jibboom, and anchored to leeward. The next morning several other junks were observed anchored very near the bar, upon which the sea broke heavily; the water alongside was of the colour and consistency of pea-soup, showing how much the muddy bottom had been agitated and loosened by this breeze; no wonder the anchor came home. I may mention that the aneroid ba-

rometer, showing an unusual sensitiveness, indicated the approach of this gale: from 29.90 inches, at which it stood on the 1st, it gradually fell to 29.77, at 8h. A.M. of the 3rd, about a couple of hours before the gale commenced; from which period it continued steadily rising to 29.80 at midnight of the 4th.

Wednesday, June 5th.—The Mandarins came out to day with an unsealed packet for me, which purports to be the copy of an Imperial edict “confidentially sent by the General Council of State to the Chintae and Taoutae of Tientsin.”

The following is a translation of this document:—

“On the 18th day of the 4th month (29th of May, 1850) His Imperial Majesty made known his will as follows:

“Luh, Our Viceroy of Keangsoo, having reported to Us, that that nation* had presented to him a letter from themselves to Our Ministers Muh-chang-ah and Keying, and another from their Envoy to Keying, requesting him to forward them to their address, and that the Envoy had likewise made known to him, that as it was impossible for him to wait any length of time (at Shanghai) he was under the necessity of sending Interpreter Medhurst, and others, to present a copy at Tientsin, and await a reply there. We directed the said Viceroy to expostulate with the Envoy, and honestly to tell him, in reply, that he must refrain from carrying out his intention of despatching any one to Tientsin. But, lest he do not forbear, it is Our wish that Nar-kungah, Our Viceroy of Chihle, hasten to instruct the Chintae and Taoutae of Tientsin, that if a barbarian vessel do appear off that port, they must tell her Commander how matters have been adjusted, and direct him forthwith to return to Shanghai, and await Our rejoinder there.

“Respect this.”

The Chintae and Taoutae probably considered this edict quite sufficient to warrant my immediate departure, so to settle that point I wrote them the following letter:

“I have received the copy of an Imperial edict sent by the General Council of State to you, of which you deputed your subordinate officers to be the bearers, and I have made myself acquainted with its contents.

“To prevent the possibility of misunderstanding, I feel it my duty to inform you that my instructions from H.M.’s Plenipotentiary are as follows:

“‘In the event of your finding, on your arrival at the mouth of the Peiho, that the reply of that nation has already been forwarded overland to Shanghai, you will demand and obtain a duplicate copy of the same before you leave the port.’

“I need only assure you that it is my intention to comply with these instructions in every respect.”

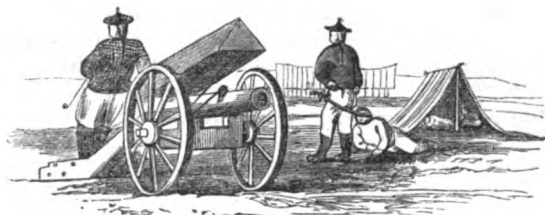
It was a happy idea of Medhurst’s, applying the term “that nation” to the Chinese, thus paying them off in their own coin; I only wish “barbarian” could have been introduced in the letter also.

* Medhurst specially directed my attention to the words “that nation,” which he considered equivalent to a contemptuous epithet.

I gave our Chinese servants leave to go ashore in the junk, but they were not permitted to land; the Mandarins made them go on board a war junk in the river, where they spent the night; otherwise they were well treated, supplied with plenty of chou-chou, a barber to shave them, &c.

It is new moon on the 9th, and, as the Chintae's movements require freshening, I must get the ship over the bar, if possible; we were busy all Friday finishing the survey of it, but without lightening I fear there is very little chance of getting over; it is composed of hard sand, with a foot and a half less water on it, at present, than the ship draws. Our movements must have been narrowly watched, for in the night the bamboo beacons were all removed, as though the ship's coming in the river was dreaded.

Saturday, June 8th.—I was preparing to go ashore this morning, to see what had become of the Viceroy's reply to the application of the General, relative to the despatches; when, at 7h. A.M., "white-button" came off to inform me that Chin-che-ke, the superintendent of the water communications of the Province of Chih-le, formerly Taoutae of Ningpo, had been sent down by the Viceroy of Chih-le to communicate with me, and requested, that as he was suffering from rheumatism, and afraid to venture afloat, I would come and see him; I accordingly repaired ashore, and met with a very different reception from the last; not a man was to be seen in the batteries, the guns had their great clumsy iron-plate covers on, the banners of defiance were



no longer displayed, and in front of the field-pieces a handsome blue tent had been erected, furnished with little tables and seats. I was accompanied by Medhurst and Rassim Effendi, a young Turkish officer, who is studying his profession on board the *Reynard*. We were received with marked civility by the Heatai, or Commandant of the forts, a short, thick-set, man, with a vulgar unintellectual countenance; he had evidently risen from a very inferior grade; he wore a red button, but did not presume to sit in the presence of his General, (the Chintae,) who presently arrived, accompanied by his colleague and the Superintendent, a benevolent looking old gentleman, without a tooth in his head. After the usual compliments, and inquiries by the Superintendent after old friends at Ningpo, (especially Colonel Campbell of the 98th, the present Commandant at Lahore,) I reminded them that three days had now elapsed since the period when an answer.

to the application respecting the object of my visit was to have been received here, from the Viceroy, or the capital, and requested to know whether it had arrived. The Superintendent said that the answer to the Plenipotentiary's letter left Peking on the 28th of May, and must, by this time, have arrived at its destination: that as the original letter had gone to Shanghai, he could only give me a copy, and inquired if that would be sufficient. I said that it was all I wanted. The copy was then produced from his boot,* and handed to me; but as it was neither signed nor sealed, I begged that it might be accompanied by some document as a pledge of its authenticity. This, after a little demur, he complied with; and I waited patiently while he wrote the following letter, to which all three Mandarins affixed their names and a private seal.

"SIR,—We are in the receipt of your note, stating that your instructions from H.B.M.'s Plenipotentiary provide, that in the event of your finding, on arrival at the Peiho, our reply has already been returned by overland route to Shanghai, you are to demand from us a duplicate copy of the same before leaving the port, and informing us that it is your fixed intention to act in obedience to these orders. In reply, we have to inform you, that the despatches forwarded by H.B.M.'s Plenipotentiary to the Viceroy of Keangsoo, were transmitted by him in a memorial to His Imperial Majesty, and that a rejoinder has already been returned by the Ministers Keying and Muh-changah, through the same channel, to Shanghai. As, however, you require, in accordance with your instructions, a copy of such reply before you can leave for the south, we now beg to enclose the copy in question, and in doing so we trust that you will further follow out your orders by taking your immediate departure for Shanghai, without any more delay.

"Wishing you every success, we are, &c.,

"Shwang-juy, Chintae of Teintsin.

"Chin-che-ke, Taoutae of Tsingho.

"Chang-kewan, Taoutae of Teintsin."



Private Seal.

I received the letter, with its enclosure, and handed over my despatches in exchange, thinking, of course, they would now be received; but, to my great astonishment, the Superintendent positively refused them. I was totally unprepared for this, and was quite at a loss how to act in the turn affairs had taken. All expostulation and argument seemed useless, and after two hours and a half wasted in endeavours to induce him to take them, I told him and his colleagues that it was quite impossible for me to receive the answers, and unless they could give me a written reason for their refusal of the despatches, I should bring the ship into the river on Monday, or if there should not be

* Boots do the duty of pockets in China.

water enough on the bar, I should proceed along the coast and survey it. This threat had evidently some effect, for, after a long consultation, they agreed to write me their reasons for refusing my despatches, and send them off the following day, or that evening, if possible.

This closed the conference, which had lasted nearly four hours; and we returned on board, thankful to get away from this miserable place; for the heat of the tent was suffocating, and the little cups of the wretched China beverage, which was all the refreshment offered us, only mocked our thirst. The power of the sun here seems most extraordinary; the mud, ankle deep in some places when we landed, was found baked hard and full of cracks on our return to the boat.

Sunday, June 9th.—White-button came off this morning with some more provisions, but no letter, and he was sent back with directions to inform the Mandarins, that unless the letter was forthcoming before noon to-morrow, (it will be high water about 2h. P.M.,) I shall carry my intention of entering the river into execution, notwithstanding the removal of the stakes which marked the passage.

Monday, June 10th.—During the night it came on to blow hard from the eastward, and before noon so heavy a sea had got up, and broke so heavily on the bar, that it was totally impassable, had there even been water enough for the ship, which I very much doubt. Of course no communication could reach us, though we saw a junk endeavouring to get out.

Tuesday, June 11th.—At 5h. A.M. a junk crossed the bar, conveying the Superintendent, who immediately came on board. He was the bearer of the letter and enclosure which I refused on Saturday, and brought with it a paper, signed by himself and his colleagues, stating their reasons for refusing the despatches, as demanded by me; which he begged me with many entreaties to receive, and to carry my despatches back to Shanghai.

This document, after a long preamble, ran thus:

“ * * * * * No Minister of Foreign Affairs has ever been placed at Tientsin; and as neither the Chintae nor Taoutae of that city has been charged with that peculiar responsibility, they cannot receive official despatches of any kind. Further, the letters of which you are bearer are but duplicates of those already transmitted overland from Shanghai; and the Viceroy of Keangsoo, who reported those to the Emperor, has been particularly selected by His Majesty, likewise, to be the channel through whom the rejoinder is to be returned. His Majesty, at the same time, made known to the authorities of this province, His will, that you should be requested, should you appear, to return to Shanghai, to await His Imperial reply there; in a word, the Viceroy of Keangsoo having already, as in duty bound, communicated the reply in accordance with his Imperial Master's will, we do not understand what necessity there is for repeating the presentation of the letters here.

“ Having thus plainly and particularly entered, for your information, into the motives by which we are guided, we trust you will be pleased to leave our port, and return without further delay to Shanghai.”

Having carefully perused the document, and being satisfied that everything short of actual hostilities had been done to accomplish the object of my mission, I agreed to accept it, as well as the duplicate copy of the reply. The subject being thus disposed of, the Superintendent assured me, in the course of a desultory conversation, that our coming there had nearly occasioned much trouble to the authorities; as, had the vessel entered the river, there were orders at Teintsin, to send the Taoutae and General in chains to Pekin. That the General was fully impressed with the idea that we had come there with hostile intentions; and particularly requested to see my instructions, for the purpose of assuring the General, what he himself fully believed, that we had no such object in view. With this request I complied; and he seemed much delighted with that portion of them which specially directed me "To avoid any measures which might involve Her Majesty's Government in any dispute or collision tending to implicate the amicable relations existing between Great Britain and China." He then mentioned that the new Emperor was much more strict and severe than his father, and visited most severely any departure from the old laws of the Empire. Even his father's oldest and most confidential servants have ceased to advise him, lest they should be disgraced, or even forfeit their lives * * * * *

I gave the Superintendent a parting salute of three guns, when he quitted the ship, and got underway immediately afterwards.

And now I cannot avoid a reflection upon the unexpected result of my expedition. From the tenor of my instructions it is evident that the refusal of the despatches was never contemplated; equally certain is it that nothing but the threat of sending duplicates via Teintsin, induced the Viceroy of Kiángsú to forward the originals from Nankin.* Considering also, the overbearing conduct of the Mandarins here, towards Medhurst and myself, at our first interview with them; their insensibility to our patient reasoning upon the impolicy of their conduct; and indifference when the possibility of ulterior proceedings was hinted at; all unite to confirm me in the opinion that the same haughty, jealous, and exclusive policy which in former days dictated the Imperial court against foreigners (barbarians), is evidently still in full force; and it is my firm conviction that the power of England will never be acknowledged by it until a blow has been struck at Pekin itself.

The following document may be said to afford most conclusive evidence on this point: it is a communication from the Grand Council of State to the Viceroys of the Provinces on the seaboard, and Governors of Keangsoo, Fuhkeen, Chekeang, and Canton, and was despatched by express from the Board of War, on the 14th day of the 5th month, (23rd of June, 1850,) twelve days after I left the Peiho.

"On the 5th day of the 5th moon, (14th June, 1850,) we, the Council of State, received His Majesty's commands, as follows:

* The city of Nanking, or Kiangning-fú, is the provincial capital, and Shanghai the largest seaport of the province of Kiangsú.

"In a memorial of this date from Naurh-kinggih, (Viceroy of Chihle,) he reports that he deputed an officer to expostulate with the English barbarians at the Peiho, and that they have already returned to the southward.

* * * * *

"The designs of the English Chief are deep and unfathomable. In the present instance he came first in person to present his official letters at Shanghae, and then sent messengers with them to Tientsin. Naurhkinggih at once deputed an officer to the spot; who went on board the barbarian vessel himself, and told those who came that it was needless to present their despatches a second time; and he so expostulated and reasoned with them, that they gave up their intention of delivering the letters at Tientsin, and sailed immediately for the south.

"The disposition of the barbarians, moreover, is wild and extravagant, and they wander from place to place, agitating here, and disturbing there, saying this and meaning that. It was for these reasons that we directed Luy-keen-ying, (Viceroy of Twokeang,) to issue a proclamation making known our views with regard to them.

"We have no security that these barbarians do not still cherish some mischievous designs to provoke us to hostility, or to disturb our coasts; and looking back to our frequent reverses both in Chekeang and Keangnan, when their vessels last entered our rivers, is it possible for us now to be too careful to prepare for the contingency? Our mind is indeed racked with anxiety, when we consider the terror and agitation of the inhabitants, and the certain obstruction of the grain transport, which must ensue whenever their vessels shall effect an entrance either into the harbours of Keangnan, or into the Maou Lake at Sungkeang; and when we know that they look with particularly covetous eyes upon the isolated solitary island of Tinghae*.

"Let the Viceroy of Two-keang, the Governors of Keangsoo and Chekiang, and the Commander-in-chief at Sungkiang, carefully examine those positions in the respective provinces which claim especial attention, and forsaking all vague and loose theories, hasten to place them in an effective state of defence; let them use the most cautious discrimination in the selection of both civil and military officers, taking care to appoint to available posts only those who possess merit and ability; and to remove the worthless, obsequious, and feeble.

"Having now enjoined these commands upon them, We shall hold them, and them alone, responsible for any evils that may arise from failure or neglect.

"It appears that a barbarian chief† resides within the city of Fuh-chow-foo, one of the ports in which trade has been permitted. Though our amicable relations have continued undisturbed in that city, Leu Yunko and Seu-keyu (Viceroy and Governor of Fuhkeen) must nevertheless, as the barbarians are just now little to be depended on,

* Chusan.

† H.B.M.'s Consul resides within the walls of Foo-chow-foo.

keep a careful and vigilant watch, and select such important positions within their jurisdiction as can be fitted for defence. Let them not trust too much to the peace which has hitherto prevailed, lest they be surprised when least prepared.

“Seu-Kwangtsin and Yemingshin (Viceroy and Governor of Canton) have conducted barbarian affairs with much ability year after year, and have met every emergency with complete success. Now that the barbarians are again agitating, and seem desirous to involve us, by some artful stratagem, let them provide against every exigency, before we suffer by their projects. But let them be careful not to excite their anger, or rouse them into motion, lest a pretext be afforded them of which they can avail themselves.

“Measures necessary for defence against the barbarians may be adopted in all the maritime provinces of the empire; but the means whereby to restrain and keep them under control, exist only in Canton: should the barbarian chief return thither, and bow his head in submission to the commands which are given him, trade may of course continue as before. But should he refuse to assent to what is required of him, it would be better to employ our power of control in the first instance, before he proceeds to avail himself of previous experience, and sneak into and disturb the interior, than to adopt defensive measures subsequent to the catastrophe.

“To this end, therefore, We desire Seukwangtsin and Yemingshin, with the co-operation of the gentry of their province, to reason with the English merchants, and to explain to them that they only drew down ill-will upon themselves when the trade of all nations was stopped through the discussion of their demand to enter the city, and that their character fell, while that of others was raised in the eyes of the world. Their proud spirits will thereby become humbled without their own cognizance; and We shall have pursued a method far preferable to the assertion of Our dignity by a resort to arms. We have no doubt that Seukwangtsin and his colleague will readily apprehend these Our views, and take such measures to subdue the barbarians as will cause them to be unwittingly their own impediment.

“In a word, security can depend on preparation alone, and on the adoption of preventive measures before the catastrophe; while the flighty and capricious disposition of the barbarians is effectually to be met only by patient and quiet resistance.

“We sincerely trust that our Viceroys and Governors and Commanders-in-chief, will prove themselves faithful to their trust, and that they will stimulate their energies and purify their motives. They will then insure success to every undertaking, and such a defence of the country as may be safely relied on.

“Respect this.”

This is certainly a most extraordinary document, and well worthy the attention of our authorities at home; the chances are, however, a hundred to one it never gets beyond Green Island.

Wednesday, June 12.—Experienced a strong westerly set all night, with a disagreeable short chopping sea; we must have passed much

nearer the Shau-luy-teen Islands than I intended, for in the morning we made the main land, and coasted along a dreary sandy beach, with nothing to enliven the prospect but an occasional fisherman's hut. About 2, P.M., the high mountain range which separates Tartary from China made its appearance; we passed within sight of what must be a considerable river, judging from the number of junks at anchor off the entrance: about here the dreary sandy beach terminates, and the country appears thickly wooded to the water's edge,—the first trees we have seen since leaving Shanghæ.

It was a lovely evening, and the sun disappeared behind a magnificent lofty peak, shedding a glorious glow over the surrounding hills.

“The sun had sunk, but lines of gold
Hung on the ashen clouds. * * *
While the faint stars were gathering overhead.”

The breeze had gradually died away, and as the set appeared to be drifting us inshore, I anchored for the night.

(To be Continued.)

BOTTLE PAPERS.

Continued from p. 40. For Tracks the reader is requested to refer to the number for November last.

FREELAND—Track No. 19.

A bottle from the brig *Freeland*, Captain T. Midgley, (from Liverpool to Africa,) in lat. $41^{\circ} 50'$ N., long. $14^{\circ} 23'$ W., 11th of February, 1833; picked up close to the shore, off the Harbour of Vigo, on the 1st of March following; having traversed, in a true E. $\frac{1}{2}$ N. direction, about 80 leagues.

WILLIAM MANNING—Track No. 19 a.

Jamaica, Oct. 28th, 1815.

The following has been published by Captain Couison, late of the ship *Port Royal*.

“This bottle was thrown overboard from the *William Manning*, of London, in lat 35° N., long. $14^{\circ} 26'$ W., on Sept. 9, 1810.

“THOMAS HUSKISSON.

“This is intended to ascertain the current; whoever picks it up is requested to acknowledge it by publication.”

Captain Couison picked up the above bottle on the 19th of the present month, on the south-east point of H——. (Probably Hispaniola.—ED. N. M.)—*Naval Chron.*, vol. 1835, p. 31.

BARETTO, JUNIOR—Track No. 20.

“Captain Marshall, commander, ship *Barretto, jun.*, 9th Dec., 1839, lat. $44^{\circ} 50'$, long. $14^{\circ} 19'$, from Portsmouth to Gibraltar, with detachments of the 1st Royals, 81st and 82nd regiments. Officers names—Major Pinckney, 82nd; Capt. Jeffery and Lieut. Powell, 81st; Lieut. Diggle, 82nd; Ensign C. W. Thompson, 81st; Ensign Isaac and Ensign Lambert, 82nd; Assistant-Surgeon Atkinson, 82nd regiments. Mrs. Atkinson and child. Left Portsmouth 28th November, 1839. At sea—all well.

"Whoever picks up this paper is requested to publish it in the first newspaper, British or Foreign, in order to show the course of the currents."

"Ayez la bonté de publier ceci dans le journaux Francais ou Anglais."

"Tenga V. M. la bondad de publicar este papel en las gacetas Espanolas Inglesas ó Americanas."—*M.S.*

Picked up on the 12th of Feb., 1840, near 50 tower, Coast Guard Station.

W. R. ASHBY, Lieut., R.N., Chief Officer.

WALLACE—Track No. 21.

The annexed is a copy of a paper found in a bottle which was picked up by a French vessel on the 21st ultimo, about five miles off Ushant, an island near the extreme west point of France:—

"April 12, 1835.—This is written on board the barque *Wallace*, of Alloa, Captain James Robertson, lat. $52^{\circ} 13'$, long. 15° , bound for Van Diemen's Land. All well. A dead calm to-day. Encountered a strong gale of wind in lat. 55° , long. 15° from the westward. Please send this to any newspaper office.—John Adamson, Mrs. Eliza Russell, Helen Kingham, Archibald Russell, W. Moira, J. R. Gordon, E. S. Huddepath, T. Huddepath, W. Russell."—*Times*, September 4, 1835.

THETIS—Track No. 22.

LEITH, April 15.—A bottle, in which a paper containing the following notice was enclosed, was picked up on the shore at Balmore, on the east side of North Uist, on the 3rd inst., by Archibald Macaulay, and transmitted through Lloyd's agent to the agents for the London *S. & M. G.* at Leith; the lat. of the place where the bottle was found is $57^{\circ} 35' N.$, long. $7^{\circ} 40' W.$:—

"At sea, in lat. $50^{\circ} 50' N.$, and long. $16^{\circ} W.$, brig *Thetis*, of Leith, from Leith for Sydney, all well, 18th Jan, 1841. Whoever should happen to find the enclosed will greatly oblige Captain Bisset by forwarding it to the offices of the *S. & M. G.*, for the purpose of acquainting navigators of the course of the currents of the Western Ocean, and please to mention the time and place that the same is picked up.

(Signed)

"F. G. BISSET."

MARY—Track No. 23.

Custom House, Westport, July 22nd, 1840.

SIR,—This day the enclosed paper was handed me by Robert Mealey, who picked it up at Clare Island, and brought it to Westport, a distance of eighteen miles, for the purpose of being transmitted to your office. He has requested me to bring his claim before you for some remuneration for his trouble. Should the reward sought be a usual thing, I beg to recommend him to your favourable notice.

I have the honour, &c.,

RICHARD DOWLEY, Collector.

Secretary of the Admiralty.

"This bottle was thrown overboard from the British barque *Mary*, of Halifax, James H. Godfrey, Master, in lat. $47^{\circ} 20' N.$, and long. $27^{\circ} 25' W.$, on a voyage from Savanna to Liverpool, this 22nd day of March, 1840. Wind S.E."

This paper found 11th day of July, 1840, by me at Clare Island Lighthouse in lat. $53^{\circ} 45' N.$, and long. $10^{\circ} 36' W.$

ROBERT MEALEY.

TYNE—Track No. 24.

Coast Guard Office, March 25th, 1834.

SIR,—Enclosed I have the honour to transmit for the information of the Lords Commissioners of the Admiralty, copies of two letters this day received,

from Commander Thomas Edward Cole, R.N., Inspecting Commander at Dartmouth; and Lieutenant John Bulley, R.N., Chief Officer of the Coast Guard Station at Torcross, together with the document referred to therein, which appears to have been thrown overboard in a bottle on the 4th of January last, from H.M.S. *Tyne*, in lat. $46^{\circ} 37' N.$, long. $16^{\circ} 53' 15'' W.$, and was picked up by the latter officer at 5h. P.M. on the 16th instant, in the surf on the beach at Hallsands, about one mile north of the Start Point.

I have the honour, &c.,

WILLIAM BOWLES, Comptroller General.

Dartmouth; March 22nd, 1834.

SIR,—I beg leave to enclose a letter from the chief officer at Torcross, with a paper found in a bottle on the beach of that station, and which is directed to be forwarded to the Admiralty.

I am, &c.,

THOMAS EDWARD COLE, I.C.

Comptroller General, Coast Guard, London.

Torcross, March 17th, 1834.

SIR,—The enclosed paper having been found in a bottle picked up in the surf on the beach, at Hallsands, about one mile north of Start Point, at 5h. P.M. yesterday, 16th instant. I therefore beg to forward it to you, to be disposed of as therein requested. It has been blowing since the 11th inst., at times strong from the eastward.

I remain, Sir, &c.,

JOHN BULLEY.

To Captain T. E. Cole, R.N., Inspecting Commander, Dartmouth.

"This bottle was thrown overboard from His Britannic Majesty's ship *Tyne*, in lat. $46^{\circ} 37' N.$, long. $16^{\circ} 53' 15'' W.$, by mean of three Chronometers on the 4th of January, 1834. Strong breezes and squally weather at the time, wind S.W.b.S.

"As the object is to ascertain the force and direction of the current, it is particularly requested, if it is picked up, that the place and day of the month on which it is found may be communicated to the Secretary of the Admiralty, London, the Captain of any of His Britannic Majesty's ships, or to the nearest British Consul.

"His Britannic Majesty's ship *Tyne*, January 4th, 1834.

"CHARLES HOPE, Captain."

SYMMETRY—Track No. 25.

A bottle from the ship *Symmetry*, of Scarborough, Captain Smith, on her way from Leith to Buenos Ayres, off Madeira, 9th June, 1825. Picked up at Salt Kay, Turk's Island, after a lapse of ten years, 9th June, 1835.

MAITLAND—Track No. 26.

"H.M. Transport *Maitland* sailed from Port Royal, Jamaica, 10th of March, 1838, with the head quarters of the 14th regiment on board. This bottle was thrown over on the 22nd of April, 1838, in lat. $46^{\circ} 5' N.$, long. $18^{\circ} 19' W.$

(Signed)

"CHAS. HODGSON."

RECENT BOTTLE PAPERS.

The following additional papers have been received, to which we have assigned numbers corresponding with the places of their departure on the chart in our last volume. They are all highly interesting, those that have drifted to the coast of France, as well as those to the coast of Brazil. These papers will in no way interfere with the series now in course of appearing, but will be hereafter collected in a table supplementary to that in our November number, accompanied by a copy of the chart with their tracks.

H.M. STEAM SLOOP *WASP*—Track No. 10 a.

Saint-Martin, le 26bre, 1852.

Le Maire de la ville de Saint-Martin.

Monsieur,—J'ai l'honneur de vous adresser une note jetée en mer par le Capn. John Hay, du sloop de S.M.B. *Wasp*. Elle est venue à terre à la côte sud de cette île; les vents. depuis le moment du jet jusqu'à ce tem ayant été constamment de la partie du S.S.O., souvent à tempête.

Veuillez bien agréer, Monsieur, l'assurance de ma considération la plus distinguée.

ST. RIVIULLE DECHEZEANCE, Maire.

Monsieur le Secrétaire de l'Amirauté Britannique à Londres.

"H.M. steam sloop *Wasp*, 3rd of November, 1852, lat. 41° 9' N., long. 10° W., twelve days from Yarmouth, Isle of Wight. Strong breezes from W. to S.W. Sighted the land about Cape Finisterre the 31st October, and been set to the north-eastward 52 miles since. Observations this day, the first for six days.

"JOHN HAY, Commander."

H.M.S. *RESISTANCE*—Track No. 11 b.

Lloyd's, 2nd February, 1853.

SIR,—I have the honour to transmit to you, by direction of the Committee for managing the affairs of Lloyd's, the enclosed paper, thrown from H.M.S. *Resistance*, found in a bottle picked up on the coast of Sables D'Olonne, and this day received by the committee from the French Consul General.

I have the honour to be, Sir, your most obedient servant,

GEO. A. HALSTED, Secretary.

R. B. Osborne, Esq., M.P., Admiralty.

"H.M.S. *Resistance*, at noon, 7th of September, 1852, lat. 42° 59' N., long. 11° 35' W. Wind N.E., moderate, with showers of rain at times. Current these 24 hours to the southward 11 miles. Bar., 30.20; therm. 68°; surface water, 66°.

M. BRADSHAW, Commander.

H.M.S. *DEE*—Track No. 17 a.

SIR,—I have the honour to transmit to you, by direction of the Committee for managing the affairs of Lloyd's, the enclosed paper thrown from H.M.S. *Dee*, found in a bottle picked up on the coast of Sables D'Olonne, and this day received by the committee from the French Consul General.

I have the honour to be, Sir, your most obedient servant,

GEO. A. HALSTED, Secretary.

R. B. Osborne, Esq. M.P., Admiralty.

"H.M.S. *Dee*, the 11th of November, 1852, in lat. 43° 1' N., long. 13° 16' 15" W. A moderate breeze from the south-westward, with a heavy swéll.

"GEO. T. C. SMITH, Commander."

SCREW STEAMER *LADY SEALR*—Track No. 29 a.

Whitehaven, Dec. 31.—The Hullin Rookfort postman found a bottle on the Drigg shore this morning, which contained a paper, of which the following is an exact copy:—

"Lat. 46° 15 N., long. 18° 20' W., screw steamer *Lady Sealr*, Nov. 7, noon. Engines broke down, and the stuffing-box adrift. Able to keep the ship free with ship's pumps; engine pumps cannot be worked. Laying E.S.E., three knots per hour; trying to reach England; crew and three passengers all well.—*Shipping Gazette*, 3rd Jan., 53."

JOHN BOOTH, Master.

W. I. M. PACKET DEE—Track No. 114 a.

Underwriters' Rooms, Liverpool, 4th Feb., 1853.

SIR,—The enclosed paragraph was cut out of the *Charleston* (So. Carolina) *Courier* of the 19th January, received to-day per U. S. mail steamer *Pacific*, and as it may be valuable to your department, I do myself the honour of forwarding it to you.

I remain, Sir, your most obedient servant,

THOS COURT, Secretary.

Rear Admiral Beaufort, Admiralty.

CURRENTS OF THE GULF.—The *Nueces Valley* of the 1st inst., publishes the following, which was found enclosed in a bottle, eight miles south-west of Arkansas Pass, on Mustang Island. It is signed by Captain Newenham, of the British West India mail packet *Dee* :—

"This makes the fourth bottle which I have thrown overboard from this packet to ascertain when picked up, if ever, the currents of the Gulf, and any other existing stream. For this purpose, I have thrown overboard one off Jacmel, St. Domingo; one off the Colorado Reefs, when proceeding for Havana in April; one in the Mona Passage when going to St. Thomas in May; and this one now when nearly a day out from Jamaica, *en route* for Havana and Honduras.* We are all well on board, some — souls, and have had no serious illness during the four months (November 17th) absence from England.

"WM. NEWENHAM, Lieut., R.N., Adm. Agent."

(To be Continued in our next.)

LOCAL ATTRACTION.

To the Editor of the Nautical Magazine.

Portsmouth, Feb. 21st, 1853.

SIR,—Your review of my labours in the cause of Local Attraction, its effects and obviation, happens at a period when I would gladly be silent in defending the principles I have advanced therein, because in my work you have appeared to question my estimation of the high scientific character and practical experience of one whose death we have since so deeply to regret, and that you assert a boldness in the man who would advance reasons in favour of the adoption of his invention, whilst the system "he thus impugns has saved ships from destruction ever since it was first established,"—this system being "the result of many years' experience of a scientific officer charged by the Government with the important duty of carrying out his own practical conclusions." Before proceeding to comment on this and other charges preferred against me, I will venture to offer a heartfelt requiem for him we have lost. In his correspondence with me, and in his kind and courteous manner whilst I have troubled him on the subject of my instruments and the object I had in view, he gave frequent expressions of the importance to be attached to such could it be successfully obtained, and that he himself had devoted years to the subject. I feel a pleasure in saying that had he been spared amongst us, his generous character towards others scientifically devoted for the benefit of the service, would have prompted me to seek his judgment and experience when in a position to do so.

I have carefully perused the *whole* of your comments, and I rest assured that if my own publication had been as *similarly studied throughout*, the

* It would have been more satisfactory to have had the lat. and long. of the ship when thrown over; we hope the others contain these particulars.—ED. N. M.

principles would have been better understood, and a right judgment offered. I regret to feel that this is not the case; the parts only touched upon being the "Royal arms on the cover," the preface, the tables of deviation at the end of the book, and the diagrams as explanatory of the subject, whereas the whole body of the work is left untouched. I would ask, is this fair? Upon these several points I feel bound to beg the insertion, in your periodical, of such remarks and explanations as I think necessary.

With respect to the "swinging of H.M. ships," I am not so "bold" as to state that such is unnecessary, though I do maintain that too great confidence should not be placed in it from the moment a ship has left her "swinging" port, when even a repetition of the process a week hence in the same port does produce different results, without changing the position of the masses on board. Nor that its being frequently repeated in different ports does not provide a comparatively safer result to go upon. Nor that it is not the best system for obtaining such results in the absence of a better which experience and ingenuity may yet devise, so that in doing away with this method, a well tested substitute, furnishing the amount of a constantly changing error for every geographical change of the ship's position, is not but to be most desired.

Your reference to the conduct of the iron steamboat *Keera*, from Newcastle to Sydney, and that of the iron ship *Thomas Hamlin*, show amongst numberless others of the merchant service, that whilst they must be considered as regarding the safety of their property with the same watchful eye as does the Government for that of our navy, they are alive and anxious for such improvements as will obviate the necessity of "swinging" their ships.

The "body" of my little work, upon being *carefully* read, will show how I have endeavoured to treat a subject so fraught with difficulties, and to lay down a system by which instruments may be constructed, and confidence placed upon them too.

After obtaining my great seal for my "Royal letters patent" of the principles I have advanced, I published the work in question for private distribution, my specification being an embodiment of the work itself, with such additions in the construction of my compasses as the period granted has afforded me. Thus then I have been vain enough to mount those "arms on the cover" which prefigure my patent. The specification since deposited has enabled me to detail the form of instruments, and the practical results of my experiments thereon, which will appear in my issued publications.

Of the Preface I would only say, it is not the work itself!

I am no stranger to the very valuable work published by Captain Johnson, nor of those of many others who have treated on the subject of Terrestrial Magnetism. I have not ventured to introduce into my own, the tables of deviation contained in the former publication, but gathered those I have quoted from the log-books of the different ships deposited in Somerset House by sanction of the Board of Admiralty. Nor have I appended these to show the *uniformity* of deviations, for the treatise itself throughout does not maintain such a question, but only refers to the "amount of regularity."

The explanation you have ventured to afford of the instruments illustrated in the diagrams, I regret to say contains anything but a knowledge of their action; the one chiefly detailed being amongst those introduced to show the error I had discovered, and to establish a long existing doubt as to the truth of the "Inductive Hypothesis" held in dispute between Professor Barlow and Mr. Christie.

It is well, therefore, to refer your readers "to a fuller account than this mere outline."

The conclusion of your review alludes to the "complicated construction," and "liability to derangement," of the instrument proposed. I will simply reply to this, as in the language of the preceding paragraph, "Obtain a com-

prehensive view of the subject, so novel in its character, and then desire a view of the instruments themselves." The instruments I am now hopeful of submitting for the benefit of the service, I have no desire to urge for adoption without a satisfactory test of their merits; or to put them on board a ship and say, there, be confident in them, and don't "swing" any more. Such could not be expected. I will place them on board ships, as I have done, and whilst swinging show their indications of the errors, and repeat the trials on board every ship I can personally attend, and in different latitudes too, and by thus establishing a certainty of their action under all circumstances, submit that they may be substituted for the necessity of "swinging." Their *adjustment* has nothing to do with the ship, such adjustment being an element of their construction, and most simply obtained on shore, and so in any port if desirable.

But to proceed. I cannot imagine how, it being read that "Full printed instructions will be appended to each instrument for its use in taking Azimuth or other observations," should justify the comment of, "which instructions we conclude will contain more particulars of the mode of adapting the compass to compensating the 'local attraction' of the vessel after it is found, so that 'swinging' the ship, even with Lieut. Roberts's compass, does not seem to be dispensed with for finding it." Surely when I am attacked for desiring to obviate the necessity of "swinging ships, by only seeing the advantages of doing it all away in the adoption of my own compass," can it be supposed that I contemplate adding my "novel and complicated construction," as an adjunct to "swinging ships." Those instructions have reference only to azimuths or other observations for "bearings," which become somewhat modified from other compasses.

In conclusion, I will ask if some little reliance is not to be placed upon a few years of my own study, as well as others who have struggled with the same question. Youth should not be shamed with distrust, because it perhaps takes up a subject at a period where others stop, and are satisfied; and backed by fresh researches finds something new, or traces out an error which science is every day developing. It is true I have thus appeared suddenly before the public in this light, but there are many who can testify that my mind has been devoted for years on a series of experiments and investigations, which have involved a large collection of apparatus, to solve this darling project. Nor should it be termed a *speculative invention*, when silently I have followed such under a serious amount of expenditure, for which I have never asked or sought assistance, or scarcely time to pursue my efforts: far otherwise!

I will in due time invite inspection and criticism.

I remain, Sir, your very obedient servant,

JULIUS ROBERTS.

[We have inserted the foregoing at the request of the writer, in reference to the notice of his work on "Local Attraction" in our last. We do not see, however, that there is anything to retract that has been advanced in that notice by our reviewer, for we are not aware it has been termed speculative, and with reference to its circulation the word "private" does not appear on it. Still, we may assure Lieut. Roberts, that although his compass may be looked on with prejudice by Jack, we shall not only rejoice at his success, but shall be always ready to make its advantages known, and to assist him in reaping the reward of his great perseverance and ingenuity.]—Ed.

MAGNETIC VARIATION.

Table showing the mean monthly westerly declination, or westerly variation of the magnet, and the mean monthly dip, at the Royal Observatory, Greenwich, in the year 1847.

	Variation, W.	Dip.
January	22° 48' 18"	68° 58·8'
February	22 45 48	69 0·0
March	22 47 35	68 59·3
April	22 47 28	69 0·0
May	22 46 15	69 1·5
June	22 43 0	69 1·2
July	22 49 33	68 59·1
August	22 56 22	68 59·1
September	22 61 17	68 58·5
October	22 58 45	68 58·7
November	22 55 26	68 56·5
December	22 55 48	68 53·5

The mean variation has been found by taking the mean of two-hourly observations; the mean dip by taking the mean of morning and afternoon observations, made twice a week.

G. B. AIRY.
Astronomer Royal.

SAILORS' HOMES.

The past month has been one fraught with importance to the cause.

Her Majesty the Queen has been most graciously pleased to present the Devonport Sailors' Home with the handsome donation of £100.

Her Majesty and Prince Albert have formally signified their intention to become patrons of what may now be styled the Royal Portsmouth Sailors' Home.

His Majesty the King of Norway and Sweden has been graciously pleased, in consideration of the benefits which his sailor-subjects have received from the Cornwall Sailors' Home, to contribute the sum of £50 towards its funds.

His Royal Highness the Duke of Cambridge has presented a donation of £20 to the Sailors' Home Institution, in Craven Street.

Parliament, following the example set it by its illustrious Sovereign, has voted an annuity of £100 to each of the above mentioned Naval Establishments.

The members of the Mercantile World, aroused to the importance of promoting the comfort and happiness of their own mariners, have begun to act with that noble and munificent benevolence which has ever characterised their efforts in the cause of philanthropy. Availing themselves of the assistance of the invaluable Institution in Craven Street, they have already commenced to subscribe largely to the funds of that National Society which, headed as it is by individuals whose names alone are a sufficient guarantee for success, may calculate upon the most extensive support from the public at large. The Honourable East India House, the great house of Baring, the house of Matheson and Co., &c., &c., stand foremost on its subscription list.

In addition to these we hope ere long to have the pleasure of recording the names, without a single exception, of our great civic bodies. When we remember the enthusiasm, the regal splendour, and the generosity, with which they have ever received, regaled, and rewarded, their distinguished naval chieftains, we cannot but believe that they will contribute, and contribute largely too, towards providing a Home for the humble, though not less useful, defenders of their Country.

QUEEN ADELAIDE NAVAL FUND.

A Meeting of the Committee of this Society, was held on the 14th inst., at Mrs. Skyring's apartments, Somerset House. The chair was occupied by Admiral Sir Charles Adam, their President, who was supported by Rear-Admiral Vernon Harcourt, Captain Sweny, Lieutenant Read, the Rev. J. K. Goldney, the Rev. E. Lilley, Thomas Lewin, Esq., and Thomas Stilwell, Esq. £71 was distributed in grants to various orphan daughters of Naval Officers; and among those relieved was the sister of one of the Officers lost in H.M.S. *Birkenhead*.

We are glad to find the Queen Adelaide Naval Fund is gradually increasing its means of doing good, although we cannot but wish that it were still better supported. The great need of such an Institution was sufficiently shown by a single fact which came before the Committee on Monday. Two members of the Ladies' Committee, having visited one of the applicants, to ascertain the truth of her statement, found that she had actually rescued from a neighbour's fowls the bread which had been thrown to them, in order that it might serve for her own meal. In several cases, too, the fees of the Royal Naval Female School were paid for those who must, otherwise, have been removed, and thus have lost the opportunity of gaining such an education as may enable them to provide for themselves hereafter.

ON HANDLING STEAM SHIPS.

To the Editor of the Nautical Magazine.

SIR,—Having sent you in a former letter a few lines on the handling of Steam Ships, I will, with your permission, occupy a little more of your space on the same subject. I propose saying a few words on what may be expected from them when going with the engines reversed. I will preface my observations by remarking on the "Stern-board" in sailing ships.

When a vessel is sailing close-hauled, her head is forced up into the direction of the wind, owing to the pressure of the water being so much greater on the lee bow than on the weather bow, producing what is called weather helm. In like manner, when she is making a stern-board, the pressure of the water on the lee quarter forces her stern up into the wind, despite of any movement of the helm to the contrary. Let us apply this to the steamer.

In a steam vessel going astern in a calm, if she be perfectly upright, her rudder may, possibly, be of some avail in making her go in the desired direction; but if there be any wind to give her the least inclination, she will go up stern foremost into the wind.

If, therefore, under particular circumstances, it be desirable to cause a steam vessel, when going astern, to go with her stern from the wind instead of towards it, it is only necessary to careen her over to windward, which may be often done by shifting the crew and passengers over to the weather side. The greater the inclination given to the vessel, the more rapid will be the movement, and the less will be the space taken to make it. By following out this idea, a vessel may be made to go nearly straight astern for a considerable distance, by shifting the weights from side to side, according as she swerves from

the straight line, an operation which the writer has found to answer unerringly as often as he has practised it.

In heaving about a sailing ship, it sometimes happens that when she comes head to wind, she hangs a little, and it is uncertain if she will come round. Under such circumstances, the ship may be careened over to that side which was the weather side when the helm was put a-lee; and, as she gathers stern-way, she will pay off in the desired direction. This may be considered a refinement in manœuvring, but it will at any rate be found very much more efficacious than the common practice of shifting the helm.

I am, Sir, your obedient servant,

Bridge House Hotel, London, Feb. 5.

MASTER MARINER.

NAUTICAL NOTICES.

CAPTAIN W. SHERINGHAM, R.N., has secured a patent for Lighting Beacons and Buoys, in Channels, Rivers, or Harbours, and experiments are now in progress at Portsmouth to test their efficiency, under the superintendence of Lieutenant Julius Roberts, R.M.A.

His object is to obtain a safe and certain means of lighting up intricate channels, &c., and pointing out the position of dangerous shoals in the neighbourhood of harbours, thereby rendering local navigation as safe by night as by day.

This he effects by obtaining a brilliant light by the means of conveying a stream of common gas from the shore, through a flexible and well protected tubing, to the beacon or buoy, the ignition of which is instantaneously obtained by the use of the electric current. It is needless to observe, that a perfect control over the light is thereby obtained, and consequently the buoy may be lighted or darkened in an instant of time.

We hear that the trials already made are highly satisfactory, but we shall watch with interest the more conclusive experiments which are shortly to be made on a buoy afloat.

NOTICE TO MARINERS.

DENMARK, WEST COAST OF SLESVIG.—LIGHTS ON SYLT ISLAND.—Information has been received from H.M. Consul at Elsinore, that in the beginning of this month the Danish Government established the two following lights on the north end of Sylt Island.

The westernmost is 66 feet high, with a cupola shaped top, and stands on Ostendic Point, in 55° 3' North, and 8° 28' East from Greenwich. The other, which is placed 2,910 yards farther to the eastward, is 102 feet high, with a square top. Both lights are visible at the distance of 14 to 16 miles.

These two Lighthouses kept in one (bearing S.E.b.E. $\frac{1}{4}$ E. magnetic) lead over the deepest part of the bar, in 15 feet at low water, into the Lister Deep; but immediately after crossing the bar the vessel must alter her course more to the eastward, in order to keep in the channel. The Lighthouses are most conspicuous when seen from the northward. The two old Beacons of List, and also the two on Romo Island, have been removed.

On the southern extremity of the same island (Sylt), in order to distinguish Hornum Point from the uniform appearance of the adjacent coast, and also to warn vessels of the dangerous shoals which extend from thence to the south-westward, a Beacon has been erected in 54° 45' North, and 8° 17' East of Greenwich. It is of a circular form, and rises to the height of 104 feet above the sea; and at the foot of this beacon a sheltered place has been prepared for shipwrecked mariners, who will find benches on which they can repose, and cases containing bread and water.

LIGHT AT THE ENTRANCE OF THE NEW HARBOUR AT NAPLES.—The Neapolitan Government has given notice, that on the 1st of November last a new small Light was established at the outer extremity of the Southern Pier, which forms the Porto Militare at Naples. It is a Fixed Light, but varied by Flashes, at intervals of three minutes. It stands 36 feet above the mean level of the sea, and is visible ten miles in fine weather.

The Light bears S $\frac{1}{4}$ E. magnetic, and 250 fathoms distant from the Gran Faro, or principal light, which is placed on the elbow of the adjacent pier of the Porto Mercantile, and which revolves with flashes every two minutes. Moreover the new light bears S.b.W. $\frac{1}{4}$ W. 296 fathoms from the small fixed Red Light standing on the end of the mercantile pier.

The entrance of the Porto Militare faces the E.N.E., and lies between the two last mentioned lights and the new one, and is about 220 fathoms wide; to enter, therefore, by night, keep the new light on the port, or left side, and not at a less distance than 20 fathoms, in order to avoid the shallow that projects from the pier-head to the eastward; and when the light bears W. $\frac{1}{4}$ S. the vessel should promptly haul in to the westward.

Whereas to enter the Porto Mercantile, a vessel must keep the two bright lights to the westward, and steer so as to be able to haul round the Red Light into the harbour; where she should be prepared to anchor very quickly, on account of its narrow entrance.

FIXED LIGHT AT GALVESTON (TEXAS).—Her Majesty's Government has been officially informed, that a Fixed Light has been established on Bolivar Point, which forms the Northern side of the entrance to Galveston Harbour, 29° 22' 2" North, and 94° 45' 33" West of Greenwich, and which lies 4 $\frac{1}{4}$ miles N.W. $\frac{1}{4}$ W. from the usual channel over the bar.

The Tower is painted white, and the light being 75 feet above the level of the sea, is in clear weather visible about 12 miles.

As a strong current from the Eastward generally prevails on that coast, Masters of vessels bound to Galveston are recommended to make the land some 20 or 30 miles to the Eastward of it, and then to run along the coast in 6 $\frac{1}{2}$ fathoms water. They should not approach the harbour in less than six fathoms without a pilot; for whom, if they should have to wait, they may anchor in that depth, with the light bearing N.W.b.W.; or if they prefer keeping under sail off and on shore, they ought not to bring the Light to the Northward of that bearing.

A Light has been also established at the entrance of Matagorda, but the description of it has not yet been received.

ERICSSON'S CALORIC SHIP.*

The great experiment in navigation, namely, the propelling of a ship by a new motor, or a novel application of the old agent, caloric, has long been in progress by its inventor, Captain Ericsson, the eminent American engineer. The machinery has been completed; a fine vessel has been built at New York, and the American mail, lately received, has these "lines of fair encouragement:"—"By a telegraph communication *via* Boston, we learn that the Caloric ship *Ericsson* made a tolerably successful trip in New York harbour, attaining a speed, with wind and tide in her favour, of twelve knots per hour." The leading principles involved in the construction of this vessel have already been submitted to the public; but the near consummation of the enterprise has attracted so large a share of public attention, that it is desirable to give a more complete description of the plan, which we condense from a recent number of the *New York Daily Times*.

* This notice should have appeared in our last number.

The *Ericsson*, taking the name of her inventor, in appearance resembles a first-class steam vessel. She is owned by a company of merchants in New York. The builders of her hull were Messrs. Perrine, Patterson, and Stack, of Williamsburg. Her engines are the workmanship of Messrs. Hoag and Delamater, of New York. The register of the ship is 1,903 tons; her length is 250 feet, with 26 feet 6 inches depth of hold, and 40 feet breadth of beam. Her paddle wheels, which are similar to those of the Collins steamers, differing only in being somewhat smaller, are 32 feet in diameter, with buckets of 10 feet 6 inches. The decks are abundantly provided with life-boats. The peculiar conformation of the boilers has served to produce very essential modifications in the exterior as well as the interior of the vessel. Thus, on the upper deck, in place of the ordinary smoke-funnel, as in steam ships, the Caloric ship presents four small tubes, only 30 inches in diameter. The two corner chimneys are attached to the cylinders of the engine, and the remaining two protect the hold from the impure and heated air. No impeding machinery serves to hinder free passage of the upper deck fore and aft. The four chimneys, each resting upon a pedestal, are formed, two of sheet iron, and two of wood. Beside each pair of these pipes is a well, extending to the bottom of the ship, through which a current of cold air is carried down to the fire-room. The mouths of these "wells" are carefully covered with tarpaulins, and the room occupied is hardly equal to a hatchway. Through the open space thus afforded, an additional advantage is given for the working of the force pumps, the pipes of which are carried up through the entire length, projecting upon the upper deck in a manner very convenient for the seamen to work them to free the ship from water. In the engine-room the peculiarities of construction of the vessel begin to appear. The compact form of the engine leaves a free space on each side of the ship, from fore to aft, both above and below; and the shaft which turns the paddle-wheels is concealed between decks. The dining-saloons are located aft of the engine, and the state-rooms lie below; easy access to them being obtained by stairways. The appointments of the saloons, state-rooms, and other parts of the vessel intended for the accommodation of passengers are perfect and sumptuous.

The leading peculiarity of the Caloric ship, it is well known, is in the application of heated air to the propulsion of the vessel. The engine consists of two pairs of cylinders, connected in their action, but not placed side by side. Each pair is composed of two cylinders, of which the lower one is much the larger. The upper is termed "the supply cylinder;" the lower the "working cylinder." The diameter of the working or lower cylinders, is 168 inches; of the upper, 137 inches each. The position of the cylinders is exactly in the centre of the vessel.

The operation of the engines is remarkably simple. A fire is kindled in the furnaces attached to the lower cylinders, the flames being removed to a distance of about five feet from the bottom of the cylinder. The air thus heated, seeks a vent, which is readily found in a series of valves properly arranged for the purpose. The cylinders being each provided with a piston fitting closely within it, but so contrived that the pistons of both cylinders operate simultaneously, the vacuum created by the escape of the air from the working cylinder causes the descent of the lower piston; this, of necessity, draws down with it the piston of the supply cylinder, and the work of the engine is thus fairly commenced. A series of valves, each two feet in diameter, is placed in the top of each supply cylinder, and these valves instantly open at the descent of the pistons; a current of cold air rushes in, which passes down, following the piston of the upper cylinder, until it is stopped by the regenerator—the paramount contrivance, invented by Captain Ericsson. He found, by experiment, that the absorption and radiation of heat from metallic surfaces, are nearly instantaneous, and that the expansive force of air when its volume

is doubled by the application of heat was at least equal to the power of steam; and the application of this principle is the great feature of the Caloric ship.

The regenerator is little more than a series of fine wire nettings of iron, placed side by side, to the thickness of 12 to 20 inches. As the air passes through this mass of metallic surfaces, penetrating through the minute cells formed in the interstices of the wires, it imbibes a greater volume of caloric, which increases in temperature as the current approaches nearer to the fire beneath. The *maximum* of heat absorbed by the air in this passage through the regenerator is 450°. The *minimum* necessary to be applied from below is 30°, making an aggregate of 480°, at which point the volume of air which has entered the engine is exactly doubled, and by the expansive force sets in motion the crank connecting the machinery, producing a revolution of the shaft, by which the paddle-wheels are revolved, and the vessel is put in motion. The manner in which these various performances transpire is remarkable. As the air passing through the regenerator has performed its work in causing the revolution of the crank, which rests upon the piston of the working cylinder, it is made to re-enter the apparatus by the upward pressure of the now ascending piston. As it passes through the regenerator, in exact reverse order, it loses the volume of heat which it had before acquired, and becomes cooler as it approaches the upper surface of the regenerator. It will thus be seen that the regenerator presents two different surfaces; one, on the upper, is the cooler, because most directly opposed to the current of cool air entering the cylinder from above; the other, warmed by the surfaces below, preserving a warm exterior; and by this contrary action the current of air, which is alternately drawn through or expelled from it, undergoes essential modifications of temperature. A very small per centage of the volume of atmospheric air thus employed is permitted to go to waste.

The Caloric principle involves no useless expenditure of material. The supply of fuel required to continue the operation of the engine, is but a few pounds of anthracite coal. There are no boilers or large furnaces, and the danger from fire can never be so great as to create apprehension; while, as an additional means of security against accident, the entire floor of the engine-room is paved with a corrugated cast-iron pavement, the plates of which are so carefully joined together, that the chance coals can neither penetrate to the woodwork, nor the water enter through the interstices left in the bed-plates, as is frequently the case in steam ships. A number of advantages are thus combined, not only in the engine proper, but in connection with its various appurtenances.

The construction of the furnaces, and the small amount of fuel required to feed them, cause a great saving in the stowage room of the Caloric ship, by which it gains largely in accommodation for merchandise and freight. The freightage of the ship will be about 1400 tons. The freight deck, strongly secured from accidents, is roomy and cleanly. It is perfectly clear from stem to stern, in consequence, mainly, of the small space occupied by the machinery of the ship, and affords, beside the freighting space proper, a considerable supply of store-rooms and recesses, always useful for the stowage of precious articles. The coal-hold is below the freight deck, and is abundantly spacious to contain the entire mass of fuel required for the outward and return voyages of the ship. It is, in fact, contemplated that the vessel will be able to carry her coals for the longest trips out and back, even should the voyage be extended beyond the customary route of the American packet steamers. The advantages are secured, besides, of a saving of room, security from spontaneous combustion, and a greater degree of cleanliness, from the use of the anthracite than by the employment of the British bituminous coals.

The experiments already made with the engines of the new ship promise a

very auspicious commencement of her career. The operations of the machinery, so far as the different portions have been tried, are perfectly smooth and accurate, and the revolutions of the wheels of the vessel have taken place with all the regularity and order which was to be expected of them. The public will await the result with eager interest. But one opinion can be expressed in regard to the probabilities of the plan. The necessity of a new motive power is every day more pressing. Advantages must be gained by the application of the leading principles of nature to new uses, and the inventor who shall accomplish this feat will entitle himself to the lasting gratitude of the commercial and travelling world. It is to be hoped, in view of the labour and ingenious resources which have been expended upon a project that seems so feasible as this, that the honour of the new *motor* may be finally awarded to the studies of Captain Ericsson.

NEW BOOKS.

GREAT CIRCLE TRACKS AND DISTANCES, and *Azimuths without Calculation.*—By R. Russell.

The present extensive application of the principles of Great Circle Sailing, especially in connection with the "composite route" to and from Australia, renders important every appliance connected with navigation. The successful results already obtained, prove that much has been accomplished. We have, however, before us another method, by Mr. R. Russell, of conducting this system of sailing, which recommends itself to the attention of those who are for adopting the Great Circle. Mr. Russell's may be denominated the graphic method of conducting Great Circle Sailing, for it consists of a chart of the world, on Mercator's projection, on the limited scale of seventeen degrees to the inch. Connected with this is another Mercator's chart on the same scale, without coast line, but with the equator, the parallels, and the meridians corresponding with the foregoing chart, excepting that the meridians instead of being reckoned from Greenwich, are numbered from the vertex of a series of Great Circles drawn on it. These Great Circles are 45 in number, one for each alternate degree, but are only completed as far as the 62nd parallel of latitude. There is a book of tracing paper supplied with these, with a line for the equator on each sheet; and by a very simple arrangement the Great Circle, which connects the ship and her destined port, may be traced on the paper from the skeleton chart, and, if desirable, may be transferred to the other, the whole process being easily and readily performed. For sailing vessels the track need not be drawn on the chart; and for steamers we should prefer that the track should be laid down on the general chart, by means of the Tables for facilitating Great Circle Sailing published by the Admiralty, by which means a greater degree of correctness would be secured than by the use of a chart on so small a scale as that of Mr. Russell's. Doubtless exactness for steamers is desirable, for we have seen the track of one of the Ocean Steamers, from the Channel to a point off Cape Race, made to correspond with the track of a Great Circle, previously laid on her chart, to a degree of accuracy beyond anything that could be anticipated. But it is a very different case with sailing vessels. In the very numerous cases in which we have seen the charts of sailing vessels which have made excellent runs on the principle of the "composite route" to Australia, in no instance have we seen a case in which it has been practicable throughout the whole distance to follow strictly the contemplated track.

The object to be attained in tracing the Great Circle on the chart is to ascertain that the course does not lead to land or rocks; or if it does, to see to

what extent the ship should deviate from the arc of a Great Circle to avoid such obstacles. For this purpose Mr. Russell's method will be found very valuable, more especially in connection with the composite route. For instance, masters of vessels bound to Australia, adopting the favourite track of the composite route of 51° as the maximum latitude, might trace out permanently the Great Circle, the vertex of which is 51° ; and as often as the ship's place is determined, they will at once see whether they can pursue it always clear from rocks or islands. This process might be repeated from day to day with little trouble; and this indeed we conceive to be the principal value of Mr. Russell's method.

He, however, applies it for determining the courses and distance sailed. With regard to his courses, we cannot anticipate their being very approximate with this chart, when they depend on the comparison of the tangents of a circle the diameter of which is little more than five inches. And since the courses are given with great exactness by Inspection, in Towson's Tables, they will no doubt be exclusively employed for that purpose, especially since the number which we know to be in circulation plainly indicates that every mariner who practises Great Circle Sailing is in possession of a copy.

The distance, as calculated by either method, is but an approximation to the truth; and since the calculation of the true distance is required, rather in coming to a determination respecting the merits of different routes than in the actual practice of navigation, we consider that the more exact, although more laborious, method previously in use for this purpose should be followed.

LIVERPOOL.—The shipbuilders of this town have come to the wise resolution of helping themselves, instead of calling upon Hercules to pull their wheel out of the clay, and the consequence is, that the trade of shipbuilding is coming back again to Liverpool. First in this movement is Mr. Laird, whose efforts in relation to iron shipbuilding have deservedly advanced his reputation, and brought him a cloud of commissions to build other ships. In addition to the extensive yard at Birkenhead, Mr. Laird has taken the yard next the Dingle, formerly occupied by Messrs. Vernon and Son, but which of late years has been lying idle. At the Birkenhead yard Mr. Laird is at full work building the African screw steamers; and at the Dingle yard he has commenced operations, having erected some machinery and furnaces, and a number of men are already employed in this yard laying down the keel blocks and erecting the scaffolding for a large iron screw steamer, which will be forthwith commenced, and this long neglected place will gradually be transferred into a scene of the busiest industry. Next comes the yard of Messrs. Vernon and Son, which is equally alive with iron work for the Danube boats. And last of all come Messrs. Jordan and Getty, who have brought their iron ship up to the last two courses of plates. They are also deepening the *Iron Prince*, screw steamer, three feet. This vessel will be remembered as sailing between this port and Wales a year or two ago. It has been found that this vessel can be safely enlarged to that extent, which will add materially to her carrying powers, and of course make her a more profitable vessel. These builders have further taken the contract for the hull of the new Woodside boat from Messrs. Forrester and Co., the latter gentlemen making the engines. This boat will be laid down immediately; her dimensions are 110 feet long, 20 feet beam, and 8 feet deep. She will differ very little from the other boats, but she will be somewhat better finished, and, possibly, have a cabin for ladies. It is proposed to place the steering-wheels in the centre of the ship, the steersman occupying an elevated position; and as some platform will be required for this purpose, it would be well to consider whether a deck-house something like that on the *Satellite* could not be erected as a place of shelter in wet weather. At the same time there might be a contrivance introduced by which passengers could step on and off a platform level with the landing-stage, in-

stead of the awkward method at present in use. But to return to iron ship-building. There is every reason to believe that it is likely to be conducted on a larger scale than ever at this port. It is more probable that iron shipbuilding will gradually supersede wood, and that the screw, in some modified form not yet discovered, will substitute the use of sails. If we are to believe all we hear, the great obstacle to the use of iron in ships—namely, “fouling,” has been overcome. Should this prove to be correct, the question of iron or wooden ships will be at once settled. If an iron ship be sent to China or any other long voyage, she is almost sure to come home with her bottom covered with barnacles, which impede her progress, injure the iron, and make the vessel expensive to be kept clean. But remove this evil, and the only obstacle to the general use of iron is taken out of the way. Many minds are directed to this subject, and it may be that more persons than one will discover the remedy simultaneously. But whoever finds it out will have nothing to do further to make his fortune.—*Liverpool Courier.*

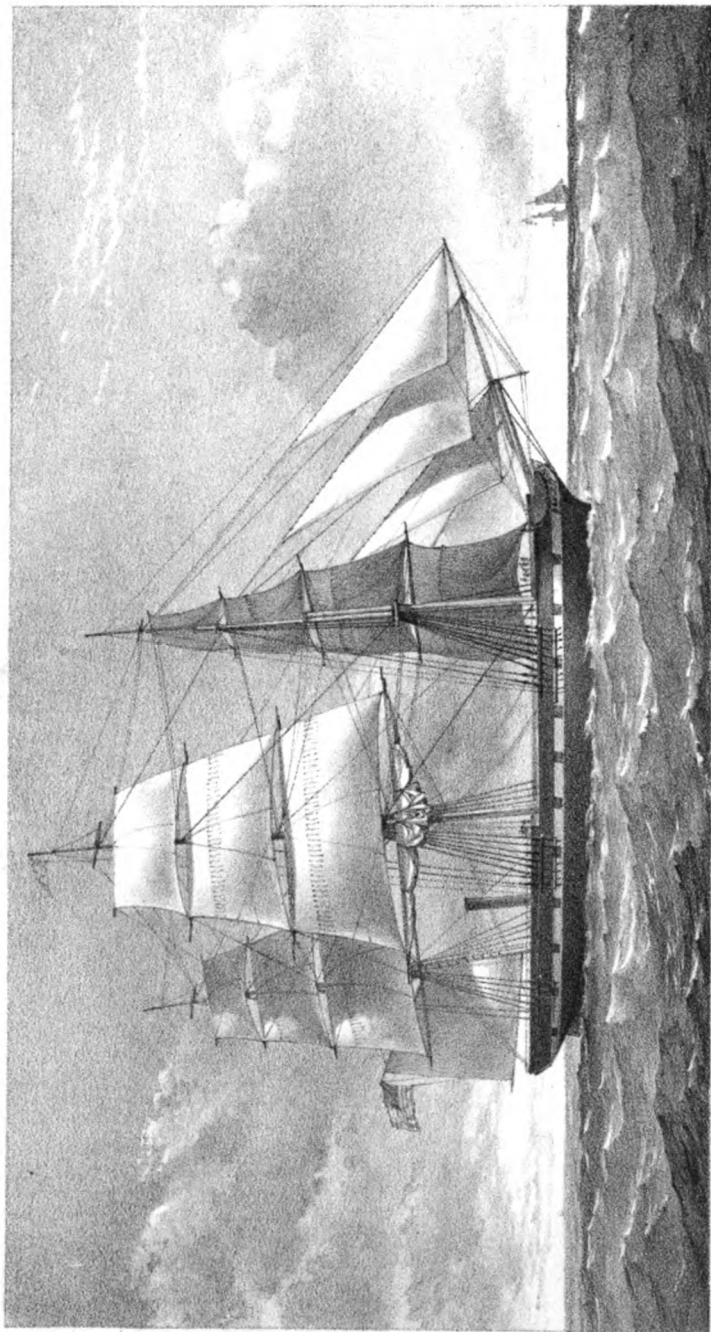
METEOROLOGICAL REGISTER.

Kept at Croom’s Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory—
From the 21st of January, to the 20th of February, 1853.

Month Day.	Week Day.	Barometer. In Inches and Decimals.				Thermometer in the shade.				Wind. Quarter. Strength.				Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		
21	F.	29.48	29.38	45	45	48	47	SW	W	2	4	or (1)	bcp (3)		
22	S.	29.55	29.63	36	40	34	42	NW	NW	4	6	bc	qbc		
23	Su	30.03	30.09	38	40	36	42	N	N	5	5	qbcp 1) (2)	qbc		
24	M.	30.16	30.10	36	41	34	42	N	N	3	2	bc	o		
25	Tu.	29.80	29.68	37	41	35	41	SE	E	1	1	o	o		
26	W.	29.64	29.64	35	38	33	39	NE	NE	2	2	bc	o		
27	Th.	29.80	29.76	34	38	30	40	NE	NE	1	3	bc	op (3 (4		
28	F.	29.70	29.76	36	41	36	42	NE	NE	2	3	op (1	o		
29	S.	29.85	29.85	39	40	37	41	NE	NE	2	2	og	og		
30	Su.	29.82	29.78	37	41	36	42	W	W	3	2	o	or (4		
31	M.	30.10	30.17	34	43	31	44	NW	W	2	2	hm	b		
1	Tu.	30.17	30.17	28	36	27	37	E	E	1	2	of	bef		
2	W.	30.10	30.05	31	41	28	42	E	SE	1	1	bef	bc		
3	Th.	29.70	29.56	36	38	33	39	SE	E	2	2	og	o		
4	F.	29.52	29.54	30	40	34	41	NE	NE	3	4	owr 1)	or (4)		
5	S.	29.72	29.76	34	39	32	40	NE	NE	2	3	ors (1) (2)	bc		
6	Su.	29.90	29.84	37	39	36	40	NW	NW	1	1	o	on		
7	M.	29.49	29.43	38	41	35	42	S	S	2	3	o	bc		
8	Tu.	29.29	29.21	30	38	35	39	SE	SE	2	3	o	o		
9	W.	28.96	28.95	37	39	27	41	E	E	3	4	bc	og		
10	Th.	29.10	29.16	35	35	34	36	NE	NE	4	6	odr (2)	qors (3) (4)		
11	F.	29.35	29.32	31	33	30	34	N	N	4	5	bc	qbeps 3) (4)		
12	S.	29.36	29.37	30	32	29	33	NE	NE	4	5	beps (1) (2)	qos 3) (4)		
13	Su.	29.64	29.68	31	33	29	34	NE	NE	2	4	bc	beps 3)		
14	M.	29.76	29.80	29	32	28	33	NE	NE	1	1	beps 2)	ops (4		
15	Tu.	29.78	29.80	26	32	24	33	SW	N	1	1	o	o		
16	W.	29.76	29.74	30	35	27	36	N	NE	2	4	beps (2	bc		
17	Th.	29.70	29.62	30	32	27	33	N	NW	5	4	qbeps 1)	os (3		
18	F.	29.46	29.45	26	31	25	32	N	N	5	6	qbeps 1) (2)	qbc		
19	S.	29.54	29.64	26	30	21	32	NE	NE	3	4	bc	bc		
20	Su.	29.77	29.82	26	34	22	35	NE	NE	3	4	bc	beps (4		

January, 1853.—Mean height of the barometer = 29.602 inches; mean temperature = 42.1 degrees; depth of rain fallen, = 2.05 inches.

Letter on the *Variation* received. Our notices of *New Books* unavoidably deferred to our next.



T. G. DAVENPORT, ILLU.

—Day's Sun, Lint. to The Ocean.

U. S. STEAM SHIP "MISSAUCHUISSETTS"
Forbes' New Fig.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

APRIL, 1853.

THE AUXILIARY SCREW PACKET SHIP MASSACHUSETTS.—*Forbes'*
New Rig.

DEAR SIR,—Having introduced into the mercantile marine of the United States a peculiar rig for ships, which combines economy, safety, and convenience, and which has been approved by all who have tried it, I beg leave to submit to your readers a brief description of it, in the hope that it may come into more general use and materially lessen the labour as well as the risk of navigating the ocean with such crews as we are compelled to take. The principle of this rig has long been adopted in schooners having yards on the foremast, and is, therefore, only so far new as to have been carried out for the first time in the auxiliary screw packet ship *Massachusetts* and the auxiliary screw barque *Edith* in 1844-45.

The lower yards and the topgallant yard are in the same position as in the ordinary rig; but the topsail and topgallant sail are so divided as to make three sails instead of two. The topsail being exactly of the size of an ordinary double reefed topsail, the yard being parallel to the heel of the topmast, where the topmasts are fidded forward of the lower masthead; and to the head of the lower mast where the topmasts are (as they ought to be) fidded abaft the masthead; this renders it necessary to have the lower mastheads longer, by several feet, than in the old rig. The next sail above the topsail, representing the upper half of the topsail of the old rig and a fraction of the old topgallant sail, is called the topgallant sail, and the old rig topgallant sail is in the new rig called the royal, while the royal of the old rig

becomes the skysail of the new rig. As I consider it important to have the sail as much in the body of the ship as possible, and at the same time so dispose of the canvass and spars that the sails can be used in different places, I make the foreyard of the same length (excepting a slight difference in the yardarms) as the main topsail yard; the fore topsail yard the same as the main topgallant yard, the fore topgallant yard the same as the main royal yard, and so on with the mizen, so that the yards and sails on the fore fit on the main one stage higher up, those on the mizen fit on the fore one stage higher and on the main two higher.

There must of course be a difference in the diameter between lower yards and topsail or topgallant yards although they may be of the same length. The principal advantages of this rig over the old are that by cluing down topgallant sails in a squall the ship is practically reduced to double reefed topsails by the watch in a moment, the sails are more easily managed, set better on a wind, can be furled snugger in a gale, and are much less subject to wear out; in short the ship can be taken care of in bad weather by the watch as well or better than the ship rigged after the ordinary fashion by all hands. It is well known to all who have been at sea that much of the anxiety to Captain and officers, and much of the labour of the crew, and the wear and tear of the ship, occur on first leaving port, before matters are organized, and especially on leaving ports in the East Indies and China during the contrary monsoons. It often happens that the strength of the men is impaired by diseases, as fever, ague, dysentery, &c., in these ports, at such times the new rig is particularly valuable; indeed, sailors have become so scarce and so inefficient that the *rule* is for ships to sail only half manned, because they cannot get good sailors at any price. It is, therefore, becoming more and more important to adopt some means of taking in and making sail, and I think I have accomplished this without in any way impairing the good qualities of the ship in other respects.

I advocate fidding the masts abaft for the following reasons, both in steamers and sailing vessels:—The topgallant masts and royal masts can be housed without interfering with the sails next below; so that topgallant sails can be carried with the royal masts housed and topsails can be carried when the topgallant masts are housed. The strain on the trussle trees is also divided between the topmast (say topgallant of new rig) and the lower yard, which, in merchant ships, generally hangs to the chock formed of the lower mast head.

It is true that the necessity for housing topmasts does not often occur in sailing ships; but it is equally true that when it does occur it is very important to house them speedily, as when a day-foam is coming on in China, or a hurricane at Mauritius, while at anchor, which operation has to be performed at the latter port whether you wish to or not by order of the harbour-master.

In steamers, and particularly that class of auxiliary steamers now coming into use, and in vessels of war the operation of housing masts ought to be often performed; and no one will hesitate to admit that

there is a certain amount of convenience and safety in being able to make sail, equal to double reefed topsails and courses, while the topmasts are housed. The steamers *Massachusetts* and *Edith*, and lately the U.S. steamer *John Hancock*, belonging to the surveying expedition lately sailed under the command of Captain Ringold, have their masts fidded abaft, and they are so contrived that with the aid of screw fids their masts can be housed without starting a lanyard. The ship *Flying Childers*, of 1,200 tons, which lately sailed from Boston for California, also has her masts fidded abaft.

The *Samoset*, *Reindeer*, *Mermaid*, *Lantao*, *Scargo*, *Hypographe*, and several others, have theirs fidded before the mastheads, the only reason for which is that it *looks better*; and I am ready to admit that the new rig does not look so well in port as the old rig, but this ought not to be taken into the account when the advantages are so great. Many people, when they first see a plan of the rig, think that the weight aloft is greater, and that this is a disadvantage, and that the sails, being in smaller pieces, are not so efficient. As to the weight, I would remark, that if the whole apparatus of the new rig were put into the scales and weighed it would no doubt weigh a little more, but as the heavy topsail yards do not go above the cap, and as the yards and the canvass above these sails are lighter, the effect to heel the ship under canvass is no greater in the new rig than in the old. It is no doubt true that the longer the sheets of canvass the better for propulsion, provided they can be as well spread; but I contend that in the new rig the topsails and topgallant sails can be set flatter on a wind, and the longer the sails are the greater the necessity for the new rig, for it is well known that it is next to impossible to swing up a large ship's topsail without a very considerable bend in the topsail yard, and next to impossible to reef it snug in a dark night with the usual crew.

Each topsail and topgallant sail has only one reef in it, and the points are fitted so that the sail reefs to a jack stay on the yard above the binding jack stay or batten, both legs of the points being before the sail as in a man-of-war's courses. There is another advantage in the new rig, which is, that in case of carrying away a topgallant mast (topmast of old rig) you can still set double reefed topsails, and you can get up another topmast in any weather, and often when it would not be safe to attempt it in the old rig.

The first cost of the new rig is greater, particularly where mechanics are not accustomed to it, for there are more blocks, more iron work, more ropes, &c., but the economy of the new rig in the long run is vastly greater, both in the wear and tear of the ship and the crew.

As a striking instance of the value of the rig I may mention that one house near Boston has put it on three ships, and that without consultation with or argument from me!

The owner of one of the lines of Liverpool and New York packets rigged the *Great Western* something after the fashion of my rig, the difference being that the lower topsail yard was a standing yard and of the size of a close reefed topsail; this modification did not prove

to be an improvement as the ship was altered to the old rig after making two voyages, or more, to Liverpool.

There is one packet ship from Philadelphia to Liverpool rigged in a similar manner, and the captain likes it. I cannot doubt that if the rig is adopted in England it will soon become *the rig* for all ships, and will be found to combine economy, safety, and convenience.

I am very truly your servant,

To the Editor of the *Nautical Magazine*.

R. B. FORBES.

February 16th, 1853.

THE STEAM ROUTE FROM SINGAPORE TO SYDNEY, VIA TORRES STRAITS.—By G. W. Earle.

(Concluded from page 123.)

TORRES STRAIT, which separates New Guinea from Australia, was discovered in 1606 by a Spanish navigator, Luis Vaes de Torres, the second in command of a fleet of three vessels which sailed from Peru to search for the Tierra Austral, or Great South Land. Having parted company with the Admiral, Quiros, near Espiritu Santo, Torres steered to the westward, and soon arrived among the reefs scattered over the strait which appropriately bears the name of the first discoverer. The strait was passed with safety, but as the navigation occupied a period of two months, great caution was evidently found necessary. In the early part of the same year, six months previous to the arrival of Torres, the first recorded visit to the Australian continent was made by a *jagt*, or sloop, called the *Duyfken*,* which was despatched by the Dutch Governor of Bantam in November of the previous year for the purpose of exploring the western coast of New Guinea. The discovery of Torres was not made public until 1762, when Mr. Alexander Dalrymple, who was present at the capture of Manila, found among the archives of the Casa del Gobierno, the duplicate of a letter forwarded by Torres to the King of Spain, in which his discoveries were recorded. Up to this time, New Guinea had generally been represented in the maps as forming a part of the great Australian continent. Captain Cook, in the *Endeavour*, was the next explorer of this strait, one of the objects of his first voyage having been to ascertain if the discovery of Torres was authentic; and, sin-

* This little vessel is called *Duyfhen* in all English works, which probably originated in a clerical error in the translation of Tasman's instructions, which had been obtained by Sir Joseph Banks, and through which the first intelligence of this voyage was made known. The *Duyfken*, (*Anglice* Dovekin or Little Pigeon,) about forty tons burthen, is one of the most remarkable vessels that ever traversed the Eastern Seas, and her name is often recorded in the old Dutch histories. She was tender to the first fleet which left Holland for India, and having parted company off the Cape, on the return voyage, was the first to arrive in Holland.

gularly enough, the tact and judgment of this prince of navigators led him to strike out a track which three quarters of a century of subsequent explorations and surveys have proved to be the most safe and practicable between Cape York and the Indian Ocean. Next followed Captain Bligh in the *Bounty's* launch, and afterwards the *Pandora's* boats, this vessel, which had been sent to the South Seas to capture the mutineers of the *Bounty*, having been wrecked during the return voyage on the N.W. side of what is called the "Pandora's Entrance," through the Barrier Reefs. Captain Bligh, with the *Providence* and *Assistant*, passed through the Strait a second time in 1792, when on his voyage from Tahiti with plants of the bread fruit for the West India Islands, and on this occasion struck out a new route along the south coast of New Guinea. The passage through the reefs occupied nineteen days.

Up to this period the passage of the Strait had only been attempted by government vessels, and such were the difficulties attending the navigation, that probably the track would never have been adopted by merchant vessels had not circumstances led to a great increase of traffic between the Pacific and Indian Oceans. In 1788 a penal settlement was formed at Port Jackson, on the east coast, and whole fleets of transports were employed in conveying convicts and stores from the mother country. These ships were taken up for the outward voyage only, and were discharged after landing their freight at Port Jackson, when they had to proceed elsewhere to seek cargoes for the homeward voyage. As the trade with China was not then open, the ports of India alone offered a chance of return freights, and it became the object of the commanders to arrive there as speedily as possible. During the summer season the southern route to India *viâ* Cape Lieuwen was found to be practicable, but the constant succession of heavy westerly gales during the winter proved too formidable even for the powerful vessels then employed in the transport service, and the northern route, through the Pacific and along the north coast of New Guinea was adopted, which, although rather a round-about course, had the advantage of being attended with constant favourable winds and fine weather. As might be expected, the route through Torres Strait, by which so great a distance could be saved, was soon attempted. In 1793, two large ships, the *Hormuzeer* and *Chesterfield*, sailed from Norfolk Island for India, the commanders having agreed to pursue the route through Torres Straits. The ships entered the reefs to the north of Murray Islands on the 20th of June, and struck out a track nearly identical with that pursued by Captain Bligh in the *Providence*, but so great were the difficulties of the navigation that they did not pass out clear to the westward until the 31st of August, the passage through the Strait thus occupying a period of *seventy-two* days.

The route through Torres Straits now fell into disrepute, and the passage was not attempted again until 1802, when Captain Flinders, in the *Investigator*, passed through on his way to survey the Gulf of Carpentaria. The *Investigator* entered the reefs by a wide passage

in lat $9^{\circ} 45' S.$, a little to the north of Murray Islands, and pursued nearly a direct course to Prince of Wales Island, near the western entrance of the Strait. The passage occupied five days, but a shorter period would have sufficed had not some delay been necessary to fix certain points for the guidance of future navigators. The lateness of the season (November) was unfavourable for a quick passage, as the trade-wind then becomes light, and spurts of the N.W. monsoon are to be expected. Flinders seems to have not been free from anxiety on this point. In concluding his account of the passage, he says:—“It was this apprehension of the N.W. monsoon that prevented me from making any further examination of the Strait, than what could be done in passing through it; but even this was not without its advantage to navigation, since it demonstrated that this most direct passage from the southern Pacific or Great Ocean to the Indian Seas, may be accomplished in *three days*. It may be remembered that the reefs on the north side of the Pandora's Entrance* were passed at six in the morning of October 29th; and that after lying two nights at anchor we reached the Prince of Wales Islands at three in the afternoon of the 31st; and nothing then prevented us from passing Booby Isle, had I wished it, and clearing Torres Strait before dusk. Our route was almost wholly to seek, and another ship which shall have that route laid down to her, may surely accomplish the passage in the same time; it must, however, be acknowledged that this navigation is not without difficulties and dangers; but I had great hope of obviating many of them, and even of finding a more direct passage by the south of Murray Islands in the following year, when I should have the assistance of the *Lady Nelson* in making a survey of the Strait.”—*Flinder's Voyage*, vol. II. p. 123.

The recommendation of this celebrated hydrographer was not heeded, and the Investigator Passage through Torres Strait speedily became the favourite route for ships bound from the southern colonies to India, during the winter season of the southern hemisphere. His suggestion respecting a more direct passage to the south of Murray Islands was also followed up by commanders engaged in the trade between New South Wales and India. In 1815 Captain Arnold, in the *Indefatigable*, explored a passage through the Barrier in $11^{\circ} 55' S.$, probably that which is now called Steads Entrance, and in 1822 the *Nimrod* entered by an opening about fifteen miles to the south of the former, which now became the favourite passage through the Barrier, chiefly on account of the accuracy with which the track to Cape York had been laid down by Captain Ashmore, the contemporary of Horsburg, and whose chart of the West Coast of Sumatra is well known to navigators of the Indian Archipelago. The Raine Island Entrance, a little to the north of that of the *Indefatigable*, was dis-

* This is not the Pandora's Entrance of modern charts, but a passage between two detached reefs in lat. $9^{\circ} 55' S.$, a little to the east of Murray Island. The *Pandora* did not enter the Barrier in this neighbourhood, but stood to the south, and was lost in attempting to enter by the passage which now bears her name.—G. W. E.

covered by Captain Grimes of the *Ann*, in 1825, but it was not generally used until after its recent survey by Captain Blackwood, R.N., of H.M. Surveying ship *Fly*.

Up to the year 1818 no systematic survey had been made of the entire north-east coast of Australia. Captain Cook had examined the coast in the *Endeavour* as far to the north as Cape Flattery, in lat. 15° S., when he passed out into the open sea through the Barrier reef, but was soon forced to enter it again in lat. $12^{\circ} 40'$, after which the land was kept close on board until the *Endeavour* passed out clear of Torres Strait. Captain Flinders also examined the coast as far to the north as Cumberland Islands in lat. 20° when on his way to explore the Barrier in the neighbourhood of Murray Islands. The result of their combined labours showed that the Barrier reef extended from New Guinea along the entire north-east coast of Australia, receding from the shore gradually as it approached the tropic, where it terminated, leaving a channel 100 miles in width between it and Break Sea Spit, the northern extreme of the east coast. The first navigator who pursued the route within the reefs throughout its entire length, was Captain Cripps of the brig *Cyclops*, on his voyage from Sydney to Bengal in 1812. He was followed, in 1815, by Lieutenant Jeffreys, in the hired armed brig *Kangaroo*, who filled up the coast-line between Endeavour river and Cape Direction, which had been left unexplored by Captain Cook. In 1818, Lieutenant (now Captain) P. P. King commenced a systematic survey of the waters within the barrier, and during this and the three following years he succeeded in laying down a route with an accuracy that has been the theme of praise to all navigators who have adopted what came to be called the Inner Passage. The distance from Break Sea Spit, where the inner route may be said to commence, to Booby Island, is little less than 1,000 miles, and the latter half can only be navigated with safety during daylight; but, on the other hand, a vessel adopting this route has the advantage of entering within the Barrier by a channel 100 miles wide, and, owing to the smoothness of the water within the reefs anchorage is perfectly secure throughout. Ships of war passing through Torres Strait almost invariably take this route, as the track is laid down with such accuracy that it is difficult to go wrong, and the number of men they carry renders the labour of getting up the anchor comparatively light. The writer made his first passage through Torres Strait by this route in a ship of 28 guns, with a large transport in company. The beauty of the scenery was such that the voyage proved a perfect pleasure trip, and after passing Cape Grafton, where the channel becomes contracted, the ships anchored every evening under some small island, when one watch of the crew, and all the officers who could be spared from duty, were permitted to land and recreate on shore until dark. At three o'clock in the morning, a gang of men was sent on board the transport to assist the crew in weighing the anchor, and by sunrise both vessels would be pursuing their course. This route was never popular with merchant vessels. The constant lookout that was required, and the labour

of weighing the anchor every morning, often very severe on account of the depth of water, proved so harassing, that the preference was almost invariably given to the route suggested by Flinders, to the south of Murray Islands, and which came to be known as the Middle Passage. Several narrow but safe openings in the Barrier had been discovered about the parallel of 12° S. and of these the one called Nimrods Entrance was the most frequented, partly from the circumstance of a patch of black rocks on a projecting point of the reef to the south-west of the opening affording a good mark for vessels making the Barrier. In July 1842, the surveying vessels *Fly* and *Bramble*, under the orders of Captain Blackwood, R.N., were sent out by the Admiralty to survey the Middle Passage, and those lying to the north, towards New Guinea; and in 1846 the survey was taken up by Captain Owen Stanley, in the *Rattlesnake*. Their united labours have terminated in a complete survey of the passages between the parallel of 12° S. and the coast of New Guinea, or what may be called Torres Strait proper; and the admirable charts recently published by the Admiralty furnish ample data for deciding as to the best route for steamers.

Hitherto Torres Strait has only been navigated generally by ships passing from east to west, but on three or four occasions vessels have sailed through in the opposite direction. This passage, however, has always been attended with great delay, as it was found that the westerly monsoon, which prevails from November to March, inclusive, in the Seas of the Indian Archipelago, does not blow steadily within Torres Straits, where it only appears in spurts of eight or ten days' duration about the change of the moon. Occasionally these westerly winds blow with considerable strength, but they are usually unsteady, in fact mere interruptions of the south-east trade-wind. These spurts may be expected in November and in the following months until March. Sometimes, but rarely, they are encountered as late as April. In this month of 1844, the writer, while *en route* from Sydney to Port Essington, by the Middle Passage, met with a spurt of north-west wind when in lat. 19° S., which lasted from the 24th to the 29th of the month. It blew a steady six-knot breeze throughout this period, and the writer was subsequently able to trace it to Port Essington, the Arru Islands, and Macassar, where it blew with some strength, and was remarked as an unusual occurrence so late in the season. This period appears to be the fine season in Torres Strait, (as is the case in the Moluccas,) at least to the south of Cape York, as this is the time chosen by the Murray and Darnley Islanders for making their annual excursions to the islets which lie off the north-east coast of Australia. The question of winds is, however, of little importance when steam routes are under consideration, especially on the present occasion, as parties interested will be satisfied on learning that no winds have ever yet been experienced in Torres Strait which are calculated to interfere materially with the progress of steamers in either direction.

A difference of opinion exists among hydrographers as to whether

Endeavour Strait or the channel to the north of the Prince of Wales group, between Hammond Island and the north-west reefs, is the most eligible for the passage of shipping; but as far as steamers are concerned the preference will probably be given to Endeavour Strait. There can be no doubt that detached coral reefs, which rise abruptly with wall-like sides from the deeper waters, are peculiarly formidable to steamers, since the speed at which they proceed will be certain to entail serious damage should they strike against them, even when the water is smooth, as is the case in Torres Strait. When vessels strike on sand or mud banks, they rarely sustain damage unless the sea be rough, while we rarely hear of one that has run upon a detached coral reef being ever made sea-worthy again. Hence it seems probable that Endeavour Strait, which has been closely surveyed and sounded in the course of the last eight years by Captains Blackwood, Stanley, and Yule, will be the channel adopted by steamers between the proposed *dépôt* at Albany Island and the western entrance of Torres Strait;—since this Strait enjoys a perfect immunity from detached coral reefs, so that a vessel coming from the westward, will proceed as far as the *dépôt* without an opportunity being afforded to those on board of even *seeing* these formidable obstacles to navigation. It is a singular fact, that with the exception of two small fringing reefs, which enclose Red and Woody Wallis Islands, no patch of coral has been discovered between Booby Island and the head of the Gulf of Carpentaria. This peculiarity may be accounted for by the circumstance of the fresh water, which is poured into the Gulf in immense bodies during the westerly monsoon, being swept by the prevailing winds northward along the east shore of the Gulf, as it is now well known that fresh water is particularly inimical to the growth of coral; or, perhaps, when the geological character of the hill range which terminates at Cape York comes to be examined, the nature of the alluvium may afford some clue to the mystery. This, however, is a question which need not be entered upon at present, and we may rest satisfied with the fact that vessels from the westward may enter Torres Strait, and proceed round Cape York to Port Albany without encountering *one* of those formidable concretions which have hitherto been looked upon as the chief obstacle to the navigation of Torres Strait by steamers.

ENDEAVOUR STRAIT. The western entrance of this Strait is easy to make. At a distance of 120 miles to the westward the soundings begin to decrease from thirty-six fathoms, the usual depth across the mouth of the Gulf of Carpentaria, to thirty, twenty, and nine fathoms as the Strait is approached. The only precaution necessary to be taken when running for the Strait is to avoid going to the north of the parallel of Booby Island, as there are some shoals to the W.N.W. which have not been well examined from being out of the usual track. To the south of this parallel the sea is perfectly clear of danger, and has been well explored. In clear weather, Prince of Wales Island, which may be seen from a distance of thirty miles, will probably be made before Booby or Wallis Islands, which, although moderately

elevated, are not visible from a ship's deck much more than fifteen miles. There are several channels into the Strait through the sand-banks which project from Prince of Wales and Wallis Islands, and from the mainland, but the widest and most available is that which lies immediately to the north of Red Wallis Island. By bringing Booby Island to bear N.b.E. mag. distant ten miles, when Red Wallis will bear E.b.S.½S., a direct course steered for the latter will lead clear into the Strait between the spits which project from Cape Cornwall and the Wallis Islands, and will also clear two patches of three fathoms which lie in the channel. The depth is from four and a half to eight fathoms. The Strait is perfectly clear within, with the exception of the Heroine and Eagle rocks, which may easily be avoided, and as it has been repeatedly examined and sounded in the course of the last eight years by Captains Blackwood, Stanley, and Yule, Endeavour Strait may be considered as one of the best surveyed spots in the Eastern Seas.

PORT ALBANY, about forty miles distant from Red Wallis Island, the spot recommended as a coaling station by the officers charged with the Torres Straits surveys, is remarkably like New Harbour, in the neighbourhood of Singapore, both with regard to appearance and capacity. The island which forms the eastern side of the port is three miles long, well wooded in the valleys, with uplands consisting of open grassy downs. The harbour is easy of access both by the northern and southern entrances, and the depth of water is sufficient to allow a steamer to be brought close alongside the shore, so that the fuel can be put on board without the aid of boats. Under these circumstances the process of coaling need not occupy much time; and, when proper arrangements are made, it may safely be calculated that, the steamer will be ready to pursue her voyage by daybreak of the morning after her arrival, an object of some importance if the Outer Passage is adopted.

The Outer and Inner Passages to Sydney.

There are two distinct routes between Cape York and Sydney, each of which has its advocates, even among those who have tried both routes, and therefore may be considered capable of judging as to their respective merits. One of these lies within the Great Barrier Reef, close along the Coast of Australia, where there is a channel varying in width from four to twenty miles, between the coast and the inner or western margin of the coral-studded belt. This is the Inner Passage: it has the advantage in point of distance, being 200 miles shorter than the passage outside the reefs, and the water is so smooth within the Barrier, that the speed of a steamer, at least as far as the southern tropic, is never likely to be retarded by the strength of the opposing monsoon, which will sometimes occur to a certain extent on the outer route. But, on the other hand, the navigation for the first 500 miles after leaving Cape York, requires so much care

and precision that it will be necessary to anchor every night, and for 300 miles further the steamers can only proceed with safety after dark when the nights are sufficiently clear to allow the landmarks to be distinguished. The three or four hundred miles saved by the decrease of distance and by the comparative smoothness of the water, will, therefore, be swallowed up by the delay of anchoring, long before the steamer reaches Break-Sea Spit.

The inner margin of the coral belt approaches to within four miles of the coast about Port Albany, and the width of the belt is eighty miles, decreasing to forty miles abreast of Cape Grenville. The coral reefs are pretty plentifully strewed over this northern part, but they are mostly old reefs that have not only reached the surface of the sea, but have had inlets formed upon them by the washing up of sand and broken coral, so that they are no longer dangerous during daylight. The track across the belt may be materially improved at a very small expenditure of time and trouble by the erection of gin or triangle beacons on the islets, which will serve as direction posts; and when the crowning labour comes to be completed in the form of a lighthouse at each entrance, the navigation of Torres Strait will be looked upon by seamen as a relaxation rather than as a hazardous undertaking.

RAINE ISLAND, a low islet formed of broken coral, 100 miles to the E.S.E. of Port Albany, is the leading mark for entering the Barrier by the channel surveyed by Captain Blackwood which is now generally adopted by vessels bound through Torres Strait by the passage outside the reefs. The easterly trade-wind prevails throughout the year in the sea contiguous to the north-east coast of Australia. From May to September, inclusive, it blows generally from E.S.E. to S.S.E., strong and steady. During the remaining months of the year, the trade-wind becomes light, and draws more to the northward, sometimes blowing for several days from E.N.E. and N.E. In January, February, and March, spurts of short duration, from the north-west, may be expected about the change of the moon, sometimes in strong gusts, but generally moderate with clear weather. The writer has already alluded to a spurt of north-west wind which he met with in the end of April 1844, in lat. 19°, but they rarely occur so late in the season.

On the east coast of Australia, between Moreton Bay and Sydney, westerly winds prevail from May to September, the winter months of the southern hemisphere. Gales are of common occurrence at this season, but as the wind blows from the land, the water is smooth, and they offer little obstruction to steam navigation. During the summer months the wind is generally from the eastern quarter, assuming in a great degree the character of a trade-wind.

The currents on this coast are chiefly influenced by the trade-wind. The stream from the eastward divides at Break Sea Spit, when one portion runs to the north-west towards Torres Strait, and the other curves to the south along the east coast until it reaches Cape Howe, when it unites with the body of water forced through Bass Strait by the westerly winds, and runs eastward again towards the south end of New Zealand.

From Raine Island the course is S.E.b.E. 470 miles, then S.E. 440 miles, which will lead up to Kenn's rocky islet by daybreak of the fifth morning after leaving the Barrier. This island may be sighted or not as convenient, but with good chronometers there will be no occasion to make it, as the last of the detached reefs will be passed before dark. Up to this point, the route will be directly in the face of the trade-wind, but after passing Kenn's Rocks the course is south, when the fore and aft sails will probably draw. All the difficulties of the passage, if they can be called such, are now over. At sunset, by which time the position of the doubtful Australia Reef will have been passed, a direct course may be steered S.S.W. for Cape Byron. Mount Warning, which lies to the north of the Cape, is one of the most conspicuous land-marks on the east coast of Australia.

Captain Flinders, writing fifty years ago, thus describes Cape Byron:—"Cape Byron is a small steep head, projecting about two miles from the low land, and in coming along the coast makes like an island; its latitude is $28^{\circ} 38'$ and longitude $153^{\circ} 37'$ or $7'$ east of the situation assigned to it by Captain Cook. There are three rocks on its north side, and in the direction of N. 57° W., eight or nine leagues from it, is the peaked top of a mass of mountains, named by its discoverer Mount Warning, whose elevation is about 3,300 feet, and exceeds that of Mount Dromedary, or any other land I have seen on this east coast. To Mr. Westall's sketch of this remarkable peak it may be added that the surrounding hills were well covered with wood, whose foliage announced a soil more fertile than usual so near the sea side."—*Flinder's Voyage*, vol. II p. 5.

The country so favourably described by Flinders is now covered by the flocks of wealthy settlers, the neighbouring territory of New England being the most flourishing of the pastoral districts. The bay on the north side of Cape Byron also affords good anchorage, and is much resorted to by the coasters. It is probable that arrangements will be made for landing the mails for the Moreton Bay, New England, and Clarence districts at Cape Byron, as it may be effected by a delay of a few minutes, and no other establishment will be required than a postmaster, a whale-boat's crew, and a few post riders for distributing the letters. This will enable the residents in these important districts to answer their letters by the return mail, which might not be the case if they were carried on to Sydney. The route along the coast from Cape Byron to Sydney is perfectly clear of hidden dangers. The light on the South Head of Port Jackson, which is a red revolving light, is a sure guide for the entrance during the darkest night, and a floating light on some rocks within the harbour's mouth enables a vessel to lead up to the city.

NANTUCKET WHALE FISHERMEN.

From the Philadelphia Colonization Herald.

A friend, zealous for the hard-earned and well-earned fame of his native island, has recently controverted, in the *Nantucket Inquirer*, the claim of New Bedford as being the pioneer in the whale fishery. We take from his article the following statements, having no doubt that they are facts:

As early as 1690 the whale fishery was carried on at Nantucket in boats. In 1715 the inhabitants pursued the whales on the ocean in small sloops and schooners. The business increased until the war of the Revolution, on the breaking out of which, they had 150 sail of vessels, and employed in them 2,200 seamen. They were engaged in pursuing the Right whale off Disco, in Greenland, as early as 1770, seeking their game as high as lat. 87° N. This business was followed with success until about 1789, when a gentleman from Cape Cod, who had returned from service in the British East India Company, and who in passing Madagascar and Cape of Good Hope, on his voyage to and from the Indies, had observed large numbers of whales, both Sperm and Right. This information was given at Nantucket, and as the narrator had performed a whaling voyage from Nantucket when a boy, his information was considered of importance. Two ships, the *Penelope* and *Canton*, were immediately taken from the Greenland fishery, and ordered to fit for a new voyage. One was under the command of Captain James Whippey and the other Captain John Worth.

On their arrival off Madagascar they found plenty of whales, took 400 barrels sperm each, and one 2,000 barrels the other 1,000 barrels of Right whale, filling their ships; and returned home, one, I think, to Dunkirk and the other to London, having been ordered there for the sale of their cargoes.

The skill and energy of the Nantucket whalers had become so well known that foreign nations at great pains availed themselves of their skill. In 1784, the whale fishery having entirely ceased in France, the country from whence it was first carried on, Louis XVI endeavoured to revive it. With this view he fitted six ships at Dunkirk on his own account, which were furnished with masters and a number of experienced seamen, brought at considerable expense from Nantucket. The adventure was more successful than could have been reasonably expected considering the auspices under which it was carried on.

The war of the Revolution having almost driven our flag from the ocean, many of our men sought for other places from which they could pursue their calling. I have a list of 193 Nantucket Captains sailing from England, and sounding world wide the daring energy and skill of the whale fishermen. It was about this time, 1784, that some of our ships proceeded on mixed voyages to Patagonia and Falkland

Islands, sealing and whaling. In 1791 our ships entered into the Pacific in pursuit of their prey. They doubled Cape Horn, a class of vessels that would be considered unsafe at this day to perform a summer voyage across the Atlantic, small in size, not exceeding 250 tons burden, heavy dull sailors, without copper on their bottoms, poorly and scantily fitted indeed, but manned with men of an iron nerve and energy that knew no turning, and here again they were successful. They cruised at this time on the coast of Chili. After 1800 we find them on the coast of Peru and around the Galapagos Islands.

In 1818 the ship *Globe*, of Nantucket, Captain George W. Gardiner, took the first whale on what is now called the "off shore ground," and was the first ship that obtained 2,000 barrels of Sperm oil in one voyage. She was followed by the ships *Pacific*, *Peruvian*, and others, all obtaining full cargoes of Sperm oil in a remarkably short space of time.

The late Captain Winship of Brighton, on his voyage from China to the Sandwich Islands, observed large numbers of Sperm whales; and, in consequence of this information, several ships were fitted for what is now called "the Coast of Japan." The ship *Maro*, of Nantucket, Captain Joseph Allen, in company with the English ship *Syren*, owned by the Messrs. Enderby of London, and commanded by Captain Frederick Coffin of Nantucket, were the first to reach that distant sea. The *Syren* struck the first whale on the 10th May 1820, the *Maro*, the second on the 1st of June. Other ships followed, and nearly all obtained full cargoes in five months: taking nearly 2,000 barrels of Sperm oil each. This was a success that had long been looked forward to by our veterans: a sure place to fill a ship with Sperm oil.

The ship *Swift*, of Nantucket, Captain Frederick Arthur, in 1825, was the first ship that ever obtained 3,000 barrels of Sperm oil in one voyage; and the first ship that ever obtained 4,000 barrels of Sperm oil was commanded by a Nantucket man, the late Captain William Swain, as recently as 1838. The ship *Africa*, once a Danish frigate, was fitted in London in 1803 by the Messrs. Bennet, and commanded by Captain Ransom Jones of Nantucket; in May 1804, after an absence of thirteen months, he landed in London 7,000 barrels of oil, 600 of which were Sperm, the balance whale and elephant, seventy thousand seal skins, and the whalebone taken from the Island of Desolation, east of the Cape of Good Hope.

In 1834 the writer, in company with another gentleman, received, from Captain Winship, information that large bodies of Sperm whales had been often seen by him in the ship *O'Cane*, when near Kodiack on the N.W. coast of America. In 1835 Mr. Gardiner, the agent of the ship *Ganges*, and the writer, an owner, with him, despatched the ship direct to Kodiack for Sperm oil. On her arrival there, in lat. 56° 30' N., large numbers of Right whales were seen, but no Sperm whales. She cruised there for a short time in the hope of falling in with Sperm whales, but meeting with no success, took 300 barrels of whale oil; and from thence proceeded to the coast of Japan, as she

was fitted for an abstract sperm whale voyage. This I believe to be the *first* ship sent to the N.W. coast on a whaling voyage. The second was the ship *Elbe*, Captain Waterman, who took 1,500 barrels in 1840. I think she took but nine whales to make the 1,500 barrels.

I am aware that New Bedford surpasses all other places engaged in the whale fishery in wealth and prosperity; success has followed exertion in a ratio of one hundred fold, and there are a very few places in our country which have arisen to such a height of prosperity in so short a period. It seems almost the work of an enchantress. But in her day of success, let her not claim to be the first to discover the resources of the whale fishery, or the first to overcome the natural obstacles presented; and what she claims the credit for, may it never be tarnished with filial ingratitude. Her whole history can hardly reach fifty years, and there are many now living who can recollect almost her whole maritime annals. In 1790 her population comprised but 700 persons and as late as 1820 it was short of 4,000. Since that period her march has been one of unbroken success and prosperity. This has been largely aided by ship masters obtained from Nantucket. We have some of the same sort left, lessened in numbers, it may be, but still some worthy of noble sires. We have declined in prosperity while New Bedford has augmented her wealth; the reasons need not be stated, suffice it to say that millions of dollars have gone there and to other places from Nantucket, giving power and efficiency to this enterprise; while, on the other hand, Nantucket receives no aid but that which is gathered from the depths of the ocean.

A DAY AT TRISTAN D'ACUNHA. *Extract from the Journal of Capt. Denham, H.M.S. Herald.*

Nov. 11th, P.M., 1852.—It was 2 P.M. before we approached the island sufficiently near to pick up a boat which we had observed to put off from the south-western point. From the crew, which consisted of two Englishmen, one Dutchman, and one American, we learnt that the little settlement of nine families, which we had heard of, was situated on the north west point of the island. These fine, healthy, and robust fellows, clad and speaking as Englishmen, made us feel that they were from an island of Great Britain; even the Dutchman had become English.

We were now lying to at two and a half miles off the stupendous cliffs, but not without anxiety, lest the heavy swell should be accompanied by rollers, while the ship should be in the eddy winds, or calm, occasioned by those cliffs, which twist a vessel at this distance round and round upon her heel, driving and drawing her under the cliffs, where no bottom can be calculated upon for an anchor to avert destruction.

Having regaled our visitors, who encouraged our project of landing,

this being their finest (young summer) season, and having charged them with civil messages to their patriarchal governor (Glass), they left us, and we stood off for the night.

A N.W. wind placed us rather to leeward of the settlement the next morning, and rendered the landing place a lee-shore. Nevertheless being a moderate breeze, and looking for advice and assistance from our friends of last evening, we stood in.

The first cast of the lead while standing in was 46 fathoms (sand), at a mile and a third off shore, abreast of the cottages situated on the tabled tongue of land, immediately under the almost perpendicular side of the mountain, which slopes down to the sea from an altitude of 8,300 feet on all sides of the island, except this flat space, which forms the north western projection of the island.

A heavy forbidding swell rolled us onwards as we left the ship, and directed our boat towards the strip of dark pebbly shore marked by the islanders' white whale boat, near a steep roadway which they have cut laterally with the cliff. This only clear spot as respects boulders can be hit upon, when the islanders' boat may happen to be absent, by making for the beach about a cable's length to eastward of the cascade above the high water mark cliff, which ranges round this table land at from 10 to 100 feet above the sea level.

Keeping an eye upon the men on the beach close to their boat, we approached with confidence, looking to them for a sign if we were not right in attempting the surf, which, judging from the undulation we were in, was likely to break fearfully at their feet. We were too distant as yet to see more than that it did break; when however we were at one third of a mile from the beach, we entered the zone of kelp or tangle which girts the island at that distance. Once amidst this tough seaweed, (*Fucus Giganteus*,) which grows up firmly rooted in 15 fathoms water, the crests of the swell are allayed, and the break on the beach becomes proportionately moderate. But the boat becomes less manageable, from the obstruction to her oars which the weed presents, although she would live a long time amongst it by making fast to it, and riding between the outer waves and the beach surf. In our case we dashed in, as we were not beckoned away, and shipping one sea, our whale boat was hauled up, with the assistance of the young men who had accompanied their venerable governor (Glass) to the beach, before she could ship another. Thus, guided by common care, we effected a safe landing.

The precarious weather which prevails at this island, to the exclusion of visitors at the risk of not regaining their ship for days together, would have prompted us to embark early in the afternoon, for we soon learnt that two successive days' steadiness of wind, weather, or swell, could not be reckoned on. The weather on this occasion tempted us to prolong our visit until sunset, for the purpose of learning as many particulars as possible concerning these isolated people, who, as a nucleus of English blood, language, customs, and church, claim our sympathy and protection.

The inhabitants of Tristan d'Acunha are all English by association,

though not by birth and parentage. The population amounts now to 85 persons, all acknowledging the Church of England communion, and are under the pastoral care of the Rev. William Taylor, appointed by the Society for propagating the Gospel at the instance of an unknown benefactor, who, sympathising with the Tristan d'Acunha people in their destitution regarding religious and moral instruction, had remitted to the society, in 1849, £1,000, to provide a resident clergyman, who would fulfil the offices of teacher and minister there for five years. This station is occupied by Mr. Taylor; and it added much to the interest occasioned by a knot of our countrymen and their families, so remotely situated, to witness the devotedness of that amiable man. We accompanied him to the several cottages, where health and content prevailed, without many apparent comforts. A very scanty supply of domestic furniture and utensils there was, but abundance of English farm productions, such as bread, bacon, eggs, butter, milk, poultry, mutton, beef, and vegetables. For groceries and clothes they depend on a passing emigrant ship, or an American whaler, and for which they are ready to supply stock and refreshments, preferring barter to money; and ships may obtain water in their own boats by filling casks in them by a hose connected with the cascade, while lying outside the surf, and which the young men of the settlement are always ready to assist in.

Ships are beginning to visit this island, but nothing should induce the commander of a merchant vessel to anchor, even should he do so at the depth of thirty fathoms water, a mile and a half off, with the wind off shore; the swell which attends the brief calm preceding the change of the wind on shore, (North and N.W.,) would be very likely to snap his cable, or jerk his anchor home, and he be drifted on the rocky shore. He could not work off should he slip his cable, and if the on shore wind proved a gale, he must part from, or founder at, his anchors. The *Julia* sloop of war was so caught, parted, and was totally wrecked, with a fearful loss of life, in 1818. But there would be no risk in holding several days' communication by boats, the ship standing off and on, especially if the season happened to be between October and April, which is the summer period here.

The British Government had an object in occupying this island by a detachment of artillery, during the time Buonaparte was confined at St. Helena. Indeed it was designated, during that period, a naval station, and on the breaking up of which, in 1821, one of the detachment, Corporal William Glass, and two seamen of the St. Helena squadron, Riley and Taylor, obtained leave to settle on this island. Glass is now upwards of 70 years of age, and sorrowfully afflicted with cancer in the under lip and chin, but was able to move about; and our surgeon, Dr. Rayner, with his usual sympathy, ministered to him by advice and medicines all the alleviation his case and our brief visit would admit. Glass was at the first chosen as chief, and is habitually called Governor. His own family consists of wife, seven sons, and eight daughters; and what with the progeny of the two old men-of-war's men, and the settling of some four or five whaling men, and the

marrying of the daughters of Glass and his first companions in this voluntary exile, the present population amounts, as stated, to 85. The young men and women partake of the mulatto caste, as the wives of the first settlers, Glass, &c., were natives of the Cape of Good Hope and St. Helena, but the children forming the second generation are what we should term handsome brunettes, of a strikingly fine figure. It is asserted that a more healthy place than this island cannot be found; that none of the epidemical diseases have reached them, and the children are not subject to any complaints or illnesses common to children. The clergyman assured us that he had not traced a vice to contend with, and the only instance of crime or offence that had occurred was the following:—

A pig had been prepared by the parent of a young lady about to be married, and it was left hanging out of doors at night time as usual. On the morning of the day of the feast it proved to be missing. A young man was taxed with it, and he at once confessed. An assembly pronounced, that whether in joke or earnest he did it, he should carry it back to the spot, in the presence of the community. The sentence was fulfilled, under every sense of shame to the thief himself, and of warning to others.

Our Commander had provided himself with presents, consisting of axes and flannels; and the clergyman introduced him to the children at school in a cottage; and certainly on entering the door so perfectly an English rural scene presented itself, as made it difficult to believe one to be in another hemisphere. But so it was! Such had been the training habits from British blood, and of the recent infusion of religious order and moral discipline, that at this isolated and rarely visited spot, six thousand miles from the mother country—on a day, too, when a visit from one of Her Majesty's ships (eighteen years had elapsed since the last) might be deemed an exciting event, demanding a holiday; yet in that cottage, seated, or standing in classes, were eighteen girls and ten boys, all clothed as English yeomen's children, all ruddy and happy looking, and all attentive to their instructress, whom the clergyman introduced as Mary Riley, who had essentially assisted him in this part of his charge, but who was about to be claimed, to his loss, in matrimony by a son of Governor Glass. After making some pleasing allusions to the Queen and the country to which we belonged to these interesting children, they were presented, according to their years and attainments, with printed handkerchiefs with various instructive readings upon them, such as the commandments, prayers, and arithmetical tables; housewives, combs, flageolets, Jew's-harps, knives, &c. To Mary Riley, their mistress, was presented a ring, a brooch, some white gloves, pocket handkerchiefs, and a pocket workbox, called a lady's companion, with such observations as might exalt her in the eyes of her scholars, but which certainly embarrassed her. A half holiday was interceded for, and we left them, often looking back in admiration, and breathing a silent prayer for their happiness.

On accompanying our reverend friend to the boat, he put into my

hands the annexed note,* saying, "I have snatched a moment to make the request in writing, and if after what I shall show you, and on your reading the note as you pull off, you feel you can accede to it, our boat shall accompany you to avail of the success of my appeal. You have seen our children's schoolroom, it is small indeed; but I must show you the room in Glass's cottage where we held divine service, and when you consider that seventy persons eagerly congregate in it, you will admit that it is small indeed. But when I inform you that in these worthy people lending me these rooms, (my own quarters you know are literally a crib in Mr. Glass's cottage,) they actually dislodge themselves at the greatest inconvenience, you will, I am sure, participate in my anxiety to erect a cottage that would answer the purposes of church and school. I shall have cheerful labour to build it, and all internal requisites from the able bodied of my primitive flock; but such is the nature of the stone around us, that no tools in our possession can quarry it. Can you therefore give us a barrel of gunpowder and a couple of pickaxes?"

The ship could afford both, without detriment to the service, and anticipating the concurrence of the authorities, he was promised all he asked. The ship had by this time stood in close enough; three cheers accompanied our launch from the beach, and the island boat, (they have but one,) which came off with us, carried back what they wanted.

We took leave of the venerable Governor Glass and his boys, at 7h. 30m. P.M., and as the wind had come round to N.W., we were enabled to shape a flowing course E.b.S. towards the next point in our voyage, the Cape of Good Hope.

The plan of the settlement bay, and to which the residents have given the name of Falmouth Bay, may prove of use to future ships desirous of sighting it to correct their longitude, or to replenish water and stock. But it is dangerous to range along the margins of the island nearer than two miles, on account of the baffling eddies, which leave a ship in the on-set influence of the swell. The settlement bay itself should not be approached within one mile and a quarter, or in forty fathoms water, a limit which is denoted by the sail rock off the western cliff closing with the N.W. extreme of the bay and island, and which it does on the bearing of S.W. $\frac{1}{2}$ W. The islanders have no name for the north-western point, where our observations were taken at, so it was named Herald Point.

* Tristan d'Acunha, Nov. 12th, 1852.

MY DEAR SIR,—Could you but spare me a couple of barrels of powder from your stores, you would confer the greatest favour upon me, and most materially prosper me in my mission, as we are only in want of that for blasting stone, to enable us to erect a schoolroom, to serve us also for the present as a temporary place of worship, we having nothing at present but a little room sixteen feet by twelve to accommodate the whole population of the island. I think you will agree with me, that for so good a work it cannot be a misappropriation. If it is at all in your power to do, I trust you will not refuse me.

I am, &c., &c.,
W. F. TAYLOR.

To Captain Denham, R.N.

Keeping the cross marks on of that point and the erect rocky islet at the western extreme, the white cottage brought S.W.b.S., (or the low black clifty point at the eastern extreme of a black pebbly beach bearing south,) is the best line to run in upon, and which should be preserved, whether for sending a boat on shore, while standing off and on, or for anchoring, which a steamer might do with comparative impunity. It must not be forgotten, that excepting the absolute eddy produced by the projections of the island at half a mile off, the current sets north-eastward. It may also be remembered, that, although the peak rears its head 8,000 feet above the level of the sea, such is the conformation of its slopes, that its apex cannot be seen from the margins of the island, which preclude any vertical angle being measured from the high water mark or cliffs. The peak is of easy access for barometric measurement, but is generally snow clad; it was so at the time of this visit, although young summer.

The climate of this island is highly congenial to animal and vegetable productions. All common to European culture flourish here: and we supplied the clergyman with a variety of vegetable seeds, to be disposed of as he might think best; such contributions are likely to return a hundred fold to succeeding voyagers who may touch at Tristan d'Acunha. There are scarcely any indigenous fruits or vegetables on the island, which is of volcanic structure, and yet the sides of its ravines, and all spots sheltered from the gusts of wind, and the scour of mountain torrent, present the richest soil and most fostering temperature. Our visit was in November, their spring time, and the few apple and peach trees which had been reared by our countrymen were in the perfection of blossom. As to the grass it affords the most generous pasture. The very ridges of the mountain are fringed with stunted trees of *Phylica arborea*, which afford cheerful firing and good oven fuel. The wood of these trees resembles box or maple; the leaf, that of the yew; its branches incline towards the ground, and are of too slender and crooked a nature to afford plank or rafters; for such the settlement depends on the opportunity for barter with some ship which may be calling for water or paying a periodical visit for such seal skins as the islanders may have collected, and which, when not busy at their plots of ground, they occupy themselves in doing. Indeed an increase of male settlers (females predominate by nearly one third at present) might pursue a profitable vocation by extracting the oil and curing the skins of the seals which frequent the shores of this and the adjacent islands.

It should be noticed that the tree (*Phylica*) spoken of grows in some sheltered situations in the island, to a size from which the knees and timbers for boats and small craft might be formed.

When speaking of sheltered situations it is as regards the gusty winds which sweep round this island, and which are unfavourable to the growth of trees or grain crops on its plains.

The climate of the island is so mild that the herbage remains unimpaired all the year round, and what with the descent of snow water, and being occasionally enveloped in fog or mist, the soil is always

open, and presents some spontaneous herbage of rank growth, as well as of more delicate kinds: of the former, is a gigantic species of *Spartina*, a grass which affords an excellent thatch; while of the latter, the *Chenopodium tomentosum* presents itself in abundance, an infusion of which, when dried, is used as a substitute for tea, when the settlement has run out its supplies.

The geographic position of Tristan d'Acunha may now be considered as settled. Its north-west extremity lies in lat. $37^{\circ} 2' 48''$ S., and long. $12^{\circ} 18' 39''$ W., about one third nearer to the Cape of Good Hope than to Cape Horn, and nearly upon a line drawn between those well known Capes—a position which places it 1320 miles southward of St. Helena.

H. M. DENHAM.

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from page 153.)

Thursday, June 13th.—At daylight, with the aid of a spy-glass, we could distinguish the Great Wall of China, topping the summit of the range of hills; and, as it was still calm, I got the steam up and stood in for the land, determined, if no opposition were offered, to devote a few hours to the inspection of the terminus.

There is no record of any European having ever visited this portion of the wall: Gutzlaff, in his interesting voyage to the Gulf of Leotong, only saw it at a distance, from the deck of the junk he was in, and the *Madagascar* steamer, with Admiral Elliot on board, did not approach the shore nearer than two miles.

I shall never forget the intense excitement visible on every countenance, as we drew inshore and the details of this stupendous work became more clearly discernible; but the hope of attaining my object was mingled with apprehension of being baffled through the well known jealousy of the Mandarins. We passed close to the entrance of a small boat creek, rounded a sandy spit, which projects to seaward, and before eight o'clock anchored in three fathoms, with the terminus of the wall bearing north within half a mile.

This vast structure, which for two thousand years has been considered one of the greatest wonders of man's creation, and vies with, if it does not excel, the pyramids as a monument of labour, has its eastern termination on the coast of the Gulf of Leotong, about 120 miles north of the Peiho river, in lat. $40^{\circ} 4' N.$, long. $120^{\circ} 2' E.$

Viewed from the water the terminus appears a formidable place; connected with and flanking it on the Chinese side is a stone fort or castle, having a frontage towards the sea of some three hundred yards; in an angle facing the south there is a large arched gateway; a handsome joss-house with its buildings and outhouses occupies a site be-

tween it and the beach, while the northern end is surmounted by a modern two-storied guard-house.

No signs of opposition appearing, I landed with a large party of the officers on the steep sandy beach to the right of the joss-house, and was civilly received by a white-button Mandarin, with a small party of soldiers; I gave him my card, to be forwarded to his Commandant, and after some conversation and inquiries as to the result of our visit to the Peiho, of which he had evidently had information, he told us we were perfectly welcome to inspect the wall at our leisure. We accordingly ascended it by a broad inclined plane outside the fort, and found ourselves under the guard-house, on a rectangular platform about sixty feet in length, paved with large dark blue coloured bricks. This portion of the structure from its apparent age and condition seems to have been the original part of the main wall, and a continuation considerably lower and projecting beneath it into the sea, little better now than a mass of ruins half buried in the sand, appears a less durable construction of a much later date.

The first objects that attracted our attention on this platform were three monumental slabs of black marble; two stood close to the wall, the third was extended on the pavement, having been thrown down from its base, a curiously carved, altar shaped, pedestal. On one of the standing slabs was deeply inscribed the sentence "Heaven created Earth and Sea," and on the other, "Only a Spoonful." The import of this latter sentence we were at a loss to conjecture; it may have had reference to the placid waters of the Gulf of Leotong, which rippled on the beach beneath, or, perhaps, some allusion may have been intended to the nothingness of this vast structure when brought in comparison with the works of creation. The fallen monument having a very long inscription, with a date attached, was left to be deciphered on our return from the survey of the wall, of which our anxiety to see something would not permit any longer delay.

Ascending again by a broad flight of steps from the platform to the top of the fort, we walked past the guardhouse, a delapidated building, and down another short inclined plane, and thence along the wall, which we found to be for some 800 yards inland in a very ruinous condition, the first part of it being little better than an embankment of sand, broken at intervals by projecting masses of ruined brickwork; but at half a mile's distance from the fort the wall commences to show a better state of preservation; here we found it measure thirty-nine feet across the platform carpetted with flowers of every hue, it was evidently rarely disturbed by a footfall, and seemed to mock the "desolation that stood confest around."

The wall on the Tartar side at this point showed what care had been bestowed in its construction: it was in excellent repair; a firm well built foundation, consisting of two courses of hewn granite, was surmounted by a slanting brick facing, measuring together thirty-five feet in height, above it a brick parapet, seven feet high and eighteen inches thick, pierced by small embrasures at irregular distances from eight to thirteen feet apart.

At intervals, varying in distance from two to five hundred yards apart, the wall is flanked, on the Tartar side, by projecting towers of brick. The one which I minutely examined, and of which I took measurements and sketches, is entered from the wall by a low arched granite doorway, six and a half feet high by three and a half broad. The construction of this arch is most remarkable, for the Chinese have long ceased to use keystones in their arches; a flight of steps to the right hand within the doorway leads up to the flat roof of the tower, which is surrounded by a parapet like that upon the wall.

The body of the tower is intersected at right angles by low arched brick vaults, each terminating in an embrasure (casemate,) of which there are three on each outer face of the tower. From the construction of these vaults or casemates, they seem to have been built for archers and spearmen, and not for any kind of artillery.

There was no appearance of a parapet on the Chinese side of the wall, excepting on the low projecting towers or bastions on this face, which intervene midway between those on the outer, but are not, like them, vaulted. The following are some of the measurements of the tower: they were most carefully made by Mr. Oultram and his assistant-engineer.

	feet.	inches.
Height from the ground	52	0
Width (square)	45	8
Average thickness of brick piers between the casemates or arched vaults.	4	8
Height of casemates to centre of the arch	5	6½
Width of ditto	2	0
Height of arched roof	8	0

Thickness of parapet at the base eight feet, tapering off to fifteen inches at the top. Distance between the embrasures in the parapet varying from eight feet to thirteen feet four inches.

From this tower, which was the second inland from the terminus, the wall continues on, apparently more or less in a ruined state, for about three miles in a N.N.W. direction, over a fine undulating country, it then takes a sudden bend to the S.W., passing near a large town, which we could see distinctly, called Shan-hae-wei; thence it ascends directly up a bleak rugged range of mountains, about two thousand feet in height, creeping up the side of it like a gigantic serpent, and disappearing over the summit of the ridge.

The general features of the country about the wall are very pleasing, the land rises gradually from the sea up to the mountain range, is well timbered, and apparently densely populated on the Chinese side; on the Tartar side it undulates gently away into the distance, appears rich and well cultivated, and is dotted here and there with villages and hamlets, the houses of which, unlike those in other parts of China, have roofs almost flat.

The only gate through the wall in this quarter is about three miles from the sea, it is called, from the city close by, the Shan-hae-kwan; this we had intended visiting, had not the officious interference of the

Mandarins prevented us. We had observed, while loitering leisurely along, troops of horsemen galloping out from the interior in the direction of the fort; but supposing they were only hastening to have a view of us, or of the ship before she left, we took no further notice of them; shortly afterwards, however, I noticed with my glass, parties of matchlock men advancing in the same direction, and we had not proceeded much more than a mile from the second tower, when three Mandarins overtook us, and informed me that the Tútung or Tartar General* in command at Shan-hae-wei had come down to the fort, and that it was his wish I should proceed no farther.

We accordingly descended from the wall, and returned to the terminus by a path through the fields, entering the fort on the land side through a large gap in the ruined wall. Here we found the Tútung and another Mandarin, apparently of equal rank, seated in state in their official dress, wearing red coral buttons, and attended by a numerous suite. Their behaviour was at first most rude and discourteous; finding, however, they gained nothing by their arrogant demeanour, for I desired Medhurst not to answer any of their impertinent questions, they became exactly the reverse, sent for chairs for all the party, (as I refused to hold any communication with them standing up while they were seated,) and invited me to partake of a repast, which they ordered to be prepared immediately, they insisted, also, on sending to the city for provisions for the ship; but I declined all their offers of hospitality, and having each despoiled the ruined wall of a "brick," as a memorial of the visit, we returned to the boats.

Unfortunately the increasing crowd of soldiers on the platform, with the number of inferior Mandarins, of whom I counted no less than twenty-two "blue-buttons," prevented Medhurst taking a copy of the recumbent tablet before mentioned, which there is little doubt would have given some interesting information; I succeeded, however, in getting a sketch of its curious pedestal, upon the sides of which three fishes were described on a triangular field, having an embossed border, with a four pointed star dependent from the lower apex; these symbols, it is needless to say, we had no means of interpreting.

Although, therefore, my object was not completely attained, I had, notwithstanding, reason to congratulate myself and the officers on being permitted to see as much as we did, for had the General arrived at the terminus three hours earlier our landing would probably have been prevented, and thus an opportunity would have been lost, such as may not occur again for years, all this part of the world being, by treaty, a sealed country to Englishmen.

Soldiers kept pouring into the fort, even after we had embarked, so that the terminus, the inclined plane leading up to it, and indeed the whole beach, were thronged by a dense mass of human beings. These troops, as well as the common people we saw during the day, were all Manchú Tartars, a fine looking muscular race; the cavalry were mounted on active little horses, about fourteen hands high, of

* A Tútung is a Captain-General of the Manchu Banner.

whose performances they seemed not a little proud, galloping them about, while we were in the fort, to show off their paces; from their behaviour, it was evident none of these soldiers had ever seen a European before.

The sound of many voices rose high in the air from the crowd as the ship moved slowly away, under steam. How incomprehensible must her progress have appeared to a people yet ignorant of the wonderful inventions of modern times! We had not proceeded far, when a fair wind springing up enabled me to lift the propeller, and, under its influence, before sunset the Great Wall of China had faded in the distance.

I much wished to call, on my way back to Shanghai, at Foo-chou, in lat. $39^{\circ} 20'$, long. $121^{\circ} 40'$, (where H.M.S. *Blonde* discovered junks, coal laden, in 1840,) in hopes of procuring some fuel for trial; but the wind was foul for that place, so I shaped a course for the entrance of the Gulf. This coal is described in the Chinese Repository as "Burning without flame, exceedingly brittle, a splendid lustre, somewhat resembling graphite, and its fracture conchoidal; the demand," it states, "is limited to a place called Kai-chou, sixty or seventy miles north of Foo-chou, and twenty or thirty cargoes, of thirty or forty tons each, are annually shipped; the price at the shipping place, about a mile and a half distant from the pits, is 160 cash per picul, (or 12s. 6d. a ton,) sold at Kai-chou for 320 cash a picul." From this description I should very much doubt its being at all suitable for steaming purposes.

Friday, June 14th.—The weather continued delightful, water smooth as glass, numbers of junks, belonging evidently to Shanghai, by their rig, were seen under the land of Corea.

On approaching the Straits of Mea-tau the influence of the tide was very sensibly felt, and we had to hold on with the kedje three times before we succeeded in getting safe through. I passed between the two northernmost islets of the group at the entrance, neither of which are laid down on our charts; it was dead low water, but we had never less than thirty-one fathoms in the channel. Our progress from hence to the extreme end of the promontory of Shantung was very tedious, light winds prevailing.

Wednesday, June 19th.—Rounded Alceste Island to-day at a great distance, and now a strong breeze, a cyclone, veering from east through north to south-west, sent us rapidly towards the Yang-tse-kiang; and on Sunday morning we caught sight of Sha-wie-shan Island. The weather now became very thick, and, the tide being against us, the anchor was dropped in ten fathoms. At 2h. P.M. it cleared a little, and we weighed again with a fair wind, which, however, only lasted a short time. At 4h. P.M., finding the tide sweeping us rapidly to the eastward, anchored again, in twelve fathoms, mud, with Sha-wie-shan W. & S., six or eight miles.

There was evidently some commotion in the elements going on inshore, peal after peal of thunder was heard distinctly all the afternoon, and a lowering sky with sharp squalls of rain, and a heavy cross swell,

made our anchorage anything but pleasant,—it reminded me of the Doggerbank.

Monday, June 24th.—The weather looked still wilder this morning, and there was a thick mist, which, however, seemed inclined to clear off; so, as I cannot afford to waste time at anchor, I got the steam up, and made a start at 6h. A.M. Steered a wrong course at first, owing to Sha-wie-shan, whose altitude is 176 feet, being supposed much farther off than it really was.

I have already in this journal remarked upon the want of lights, buoys, and beacons, on the coast of China generally, but these remarks apply with increased force to the entrance of this enormous river.* One of the difficulties attending its navigation is caused by the haze that overhangs the coast at this season, and for the greater part of the year, rendering it almost impossible to judge of distance, even when the land is seen, without cross bearings; but the chief danger is owing to the irregular set of the tides, which, in the present state of our knowledge, defies all calculation; thus, last night (it being full moon) the tide was setting at our anchorage, by the log, which was hove every hour regularly as if the ship had been at sea, at

6h. P.M.	. . . . .	S.S.E.
7h.	. . . . .	S.W.b.W.
9h.	. . . . .	West
10h.	. . . . .	W.b.N.½N.

with a velocity of from one and a half to three knots per hour; and this morning, at

1h. A.M.	. . . . .	N.b.E.
2h.	. . . . .	N.E.b.N.
3h.	. . . . .	N.E.¼E.
4h.	. . . . .	N.E.b.E.

with a velocity of from three and a half to four knots per hour.

It was not, therefore, very surprising that we shaped a wrong course after starting; fortunately the mistake was rectified in time, but we passed within a mile inside the Amherst Rocks.

Having cleared these dangers we were in the fair way up the river, and I steered to get hold of the south bank. The low thick haze had lifted, and for a short time the horizon was remarkably clear, so that we obtained from the quarter boat cross bearings of Sha-wie-shan and Gutzlaff Islands, an unusual circumstance, as I was afterwards informed.

The afternoon turned out very wet, and, as the wind was fresh in our teeth, I anchored for the night about twenty miles below Woosung, in four and a half fathoms, the low land of the south bank of the river just visible from the deck. Banked up the fires.

* A memorandum upon the necessity of erecting beacons, &c., for guiding ships safely up the Yang-tse-kiang, was published in the Chinese Repository, vol. xv. p. 99. But although the trade of Shanghai has doubled since, and is likely to increase enormously, no attempt has yet been made to carry out the suggestions contained therein.

June 25th.—Started again at 7h. A.M., under steam, and had a little help from a breeze, which was fed by heavy rain squalls. At 11h. 30m. stopped at Woosung for a few minutes to pick up a boat, kindly sent from the *Emily Jane*, with our letters; and at 1h. P.M. dropped the anchor off the Foreign settlement at Shanghai. The tide was running a perfect sluice, and in tending to it, our wire mizen topmast rigging caught the *Pilot's* main topmast studding sail boom, and carried away the topmast; luckily it was no worse, for the narrow reach was crowded with vessels, anchored without any regard to order: a harbour-master is very much wanted here. Moored within thirty yards of the jetty, at low water, best-bower in four fathoms with two shackles, small-bower in two and a half, with one shackle on it.

We had scarcely finished before the rain began to come down in good earnest, and continued almost incessantly day and night during the remainder of our stay here.

The 28th, the anniversary of Her Majesty's Coronation, was duly honoured by royal salutes, and I fear some of our countrymen's windows suffered in consequence. We received also on this day the melancholy intelligence of the death of Mr. Layton, our Consul at Amoy, who will be long regretted there, his many good qualities having won the respect and esteem of all with whom his duty brought him in contact.

I must not omit to mention that, during our absence from here, the most extraordinary stories were in circulation about us. The ship had been reported wrecked, sunk by the forts at the mouth of the Peiho, blown up with all hands, and I know not what else. These absurd rumours probably had their origin in a pamphlet printed at Nankin, and hawked about for sale at a few cash per copy. This precious document could scarcely have appeared unknown to the authorities; but although its absurdities and falsehood must have been apparent to every well informed native, it could not but have had a very pernicious effect amongst the common people, for whom it was intended.

A translation appeared in the *North China Herald*, and I shall transcribe from that journal some extracts from the

Chinese Account of the Visit to the Peiho by H.M.S. Reynard.

"Our new Lord Hien-fung of the Sacred Dynasty has ascended the throne, the seasons being propitious, the country prosperous, and the people tranquil.

"Of late years there have been barbarian banditti of merchants frequenting Shanghai for the sale of foreign goods.

"In the third month of the present year, several tens of barbarian ships went to Tein-tsin, for the ostensible purpose of conveying tribute. The white barbarian leader, with four others, carried there five thousand foreign soldiers, forty steamers, and thirty sailing war vessels, each carrying ten brass guns, the continued reports of which resounded off Tein-tsin for several days. The officers of the Celestial Dynasty, on the watch, seeing the barbarian vessels very numerous,

sent in a report to the General in charge of the barrier, who memorialized His Sacred Majesty, and thirty thousand superb troops were sent forward, with all their officers, high and low, each leading on their troops to defend the entrance to the river. There they saw the fleet of the barbarian ships; and the banditti, perceiving through their telescopes the martial array of government troops, ranged for defence of the port, led their vessels towards the shore, when Wang, the General, seeing them approach, ordered a volley of thirty great guns to be fired—which went off with a stunning noise, the smoke on the sea obscuring the heavens, and disabled several tens of the barbarian vessels. Then the courage of the barbarian banditti failed them, and they returned with their injured ships to Shanghai.

“Several tens of the barbarian devils, captured by the troops, were taken to the office of H.E. Luh, the Governor-General of Nankin, and tumbled out there.

“H.E. Luh on seeing the barbarian banditti was greatly enraged, and exclaimed, with a loud voice, ‘You! mean people, of a low tribe, how dare you presume to encroach upon the borders of the central flowery land? your lives must pay the forfeit of your crime.’ And he ordered them to be pushed forth, and all decapitated, and their heads exposed to the multitude.”

This miserable composition is a very good specimen of the method adopted to form public opinion here. Our “Fourth Estate of the Realm” has no existence in the Celestial Empire.

(To be Continued.)

LOSS OF THE BRIG MARY AT NATAL, WITH EARLY RECOLLECTIONS OF THAT SETTLEMENT.

(Continued from page 144.)

Fort Farwell presented anything but what its name implied, appearing, in truth, a very primitive, rude looking structure. It consisted of a quadrangular enclosure, composed of palisades driven in the ground, and about ten feet high, at each angle of which was a circular tower or turret, with a platform and embrasure, intended for heavy guns, which never were there.

Two pieces of ordnance lay within the walls of the fort, dismantled and neglected, from which it might be inferred that the inhabitants lived in peace and security. In the midst of this quadrangle stood a large edifice like a barn, the walls composed of what is technically called wattling daub, which is really wicker work, plastered with mud to fill up the interstices; a very expeditious, and at the same time an economical, mode of building in common use among Hottentots. Two or three other buildings on a small scale, offshoots of the parent

one, being identically alike in constitution, completed the interior of this original fortification. Outside of it, and at small distances around the walls of posts, were numerous native huts, presenting the appearance of gigantic beehives, and at a distance more like anthills. These were generally composed of a slight wicker work, of circular form, and covered with thatch, seldom exceeding six feet in height. As the natives never on any occasion require to stand upright, the aperture for entrance is seldom more than eighteen inches in height, and the same in breadth, so that crawling in through this doorway, the native seldom or never assumes the erect position when within his hut. The whole presented a picture of semi-civilization, blended with barbarism. Nothing in my youth and inexperience could reconcile this wretched looking place with the name it bore. I was grievously disappointed with Fort Farwell, expecting to see something that presented the means of acting either on the defensive or offensive, as occasion might require, and afford a secure retreat in case of necessity. It might be naturally supposed, that a feeling of security and confidence had not yet taken place in my mind, as to the good will of our sable friends, which time and intercourse had established in those who had resided long amongst them.

The inhabitants, or rather I should say the proprietors, of Fort Farwell, were a motley group of human beings; a mixture of whites, Hottentots, and native blacks, the latter in a perfect state of nudity, and the former in such a tattered condition as rendered it difficult to say in what costume they were, or whether they were clothed or not; and of the three parties the natives had certainly the advantage in appearance. The government of Fort Farwell appeared to partake of the democratic, so far as the white men were concerned, while as respected the natives it was of the patriarch. Each one of Mr. Farwell's party having a number of native retainers, over whom he exercised the most absolute control. All disputes that arose between these people were referred to and settled by their respective masters, the latter generally satisfying the aggrieved party by chastising the offender; while the only authority possessed by Mr. Farwell, being in that of a magisterial capacity of settling quarrels arising amongst his party, and to his decision all in general acquiesced. The whole aspect of men and materials in this singular place partook, in fact, of the character of the semi-civilized and semi-barbarous state, which to a stranger presented a highly curious and interesting scene.

Behind the Fort lay the extensive and gently undulating valley of the Umgainih with here and there scattered clumps of stately trees, giving it a park-like appearance. The dark and well defined outline of the wooded heights, which bounded this extensive plain as far as the eye could trace, the flocks of roebuck or fallow deer, grazing quietly here and there, or gamboling in the distance, presented a beauty and grandeur of scenery that quieted the gloomy thoughts of our forlorn condition. Often at the morning's dawn have I watched the first golden rays of the clear rising sun stretching far over the wide expanse of this beautiful valley, resembling pillars of gold abutting on the dis-

tant hills, when its death-like stillness would be suddenly broken by the tuneful voices of a thousand little feathered songsters in the adjoining groves, all uniting to complete a picture of nature which shed a soft and cheering influence over the mind, and in the midst of adversity raised the drooping spirits, and rendered the endurance of our lot comparatively happy.

While on the subject of Fort Farwell and its proprietors, I must observe, that Mr. Stephen Kay, in his book entitled *Researches in Eastern Africa*, has dealt some severe and unmerited reproof on the white people who first opened a trade with the Zoolas. This of course more particularly applies to Mr. Farwell and his party, and subsequently the shipwrecked crew of the brig *Mary*; and as these remarks of Mr. Kay will be handed down to posterity as matter of history, it is no less justice to the party assailed than a love of truth, to refute them, seeing that from several discrepancies in Mr. Kay's book in his account of Natal, relating at least to that in which I was an inferior actor, (but eye-witness,) is replete with error. I am disposed to think that Mr. Kay wrote from mere report, as I could not reconcile the idea of a man professing and teaching the Christian faith, being guilty of so gratuitous and malignant an attack on a party who claimed his Christian compassion rather than slander.

Mr. Kay says, in his *Caffrarian Researches*, chapter xvi., page 401: "It is almost superfluous to add, that the life of a black has in the estimation of such degraded wretches become quite common, and that the hope of gain, or a desire to secure the favour of chieftains, has not unfrequently proved a sufficient incentive to deeds the most base and sanguinary. Twenty or thirty of the natives having one day fled from the presence of Shaka, and taking refuge in the rocks where his spear was not able to reach them, the enraged savage, bent on making them the victims of his vengeance, called in the aid of these fire-armed men, who, horrid to relate, by means of their guns brought down the poor creatures like birds from a tree. The reader will not be surprised to learn that some of this band speedily afterwards fell by the hand of violence, and that others of the party were soon also called to the bar of the Almighty."

This is the character which Mr. Kay gives of the white people at Natal in 1826. Certainly it is but true, to go so far with Mr. Kay, as to his account of the living here. In reference to bed and board, we had of necessity to submit to much. Long habits of association with the natives, and seclusion from civilized society, even to that of each other, as in their trading journey to the interior kept us long and often separated from each other, had stamped their manners with a degree of uncouthness that was obvious to us on our first landing at Natal. And the same remark might have, and assuredly would have, applied to myself, if after three years and a half of residence among savages, I had been criticised in my air and gait by one who had never been without the comforts and style of a drawing-room. Indeed I feel no shame in confessing that after six months' absence on a long and somewhat perilous journey from Natal to Delagoa Bay, with occa-

sionally three and four months' residence with the king, during which I never saw nor had converse with a white man or woman, my constant and only companions being my rude native attendants, I had become so heathenish, as this pious missionary would say, that I had absolutely forgotten some words of my mother tongue. A Caffre word for an English one would drop in my conversation when meeting my shipmates after these long seclusions from their society. Certainly I was very young, but the same cause was productive of proportionate effects on the adults. Nevertheless they possessed the open and generous hearts of Englishmen. Although their manners had been thus somewhat distorted, their hearts retained their natural impulse of feeling and humanity, which had produced their effect on those natives who were under their guidance when contrasted with those who had not the benefit of this civilizing influence. It is true that the object of Mr. Farwell and his party in visiting Port Natal was not the spiritual reformation of the natives, nor had the shipwrecked crew of the *Mary* either the opportunity or the means of devoting their time or their labours in preaching the gospel to these rude and barbarous people; but their conduct was such as not only to inspire them with confidence and esteem, but exercised a salutary influence on all who had the benefit of their advice and example. Therefore the paragraph which I have quoted from Mr. Kay is as unjust as it is uncharitable.

Whether in the wise counsel of Omnipotence commercial enterprise, conquest, or missionary labour, shall prove the fittest and most successful medium through which to effect the civilization and conversion of the heathen to Christianity, is a problem which the history of the past and the experience of the future only can solve. But while hundreds of souls of our own kindred, nation, and tongue, are sunk in ignorance deep and dark as the African heathen, without even the knowledge of their having an immortal soul, or the name of Him who redeemed them with his blood; while such a state of things is well known and wide spread throughout our own land, every true and sincere Christian must deplore the time and means that are spent by the latter on any distant field, when those of our own present the same barren and uncultivated waste. Perhaps, indeed, the difference may consist in this, that our domestic heathenism does not afford so loud an echo for the voice of fame as that of the deserts and wilds of Africa. It cannot supply a harrowing tale of some zealous pioneer of the gospel being devoured by a wild beast in the jungle, or cruelly butchered by the bloody hand of a savage in the deserts of Africa, and thus a demand on the sympathy and drawing of the purse strings of the Christian public in behalf of these martyrs for the propagation of the gospel is lost, or why is it that the quiet and tranquil field at home should be overlooked and forgotten and left yet far and near to want the good tidings of the gospel.

In the course of these recollections there will be occasion to notice the cold-blooded massacres of these fire-armed men. A simple statement of the truth needs no embellishment, nor requires that I should stop now to refute so flagrant an assertion as that of shooting the na-

tives, who, as Mr. Kay says, got out of reach of Shaka's spear. Mr. Kay, I again repeat, wrote from hearsay. Having myself been an eyewitness on the scene of these cruelties, now at an advanced period of life, I do not, to my knowledge and belief, hazard a statement which is otherwise than true. The modes of living and the manners of the party at the time alluded to, were their misfortune not their fault. On our landing at Natal we found Mr. Farwell and his people destitute of every article even essential to civilized life. Time and habit, which always sooth down the ruggedness of the highways and byeways of life, reconciled them to their many privations; but the want of them was not the less severely felt.

Fort Farwell was rich in cattle, obtained by bartering with the natives, and presents at various times from the king; a cow and calf or a fat ox, being given readily in exchange for a blanket, or five to six pounds of glass beads, more or less, according to colour and size, the smallest being preferred, and blue, red, and green being more highly prized than those of other colours, white and black being considered the commonest, while green and yellow were only permitted to be worn by chiefs and persons in high authority, or by attendants on the royal household.

On our visit to Fort Farwell, we were regaled with sweet milk fresh from the cow, and sufficient to our heart's content; while the distance from our tents on Sandy Point to Fort Farwell being but two and a half to three miles distant, I availed myself night and morning of the opportunity of gratifying my appetite with refreshing draughts of this wholesome beverage; besides which, the good hearted Hottentot woman, Rachel, was in the habit every day of sending us a large calabash of sour curds, somewhat resembling new cheese, this being the manner in which the natives invariably use it, and which, with Indian corn, constitutes the principal part of their food. The corn is first boiled and bruised between two stones, the milk is prepared first, being thrown into calabashes or gourds made of skins, or compact basket-made vessels, similar in size and shape to the French demi-johns, it is left to stand until it becomes sour, which it soon does from the acidity retained in the vessel. Perhaps the process is accelerated by the state of these vessels, as they are never on any occasion washed. Indeed it would be considered highly improper to do so at each milking of the cows, which is done with great regularity night and morning. The watery portion of the curdled milk is then drawn off by a small spill at the bottom of the vessel. It is then filled with fresh milk, and the same process gone through until the whole contents of the calabash is one solid mass of curds, which are then fit for use, and the same process is repeated; and thus every village where there are cattle, (and what Caffre settlement is without them,) has a constant supply of this kind of milk kept ready for consumption.

Returning to our position at the departure of the Captain on his visit to the King, we were entertained for some days during his absence with a description of the war from which Mr. Farwell's party had returned. It appears that the battle was fought in the night, so

that the services of the fire-armed men on that occasion were not called into requisition. The enemy fought with great obstinacy and bravery, equal in every respect to the Zoolas, but the superior discipline and practice of the latter in war prevailed over the more uninitiated forces of the Izeecanyana, and the latter were beaten and almost totally annihilated, no quarter being given or received. The brave fellows, even when wholly discomfited, scorned to seek safety in flight, and even the women stepped into the ranks and filled up the gaps occasioned by their falling husbands; the old chief alone, at the earnest persuasion of a handful of devoted followers, saved himself when the field was irretrievably lost.

It was thought that if this battle had been fought by daylight, the result might have been very doubtful, as great numbers of the enemy had fallen by the hands of their own people, the darkness preventing them from distinguishing friend from foe. On the other hand, this was effectually guarded against by the superior generalship and intelligence of Shaka, his forces being guided from falling into the same error by having a countersign. Three thousand men and women of the enemy lay dead on the field, and of more than five thousand Zoola warriors, about half survived to witness the rising sun. To the credit of Shaka be it said, that on hearing of the gallant defence made by the enemy, he departed from the general rules in Caffrarian warfare, by proclaiming that all of the enemy who had survived and made their escape, should be spared and received as his children, and worthy of becoming the companions of Zoola warriors.

The policy of adding these brave men to his band of warriors, to strengthen and promote his success in future schemes of conquest, might be considered as the primary and only motive in the savage chief for exercising this act of mercy, were it not known that courage always had been a sure passport to Shaka's favour and esteem. Indeed this fact will be illustrated by many other instances in these recollections, in the memoir which I have attempted to give of the life of this extraordinary savage chief.

About 1,500 head of cattle were captured in this battle, and the unfortunate tribe of Izeecanyana entirely annihilated, with the few exceptions I have before mentioned. This tribe inhabited the rich and fertile country on the N.E. of, and nearly midway between Natal and Delagoa Bay. Their pursuits appeared to partake more of the agricultural than pastoral habits of the Caffre generally. They were represented as a powerful, well proportioned, robust, active race of people. The men joined in the labours of the field, contrary to the practice of the Zoolas and the Caffre tribe generally on the S.W. of Natal, and towards the frontiers of the Cape Colony, where all this hard work and every species of drudgery is performed by the women. Their extensive gardens of Indian corn and Guinea grain were laid waste and devastated by the enemy, who to complete the ruin of their fallen adversaries, left not the vestige of a habitation for shelter, or a blade of corn for their subsistence, throughout the land. There it remains a barren and desolate wilderness, where the bleaching bones

of the slain now blanch the plains, and present to the traveller the painful evidence of a field where one of the most fearful conflicts that ever took place between savage hosts was decided.

This then was the first instance that the fire-arms of the party at Natal were brought into use; but from the above brief notice of the battle, (which is really the truth,) it is needless to state the party assailed were not, as Mr. Kay has it, a few fugitives that had fled from the vengeance of Shaka, nor that they were brought down by the deadly aim of fire-armed miscreants like birds from a tree. But for the sake of truth, it has occurred to my recollection at the moment of writing this, that a solitary case of one native being shot occurred thus. In the mingling of the engaged in the darkness of the night, a Caffre had mistaken one of the Hottentots for an enemy, rushed on him, and was in the act of raising his spear to run him through, when the Hottentot shot him dead on the spot. This man, on examining the body, proved to be a Zoola soldier, and it was conjectured that the attack proceeded from design to kill the Hottentot, owing to an old standing grievance that existed between them.

(*To be continued.*)

REMARKS ON THE PRINCIPAL PORTS AND ANCHORING PLACES ALONG THE COAST OF THE DOMINICAN REPUBLIC.—*By Sir Robert H. Schomburgk, Ph. D., &c. &c.*

In a recent paper on the position of the city of Santo Domingo, I drew attention to the desirableness that a survey of this coast should be speedily effected. Setting aside that hydrography in general would gain by such a measure, our increased commerce with the Dominican Republic requires it.

The Spanish surveys in the West India Archipelago towards the end of the last and the commencement of the present century, no doubt filled up a great desideratum, if the little accurate knowledge be considered that existed at those periods of these islands. Great Britain had not taken then the leading step in ploughing the seas along the coasts of continents and islands to discover the hidden dangers for the mariner's information.

Hydrography, as a science, was then in its infancy; but the instruments in use have since acquired a perfection and have received improvements of which at that time we could have no conception. No wonder, therefore, that with such advantages the hydrographer of the present day finds frequently his predecessors to have been in error.

The encouragement which H.M.'s Government holds out to such as have an honest zeal to add to the information we possess of distant lands, is a distinguishing feature of our days. By means of that liberality, I have been enabled to procure a great deal of information with regard to Santo Domingo, the hydrographical part of which it is my

intention to place now, with the permission of H.M.'s Government, before the public.

I received in 1848 H.M.'s commission as Consul to the Dominican Republic, a young state, which had only recently risen where the great Columbus planted, in 1492, the proud standard of Spain, and claimed by right of first discovery the island as a dominion of the Castilian Sovereigns Ferdinand and Isabella. More than three centuries and a half have since passed away; and although the Island of Santo Domingo is scarcely four thousand miles from the coasts of Europe, and is surrounded by a cluster of islands for the most part thickly settled by Europeans and their descendants, its physical features are as unknown in Europe as they were when the great discoverer founded here the first European colony in the New World. Such an ignorance is an enigma, and can only be ascribed to the restrictive policy and prohibitory system of the mother country, which seemed to desire that her transatlantic possessions should remain a sealed book to the rest of the world.

It is not my intention to give here a relation of historical events. Suffice it to say that after various political changes the inhabitants of the former Spanish colony, Santo Domingo, declared themselves an independent nation, and were recognized as such by Her Majesty's Government.

On entering, therefore, upon my office, H.M.'s Secretary of State for Foreign Affairs instructed me to visit the territory of the Dominican Republic, and to examine its physical features and capabilities, principally with the view of introducing or extending British commerce. As I could only dedicate annually a short period to these investigations, the accomplishment of this plan has been protracted, and the successors of Lord Palmerston have, with an equal liberal spirit, permitted me to continue these researches, which in June, 1852, were concluded.

It was not intended during these expeditions to make surveys with trigonometrical exactitude. As on other occasions I could only consider myself a pioneer in a country hitherto unknown, or with which we were very slightly acquainted. Through the kind exertions of Rear-Admiral Sir Francis Beaufort, the Hydrographer of the Admiralty, I had received the use of two chronometers and an equatorial instrument, the latter of which I employed as a theodolite. I possessed a chronometer, good sextants, and several surveying and meteorological instruments, with which my investigations were carried on.

General Santana, upon whom his grateful country bestowed lately the title of "Libertador de la Patria," administered the Government when I started on my first expedition, in October, 1849. On learning the object I had in view, he despatched a circular to the authorities where I was to pass, not only enjoining them to place no obstructions in the way of my operations, but to give me every assistance if I should require it. I found, therefore, none of those difficulties which opposed themselves in some instances to my surveying operations during the succeeding expeditions, when General Santana was no

longer at the head of the public affairs. These were, however, so trivial that I should not have mentioned their occurrence, were it not that I wished to acknowledge publicly the comparatively greater obligation I owe to the General Libertador Santana for having been able to execute my task; for without his example when starting on my first expedition, I doubt that permission would have been granted by the authorities to continue my exploring tours.

The means which I possessed during these expeditions (which were connected in many instances with similar difficulties and privations as during my exploring expeditions in the wilds of Guiana) for the determination of the geographical positions have already been mentioned. The longitudes were determined by meridional differences ascertained by a chronometer. I took the city of Santo Domingo as my first meridian, from which I measured my positions east and west.* It frequently occurred that I returned to the same spot after the lapse of several days. I had therefore the advantage of a remeasurement, ascertaining thereby the travelling rate of the chronometer. During the first three expeditions in 1849, 1850, and 1851, I used the pocket chronometer, Parkinson and Frodsham, No. 1887, (the property of the Admiralty,) for my observations; and during the last voyage a pocket chronometer by Molineux, No. 3266. With regard to the latter, I can attest that during the long experience I have had, I never met previously a watch which, in spite of the shocks and accidents of travelling, has preserved such a uniform rate.† The chronometer was placed, during the journey, in an air-tight tin canister, and the best and most steady beast of burden was selected to carry this box right across its back. The horse was not changed to preserve a uniform gait or pace.

* See my paper "On the Position of the City of Santo Domingo," in the *Nautical Magazine*, 1852, p. 412.

† This chronometer, which Mr. Robert Molineux made for me in the year 1846, has accompanied me twice to the West Indies. During a voyage to Barbados, in 1846, it did not maintain a satisfactory rate, nor was I much pleased with it after my arrival at Santo Domingo. It received some injury, which obliged me to return it to England; and as not sufficient precaution had been taken to secure it during the voyage from Southampton to the West Indies, it was found out of order on its arrival. I had therefore to send it back to its maker, without that its performance could be ascertained. It reached me again in September, with a note from Lieut. Hast, R.N., commanding one of the Royal West India Mail Steamers, dated St. Thomas, 2nd September, 1851, informing me "it kept nearly mean time, gaining 0.12s. per day," which rate it maintained. On starting upon my last expedition, I found it on the 8th of May slow of mean time at this place 1m. 18s.; and on my return on the 24th June, it was slow 1m. 20.7s.; it had lost therefore 2.7s. in 47 days. It might be objected that this trifling difference was merely the cause of accident, and that by losing and gaining during the voyage the absolute error had so compensated itself as to show so trifling a loss as 2.7s. Such a supposition is removed by the following statement of the rates which I ascertained on returning, after an absence of several days, to certain places where I had previously determined its error.

The latitudes were determined by meridian altitudes of north and south stars, by means of a quicksilver horizon. Where circumstances did permit it, soundings have been taken; and the port or anchoring place has been surveyed from a base line and with the theodolite, for the object of giving a correcter plan of it than mere bearings would have afforded. I consider it, however, due to myself to state distinctly that these plans can only be taken as sketches, in the light of a pioneer's work. I had neither the time, nor was I authorized to incur the expenses which an accurate or detailed survey would have demanded. They can only be considered as approximations until circumstances permit the execution of detailed and accurate surveys by H.M.'s surveying vessels.

With regard to such places as I did not personally visit, I have endeavoured to procure the best information from Masters of vessels that have been there, or from pilots of acknowledged skill.

I. *General Remarks for Vessels that purpore to take in their Cargo in Santo Domingo, or the Coasts of the Republic.*

The British commerce with the Dominican Republic has greatly increased since the establishment of a Consulate in 1849. The principal articles of export, are, mahogany, fustic, logwood, and lignum vitæ; and from the north side tobacco is principally shipped. I have already observed, on a former occasion,* "that no coasts require a more careful and detailed survey than the south and east coasts of the Dominican Republic. The vessels that are to load at the Republic, are mostly

Rates of Pocket Chronometer. Molineux, No. 3266.			
Name of Place.	Number of Days between the observations	Rate per Day, as deduced from the error on starting and on returning.	Remarks.
Cotuy	13	— 0·20s	The chronometer was carried during these intervals from Santo Domingo, viâ Bonaò, to Santa Isabella, on the north coast, over some of the worst roads in the Republic.
La Vega	10	— 0·29	
Santiago	5	— 0·34	
Monte Plata	3	— 0·13	It remained stationary during this period.
Macoris	3	Mean Time	Do. do.
Romana	3	Mean Time	Do. do.
Romana	5	+ 0·68	
Macoris (on return)	11	+ 0·15	Travelling over very bad roads during the intervals.
Santo Domingo	47	— 0·06	This period comprises the whole voyage.

This is without doubt very satisfactory, and gives me great confidence in the meridian distances which I have determined by this watch. I had opportunity to remeasure by it some of the distances previously determined by Parkinson and Frodsham, and found them to differ but very little.

* *Nautical Magazine.*

chartered at Saint Thomas, generally with the condition to load at several places along the coast, the most of which are not inserted on the charts, and some are of that nature that it is almost impossible to effect the taking off the cargo without the risk of life and property. To this must be added that the pilots are, generally speaking, ignorant men, and a few only acquainted with the English language. The absence of accurate charts of the coast, places the Master of the vessel almost entirely at the mercy of the pilot. No community has more seriously suffered from the present state of things than the British shipowners and Insurance Companies."

Since my arrival here, there have been lost on the coast in 1849, two British vessels; in 1850, five ditto; in 1851, four ditto; to say nothing of American and French. It is therefore sincerely to be trusted that the surveys now carried on by H.M.'s surveying vessel *Scorpion*, be speedily extended to Santo Domingo. During the interval that this desirable measure is effected, I offer the following remarks on the principal ports and loading places on the coasts of the Dominican Republic.

It may be as well to state previously for general information, that the charges on vessels entering any of the open ports within the Republic, are moderate. The ports for entry and export are, the port of Santo Domingo, Puerto Plata, Azua, Samana; and Monte Christi for export only. The vessels that have to load on the southern and eastern coasts of the Republic, enter usually at Santo Domingo, and return, after having taken their cargo on board, for final despatch to that port.

The Republic has reserved to herself the coasting trade; but as their native shipping is not sufficient for such a purpose, the foreign vessels are permitted by paying 50 cents Spanish per ton for a licence, to load at any of the anchoring places or ports which are no ports of entry.

The other charges are: Tonnage duty for British vessels, 50 cents Spanish per ton;* Anchorage, 6 dollars; Pilotage, (if required,) 6 ditto; Health Officer, 2 ditto; Interpreter, 2 ditto; Entry, 4 ditto; Stage, (if required,) 4 ditto; Watering, 2 pesos, Dominican currency, per cask. There is also one quarter per cent. on the total amount of duties on importations and exportations, called "Derecho de Muelle," or Wharfage, which is paid by the merchants.

No extra charges are paid by vessels going from one of the ports open to the foreign trade to the other.

Vessels that enter under the following circumstances, are free of any port charges, except they require water or the services of a pilot, for both of which they have to pay the stipulated rate, namely:

1. Men-of-war, packets and despatch-boats, whether they be under Dominican or a foreign flag; vessels which arrive with emigrants on

* Vessels of other nations pay one dollar Spanish per ton. Great Britain having entered into a commercial treaty with the Dominican Republic, her merchant shipping pay like national vessels coming from a foreign port. The money mentioned here is in Spanish or American silver or gold. There exists an inconvertible paper currency, which fluctuates at present between 700 and 800 pesos for a doubloon.

board; and such as enter in distress or sell a part of their cargo for the purpose of satisfying their necessities, without doing any other business.

2. Such as enter or clear in ballast, or enter in distress for provisions, for inquiring the current prices, or in want of water, repairs, average or other causes, provided they do not discharge, or take any goods on board.

3. Vessels which in consequence of average, discharge a part or their whole cargo, if it should be sold on account of whom it may concern, will have to pay the same port charges as any other vessel; but if the cargo be re-exported in the same vessel, or in any other, without that any part of it is disposed, the vessel pays only two per cent. warehouse rent on the value of its cargo, according to an estimation made by arbitrators; and wharfage, pilotage, and water, if it should be required.

No article of any description is absolutely prohibited to be imported; but with respect to exports, it is not allowed to carry out of the country horses, and mahogany of a less size than ten inches in breadth. The latter regulation has no doubt for its object to prevent the cutting down of young trees.

The warehousing and bonding system is established by law, and extends to all ports open to foreign trade. Goods may be deposited at the Government or Custom-house stores for the space of sixty days, on paying a deposit duty of one per cent. on the amount of invoice. On the expiration of that term, if they have not been exported, they must be entered for importation, and pay the duty as regulated by the tariff.

The Master of the vessel engages, previous to his proceeding to the coast, a pilot, and according to the size of the vessel and the strength of his crew, a sufficient number of labourers to assist in loading the same. The pilot serves as stower, and receives from one and a half dollars, Spanish, to one and three quarter dollars per day, Sundays and holidays included; the labourers half that price. They are likewise maintained by the Master of the vessel while on board.

Although this expense for a vessel which has to remain from forty to fifty days on the coast is very heavy, the Master will generally find it more to his advantage to incur it than to expose his crew to an unaccustomed and heavy work under the tropics. The pilot superintends the labourers, who fix the rafts, and by their experience know how best to bring them alongside the ship. Europeans, not accustomed to work in the water, fall frequently sick in consequence of the exposure, and the doctor's and apothecary's bills are heavy in Santo Domingo.

(To be continued.)

DEVIATION OF THE COMPASS IN IRON STEAMERS.

The following paper, entitled "On the Deviation of the Compass on board Iron Steamers proceeding to the Southern Hemisphere," was read by Mr. J. T. Towson, at a Meeting of the Liverpool Literary and Philosophical Society, held at the Royal Institution, on Monday, February 21st, 1853 :

The term "Deviation of the Compass" is now employed to indicate the error of the compass resulting from the attraction of the iron of the ship, either employed in her construction, in her equipment, or in her cargo.

Variation, on the other hand, is the term applied exclusively to that error of the compass arising from the fact of the magnetic poles of the earth not being identical with the poles on which our planet performs her diurnal motion.

It is the former of these errors of the compass to which we shall refer in this paper.

It is admitted "that ships have been, and still are, navigated across the seas by persons who have no knowledge of the deviation of the compass;" but this is no argument against the attention of the navigator and the shipowner being directed to this subject. We do not pretend that the greater number of wrecks that are hourly occurring result from the neglect of the consideration of this subject; and we could occupy the whole of the time which it would be prudent to devote to the consideration of this subject in detailing the various calamities which have resulted from the general neglect of a due consideration of this error. We further maintain, that there was never a period in the history of navigation in which its consideration was equally demanded as in the present; that there does not exist a community more calculated to be affected by the phenomenon under our consideration than that of the mercantile body of Liverpool.

In order to understand the nature of the deviation of the compass, it is necessary to comprehend some portion of the theory of magnetism. The theory of magnetism, as a whole, is, however, too extensive a subject to occupy our attention in connection with the present investigation. We may, therefore, be pardoned in selecting those branches of the science that are in any measure connected with the mariner's compass. We would observe that a magnet is a body (generally ferruginous) possessing two dissimilar poles, that have the property of attracting or repelling other magnets. Dissimilar poles attract each other; similar poles repel each other.

Magnets may be divided into two classes—permanent magnets and inductive magnets: the former being generally composed of hard steel that has been magnetized, or the natural magnet, or loadstone. Inductive magnets are generally composed of soft iron, or cast iron, and are only magnets whilst under the influence of a permanent magnet, and the poles are determined by their relative position of such permanent magnet.

This earth is to be regarded as a permanent magnet, influencing every ferruginous body which is not under the superior influence of some other permanent magnet; consequently, all soft or cast iron on the surface of the earth at all times exercises a magnetic influence.

The term "permanent" must be understood in a restricted sense, both as it is applied to this earth or hard steel artificial magnets. It has been shown that not only do the magnetic poles of the earth vary in an age, but also, to a certain extent, there is a diurnal change in the intensity, dip, and variation of the compass. Also, steel artificial magnets, or needles, are subject to change. Since the difference between the nature of the body capable of becoming a permanent magnet depends upon its hardness, it is evident that no

ferruginous body is either sufficiently soft to be a perfect inductive magnet, nor sufficiently hard to be a permanent magnet; and this remark particularly applies to malleable iron, such as the angle iron and the plate iron of which iron ships are built, which are hardened to a considerable extent by being pressed between rollers. Such iron partakes of the nature both of permanent and inductive magnets.

If the magnetism of a ship that produces deviation were altogether permanent, its influence would not vary in different hemispheres; on the other hand, if all the magnetism were inductive, it would be reversed in passing to an opposite hemisphere.

In 1820, Mr. Barlow introduced a method of correcting the compass by means of soft-iron plates, and for some years his method was considered perfect; but since that period great changes have taken place both in the construction of the ship and in the nature of the voyages; both calculated in a much greater degree to test the accuracy of the compass. In those days the helmsman was not allowed to wear shoes with iron nails in them; but now, even in the construction of wooden ships, wrought iron has been introduced to a very great extent, such as diagonal riders, knees, boat's davits, tillers, &c., whilst in steamers more considerable portions of iron are employed; and, lastly, many ships are now composed of plate iron and angle iron to an extent calculated to divert the compass from its proper direction to the furthest practicable limits.

Then, again, the limits of voyages. The world is now circumnavigated as frequently as in those days the Atlantic was crossed; and, consequently, the varied direction of the earth's inductive influence is now felt to an extent not contemplated in the days of Barlow. When steamers rose into existence, another principle became active, for which Mr. Barlow was unprepared. His theory was founded on the hypothesis that the iron of ships was inductive and symmetrically arranged. If either of these conditions is unfulfilled, Mr. Barlow's plates cease to correct the compass. I need not occupy your time in showing that the soft and cast iron on shipboard is not symmetrically arranged. It is impossible that the inductive magnetism of an horizontal plate can compensate for a vertical piece of iron in all latitudes, since the inductive magnetism of the former is maximum at the Equator, but that of the latter at the Magnetic Poles.

In modern times it has also been proved that the other condition has not been fulfilled. The magnetism of ship's iron is not all inductive; on the contrary, in steam-vessels and in iron ships, from the hardness occasioned by cold hammering and rolling of the metal, some portions assume the character of permanent magnets. Indeed, the Astronomer Royal, in investigating this subject, has come to the conclusion that the disturbing force on the compass, in iron-built ships, consists of a very large force of permanent magnetism, for the following reason: "if the principal mass of iron be at the same level as the compass, it will vanish absolutely. It will vanish, also, if the masses of iron at the same vertical distance below the compass be arranged in symmetrical opposition on its different sides.* From these considerations, there is good reason to conclude that, it is in all cases extremely small; and, therefore, that the correction made in one latitude will be perfectly accurate in any other latitude." I must confess that I am at a loss to perceive the force of the logic of the Astronomer Royal. I admit his premises, but I cannot perceive the correctness of his conclusions. In the first place, we know that the principal portion of soft and cast iron is below the horizontal level of the compass; and, in the second place, a much greater amount of iron is generally placed between

* The Astronomer Royal here means, by employing the term symmetrical, when each magnetic force is counteracted by an equal force in a contrary direction.

the compass and bows than between it and the stern, and thus, neither of the conditions on which the disturbance vanishes is complied with.

There is no doubt, however, that the hypothesis of the Astronomer Royal is a nearer approximation to truth than that of Mr. Barlow, and, that practice resulting from his theory has, under certain circumstances, been attended with beneficial results.

Mr. Airy has introduced permanent magnets for the correction of the compass instead of the inductive magnetism of soft iron. This system was introduced into the service of the Cunard line from a very early period, under the management of Mr. Gray, and I have satisfied myself that the results have been very satisfactory. But it must be observed that, the voyages made by these steamers are not such as to test the value of the correction in different hemispheres; in a voyage from England to Boston, or New York, the magnetic dip does not vary to any considerable amount.

But the Astronomer Royal informs us that "it is satisfactory to add, that the *Ironsides* has three times crossed the Atlantic to South America, (approaching the magnetic equator,) and that the compass, corrected, has always been perfectly correct." Corresponding with this report, I have been informed that the captains of two iron steamers from Liverpool, one that weathered Cape Horn, and the other that coaled at the Cape, reported that their compasses were there all right. I am sorry, however, to be obliged to state, that I am very sceptical of these general reports from captains in the merchant service on their compasses. From my own knowledge few, very few, are the ships that proceed from this port, the compasses of which are ever compared with the heavenly bodies. The practice is far too common to report the compass "all right," if the voyage be made in safety, but "all wrong," if they meet with any accident. I made it my business to inquire of one of the captains, upon whose dictum the accuracy of the theory of the Astronomer Royal is said to be confirmed, what was the variation of the compass at the time he determined that the deviation was not changed? He had no record of his experiments; but we are required to confirm an important theory, by receiving these vague assertions. If, however, we should be placed in the position of being convinced that iron steamers have proceeded to the other hemisphere without experiencing any change in the deviation of the compass, still we could receive this as a fact, without being in the position to admit, generally, that iron vessels proceeding to another hemisphere will experience no change in the deviation of their compasses.

It is admitted that the Astronomer Royal is correct in stating that, under two conditions, the effect of inductive magnetism vanishes.

We dispute not that, in some iron vessels, one or other condition may exist; but we should doubt much that, under ordinary circumstances, either of these conditions do exist. In confirmation of this position, I have the authority of various experiments made in her Majesty's service.

In the year 1842, so great was the inconvenience arising from the deviation of the compass, that a compass department of the Admiralty was established, of which the late Captain Edward Johnson was the superintendent. I am sorry to be obliged now to say the *late* Captain Johnson, for, since the commencement of this paper, the country has been deprived of the most valuable services of this gentleman. Under the superintendence of Captain Johnson, experiments were conducted by some of the most accurate observers connected with her Majesty's service, aided by the best of instruments. Amongst the observers referred to we can number Sir James Ross, Sir John Franklin, Colonel Sabine, Captains Walker, Washington, Bullock, Hornby, and forty other experienced officers, including, also, the names of Lieutenants Phillips, Pasco, and Rigge.

Aided by the observations of these gentlemen, the deviation of the compass

has been made a matter of mathematical investigation; and Mr. Archibald Smith, barrister-at-law, has constructed a set of tables, by which the parts of deviation, resulting from permanent magnetism, can be separated from that part arising from the inductive magnetism that is active in the latitude in which the deviation is determined.

Mr. Napier has also invented a linear method for determining the same. Now, every ship in her Majesty's navy is swung for the purpose of determining the deviation; and in April last I obtained a score of these tables, for the purpose of examining them by Mr. Smith's method, and found that in no instance did the table show an inconsiderable amount of that part of the deviation which arises from inductive magnetism. Then, again, we find that actual observations have been made on board the *Bloodhound*, *Jackall*, *Trident*, *Propontis*, *Bosphorus*, &c. : and these experiments have confirmed the conclusion at variance with that arrived at by the Astronomer Royal. The experiments on board of the *Propontis* and *Bosphorus* were exceedingly interesting, as connected with this subject.

In the Royal Navy, the method of the Astronomer Royal has not been introduced; but these two steamers belong to the General Screw-steam Shipping Company, and had their compasses corrected on the plan of the Astronomer Royal; but, in passing to the other hemisphere, their compasses were from four to five points in error. This is exactly that which might be expected from reasoning on the subject. How can we account otherwise for the fact that, in this hemisphere the deviation of the compass is generally west when the ship's head is west, and east when the ship's head is east. The Astronomer Royal ascertained that the permanent magnetism of the *Rainbow* and *Ironsides* was such as to produce this result; that is, that their bows were permanently south poles, and their sterns were north poles; and he concludes, therefore, that the sterns of all iron vessels are north poles, and their bows south. I can scarcely imagine what can be the difference in the materials of iron vessels that can insure such a result, or, rather, that should render the contrary phenomenon a rare exception. There are only two iron steamers in her Majesty's service, that I am aware of, that are exceptions, the *Onyx* and the *Dover*. If we investigate the cause that influences the poles of a ship's permanent magnetism, we shall find it to be the direction of the slip on which she was built. It appears that the slips on which these two ships were built had their heads southward; consequently the heads were towards the south during the time that they were being built. Now, it is a well-known principle in magnetism, that if a piece of hard iron be held in the magnetic meridian, and struck repeatedly with a hammer, it will become magnetic, and that will be the north pole that is directed towards the north. If hammering can possibly make inductive magnetism permanent, we cannot be surprised if an iron-steamer should have the full amount of permanent magnetism that the materials are capable of acquiring; the rivetting of the plates being the very force calculated to produce this effect. Now, we have slips inclining in every direction, and, consequently, we have no reason to believe that the permanent magnetism is generally the same. But, if we allow that the inductive magnetism has a considerable influence in determining the deviation, we can account for this phenomenon by showing that, generally, a greater amount of magnetic influence exists between the bows and compass, than between the stern and compass.

Having stated these views on the subject under consideration, I leave it to the society to judge, whether the greatest caution ought not to be employed in connection with the compasses of iron vessels proceeding to the other hemisphere. If so, is it not the duty of all who have influence to promote this object? But I would further suggest, that the navy should not be allowed to acquire all the credit in investigating this subject. By a little effort to co-

operate with Mr. Hartnup and myself, this society have the means, by their influence, to acquire data that will at once settle the question which has hitherto undergone so much discussion. It is only for the owners of iron steamers to require a return of certain observations made at the Cape, or at Australia, and at once the fact, as far as that vessel is concerned, is determined. Till then, let our constant advice be, caution. Let no opportunity be lost in determining how much the compass is in error; and unless such an opportunity has recently occurred, let no iron steamer hug a headland so close as, by account, the unfortunate *Birkenhead* did Cape Danger, lest she, unfortunately, shall share the same fate.

To Arthur Hole, Esq., Commandaer of ship "Cambridge."

Melbourne, Oct. 12, 1853.

SIR,—We the undersigned passengers in the ship *Cambridge*, bound for Melbourne, Australia, feel it our duty to express our sense of the *kindness* and *urbanity* which we have received during the voyage from yourself and the officers under your command. And we cannot but advert in particular to your unceasing watchfulness and care for our health, comfort, and safety. We also congratulate you upon the very rapid and unprecedented passage, which through the mercies of Providence and your excellent seamanship, we have effected. It affords us much pleasure in presenting you this trifling expression of our sentiments, and in offering you our best wishes for your future welfare and success.

Signed,

WILLIAM DAVIS,
JAMES WEBB,
A. CUMSTIE,

CHARLES CHAMBERS,
RICHARD SADLER,
WILLIAM NEISH,

and the remainder of the 401 passengers.

In addition to the above testimonial, unanimously signed by 401 passengers, there was presented to Captain Hole by his passengers, through Mr. Cumstie, a splendid gold watch and appendages, bearing the following inscription:—"Presented to Arthur Hole, Esq., Commander of ship *Cambridge*, by his passengers from Liverpool to Melbourne, as a mark of respect and esteem, and for the unremitting attention to his duty during the voyage."

Inserted in the *Times* at the Passengers' request, Feb. 22, 1853.

HONORARY REWARDS.—A valuable silver salver has been presented to Capt. Carter, of the brig *Equator*, for saving the lives of the crew *Titania*. The inscription on the salver is as follows:—"Presented to Captain J. G. Carter, for his courage and humanity displayed in saving the crew of the barque *Titania*, lost in the China Sea on the 21st September, 1852, by the owners of the *Titania*."

FORKED LIGHTNING IN HURRICANES.

SIR,—Perhaps some of your correspondents may be able to answer the following query:—Does Forked Lightning or Thunder ever accompany Hurricanes in the West Indies?

I was present in two, and in neither was it observed; and when on the coast of British Yucatan some Ramah Indians, who were in much consternation at the threatening appearance of the sky, jumped for joy on hearing thunder, saying, "No fear of wind now."

It is generally supposed hurricanes do not extend to this coast. Something

very like it must have happened in 1831, when I believe all the vessels in Belize Harbour were driven on shore, and the trees stripped of their leaves, or what remained quite dead, as far north as we went, (Ambergris Cay,) a few weeks after.

AN OLD WEST INDIA WANDERER.

To the Editor of the Nautical Magazine.

NAUTICAL NOTICES.

CHINESE HYDROGRAPHY.

Singapore, February 1st, 1853.

SIR,—Perhaps some of the following observations may be considered by you worthy of publicity; if so, they are at your service.

I believe it is not generally known that the Beacon at the entrance of the Yantze-kiang River was stolen by the Chinese some three or four years ago, and has never been replaced. Now ships steering after losing sight of Gutzlaff to make this beacon, as directed by the late Admiralty charts to do, are very likely to be led into mischief by the want of this knowledge, as I was a couple of months since in the *Fatel Oneb*, being boarded by a pilot, who told me I was nearly on the north bank, and was still looking out for the beacon.

From the absence of land marks, and the extreme uncertainty of the tides, this is a most difficult river to make; the first of the flood setting S.S.W., and drawing round gradually by West to North, whereas on the charts it is stated that the first of the flood sets in due West.

At present the only safe way of entering the river, (until a light ship is stationed at the north bank, which there certainly ought to be,) after losing sight of Gutzlaff on an E.S.E bearing, is to steer well in towards the south bank, which with a flowing tide ships may approach almost in to their own draught of water; and keep that bank aboard till well within the bar, where the tides set fair up and down the river. The north banks are said to be increasing in height, and also extending fast to seaward.

There are now five licensed European pilots, as well as several Chinese, and with the exception of Woosung Bar they seldom put a ship ashore.

The depth of water on this latter bar is decreasing rapidly, for there is only ten feet at low water spring tides, where three and a quarter fathoms are laid down in the charts; but as the bar is of small extent, with deep water on each side of it, the process of clearing away the mud would not be a difficult one.

Some enterprising American merchants have a steam tug on her way out for this river, which will be of great service, as now it sometimes takes several days to get up or down.

The islands of Hoa-pin-su and Tia-yu-su, in about lat. 25° 45' N., are laid down in the Admiralty Index Chart, as also in Horsburgh's Chart, in long. 123° 00' E., while Horsburgh's Directory makes them in long. 123° 32'; and I made them, by indifferent observations, seven miles to the west of the Directory, or in long. 123° 25' E., which I think is very near the truth.

Harp Island, on the east coast of Formosa, is well known by coasters not to exist. I have myself been twice on its assigned position at noon on two clear days, when nothing like it was to be seen from the masthead.

The positions of Crag and Agincourt Islands I make almost the same as the Master of the *Agincourt*, in Part 3rd of *Nautical Magazine* for 1846.

I observe Sir, that the contributions to your valuable publication, from country commanders, are very few in proportion to those of others; but if there is anything in this of sufficient importance to be made public, you will

encourage me, who have been eleven years a subscriber, to be an occasional contributor.

I am, Sir, your's most obediently,
To the Editor of the Nautical Magazine. T. M. SMITH.
 [We hope to hear again from our correspondent.—Ed.]

COMPARATIVE ROUTES THROUGH TORRES STRAITS.

Finding at Sydney that a lithograph copy had been granted to the public of the *Beagle's* invaluable survey in the northern part of Torres Straits, for the immediate and particular use of such ships as might be bound to India that season, I for one gladly availed myself of the boon, and proceeded alone *en route* to Bombay, on the 11th August, 1849, but in six or seven days overtook a ship that had sailed a day or two before me. We kept company till I found that he was unwilling to try my road, he having determined upon Stead Passage.* Now my reasons for the preference of the Northern Blighs entrance over Steads', are these. That the approach to the latter is not marked by any object above water; that it is in the middle and greatest strength of the trade; that it is necessary to wait for the noon observation before you make the rush, which if you miss, you have before you a very disagreeable night, for Raine's entrance is too far to leeward to be attempted the same day, and possibly you may find it blowing too strong when you haul your wind to beat off the reefs, especially as the current sets to leeward so very strong. One night I hauled my wind to make short tacks till daylight, when down came my mainyard, the chain slings broke, and this occurred a second time to the rope I replaced it with; during all this time the reef was not far to leeward of me.

It often occurred to me, that a very cheap beacon might be placed on "detached reef," viz., a pyramid of Sydney grindstones, with a spindle through the middle, and socket on the top of it to receive another iron spindle bearing a vane; and as the *Lady Flora's* wreck lasted so many years on the next reef, I think this humble one would be all sufficient for the weather, and would indicate or distinguish "detached reef" enough to determine ship's position, without waiting a noon observation. Thus much for Steads Passage.

Raine's entrance is intricate, and in case of being missed offers no other neighbouring channel to leeward. And now for Bligh's Northern. It is so wide and safe, that if short of your distance at nightfall, you need be under no anxiety. You have plenty of room for long boards, no lateral currents, more moderate trade, commences sooner, lasts later, your distance and longitude can be proved by the high land of Cape Possession to the eastward before trying it, and if you make out Bramble Cay or Black Rocks at the entrance, even as late as sunset, you may safely run into the straits and anchor at pleasure. It has anchorages throughout, and certainly so much less dangerous, than in a short time, if it becomes generally adopted, as it certainly ought to be, I feel confident the underwriters would regard it as a very ordinary instead of extraordinary risk, and consequently reduce their premiums of insurance. As to time, it cannot exceed a day's loss at any rate, and it may save a day or more, for ships not unfrequently miss Steads', and lose a day or two in regaining a weather position.

Cocoa Nut Island, in this track, is deserving of notice from its fine grove of cocoa-nut trees, and being inhabited. The natives were in great agitation, and seemed to be splitting their very lungs to induce me to stop, but I passed them like a flying cloud, carrying all studding sails. They frequently have tortoiseshell in considerable quantity to trade away for tools. There was but

* This is marked "difficult" in the chart.—Ed.

one boat on the beach. As cocoa-nuts thrive so well here, why not beacon off Bramble Cay or Island with a few, even if it was necessary to transport the soil thither.

Cocoa Nut Island might be a desirable position for an establishment to trade with the natives on the contiguous coast, there being all the advantages of a soldier's wind between. I passed Cocoa Nut Island on the 28th August, and arrived in Bombay on the 12th October, 1849.

An old and respected acquaintance of mine in Singapore informed me, that somewhere to the eastward of these Straits, (he knew not the site, it might perhaps be obtained from the records of the East India House,) and some fifty years back, a lot of gentlemen from Penang made a location for trade, and planted the nutmeg amongst other things, but in consequence of being so far out of the way of any communication it was abandoned. This objection would not be urged in the present day; possibly the nutmeg has spread very considerably since. What a hopeful field for the precious metals, being traversed from end to end by the magnetic meridian, which might also be called the metallic meridian, and in its southern portion what a fine country for the production of rice. Here may be laid the foundation of a valuable trade, and here a very convenient West Indies to New South Wales might be found: the steam communication with India might as easily, as speedily, and with less risk, embrace all the eastern coast of New Guinea, proceeding by Dampiers Straits and the Pitts' Passage.

Hoping my brother skippers may be induced to try this channel,

I remain, &c.,

ROBERT LAURENCE FRASER,

Master of the *Lady Peel*.

1, Lime Street Square, March 4th, 1853.

SAILING DIRECTIONS FOR THE PORT OF AUCKLAND, NEW ZEALAND.

Compiled by Mr. Thomas Kerr, Master, R.N.

The only reasonable objection to Auckland is the fact of having to sail through the Houraki Gulf to get at it; that this difficulty has been much over-rated will be readily admitted, when it is known that there are only two hidden dangers, the hearer and Rough rocks, and both are buoyed.

High water, full and change, 7h. 5m. at Auckland, rise, 7 to 11 feet; strength, 0·7 to 1·5 miles per hour. Northward of Point Rodney and Mount Many-Peaks, flood runs to the northward; to the southward of these points the flood runs to the southward.

The bearings are all magnetic—Var. 13° E.

Strangers without the late surveys of H.M.S. *Acheron* should make the land either about Cape Colville or Cape Tewara, both remarkable objects, and not easily mistaken.

From the northward vessels would probably sight Cape Brett in lat 35° 10' S., and long 174° 23' E., which would be easily recognised from its rugged appearance and island off it; it may be seen 25 miles off. From Cape Brett the coast trends S.S.E. $\frac{1}{4}$ E., 43 miles to Cape Tewara or Bream Head, a bold precipitous coast nearly the whole distance.

From Percy Island, the small islet close off Cape Brett, to the north point of the Tawitirahi Islands, is E.b.S. $\frac{1}{4}$ S., southerly 26 miles; steer for them. These islands consist of two close together, each a mile long, lying north and south of each other, and four small islets, three miles to the southward; they may be seen ten or twelve miles from the deck, and passed on either side; then steer S.b.E. for Morotiri Islands.

Bream Head, the north point of a large bay, (Bream Tail, the south point, bearing S.b.E., 11 miles distant,) is in lat. $35^{\circ} 48' S.$, long. $174^{\circ} 34' E.$ Bream Head will be readily recognised, from its most remarkably rugged and castellated appearance; it has also a high hill 5 miles N.W. of it. North point of Tawhitirahi Islands to Bream Head S. $\frac{1}{2}$ W. 24 miles. South point ditto ditto, S. $\frac{3}{4}$ W., 17 miles.

The Morotiri group, or as it is more commonly called, the Hen and Chickens, will be another guide to Bream Head or Cape Tawara. The Morotiri Islands extend from east to west for a distance of 5 miles, being composed of three islands to the eastward, with several small islets to the westward of them; westernmost or inshore one bearing E.S.E., 6 miles from Bream Head, and S. $\frac{3}{4}$ E., 21 miles from southernmost of Tawhitirahi group. They may be seen 15 miles off.

Taranga Island, the Hen of the above Chickens, is a larger island (being 2 miles from E. to W., and one from N. to S.), it is $2\frac{1}{2}$ miles to southward, and has two small peaks, not unlike cows' teats, which may be seen 20 miles off.

Toutourou Island, or Sail Rock, so called from its resemblance to a fore-and-aft schooner, is 3 miles S. $\frac{1}{2}$ W. from the double summit of Taranga. From hence to S.W. point of Mount Many Peaks Island, N.W.b.W. $\frac{3}{4}$ W. 22 miles, and Point Rodney, S.E.b.S. 18 miles.

These islands may be passed close to on either side, and the main land approached anywhere within half a mile; passing them, you enter the Houraki Gulf, having Mokohinou, the Fanal Islands, &c., &c., to the eastward, distant 5 leagues. East end of Morotiri Islands, to N.E. of Mokohinou Island, E.b.N. $\frac{1}{2}$ N., 14 miles.

These islands should be avoided by strangers without a chart, by keeping to the westward of Houtourou, Little Barrier, or Mount Many-Peaks, as this island is indiscriminately called. It is $3\frac{1}{2}$ miles from F. to W., and 4 miles from N. to S., and is happily named Many-Peaks, having several peaks, the highest 2,400 feet above the level of the sea, and therefore the island may be seen from a great distance.

From its summit, in lat. $36^{\circ} 13' S.$, long. $175^{\circ} 4' E.$ (8 miles distant from the Great Barrier Island.)

Cape Tawara, or Bream Head, bears N.W.b.W. $\frac{1}{2}$ W., 33 miles.

Rodney Point (nearest point of mainland), S.W.b.W. $\frac{1}{2}$ W., 13 miles.

South Point of Kiahou or Kawau Island, S.b.W. $\frac{3}{4}$ W., 17 miles.

South Point of Tiritirimatangi Island, S. $\frac{3}{4}$ W. southerly, 26 miles.

Rangitoto Peak, S. $\frac{1}{2}$ W., 37 miles.

Cape Colville, S.E. $\frac{1}{2}$ E., 20 miles.

Takoupo Island, S.E. $\frac{3}{4}$ E., 17 miles.

Cuvier Island, E.b.S., easterly, $32\frac{1}{2}$ miles.

North Point of Otea, or Great Barrier, N.E.b.N., 17 miles.

C. Barrier, S.E. point ditto, E. $\frac{1}{2}$ S., 21 miles.

From Bream Tail the coast trends S.E. $\frac{3}{4}$ E., 19 miles to Point Rodney, where the tide divides. Southward of Point Rodney is Oina Bay, Point Takatau, the south point of which, bearing S.E. $\frac{1}{2}$ S., distant 6 miles.

From Takatau Point, the coast really falls back to west, but the apparent southerly trend is kept up by the Island of Kawau, (four miles from north to south,) forming an anchorage between it and the main, the northern channel to which, immediately to the southward of Takatau Point, although narrowest, is the best, the dangers being visible, but it requires a pilot.

On the W. side of the island is a bight, on the shore of which is a copper mine.

Takatau Point to south point of Kawau is S.S.E., Easterly, 5 miles.

N.E.b.F. $\frac{1}{2}$ E., nearly 2 miles from the south point of Kawau, is a flat rock, 30 or 40 feet over, and only 4 feet high; it is steep to, and if there is any sea it may be heard 2 or 3 miles off.

Between Kawau and Tiritirimatangi is a deep bight, running in to S.W.b.S. 12 miles, with no off-lying dangers. This bight is bounded on the south by Wanga Peninsula (Wangaproa) and the island of Tiritirimatangi, between which there is a passage $1\frac{1}{2}$ miles broad, with 17 or 18 fathoms, and no dangers but what may be seen lying close to the shores.

From the south point of Kawau a S. $\frac{1}{4}$ E. course will take you through the Wanga passage right down to the Rangitoto channel.

Tiritirimatangi, the Tiritiri of the charts, is a flat island, about 200 feet high, laying N.W.b.W. and S.E.b.E., 3 miles long; it may be known by the table-land behind it, which from a distance may be mistaken for the island itself. S.E. point of Tiritiri is S.b.E. $\frac{1}{2}$ E., $9\frac{1}{2}$ miles from south point of Kawau.

Off the S.E. point of Tiritiri nearly a mile is a sunken rock, which shows at low springs; there is a red and white buoy outside it, but being in deep water is easily washed away, therefore go through the Wanga passage or give the point a berth of 2 miles.

From Tiritiri Island, south point, the coast trends S.W.b.W. $\frac{1}{4}$ W., 8 miles to the bight of Tofino Bay; this line passes the Wanga channel (as above) and the Wanga Peninsula. From the bight of Tofino Bay the coast trends with a slight curve, S.E.b.S., 11 miles, to the North Head of Auckland, and may be approached anywhere within half a mile.

With the wind from the southward or westward, you may anchor with safety in this bay in 8 or 9 fathoms.

Leaving Mount Many-Peaks Island to northward, and steering south, with a fair wind, you will soon distinguish Tiritirimatangi (as above) and Rangitoto Peak, the summit of Rangitoto Island on the eastern side of the Rangitoto channel to Auckland; the western side of the channel being formed by the main land, on which side Mount Victoria, 280 feet high (with a signal staff on it) and the North Head Hill, two conspicuous round-looking hills, will warn you of your approach to Auckland.

Rangitoto Island will be easily recognised, rising gradually from the sea with a gentle slope, to a peak 500 or 600 feet high, which on a nearer approach resolves itself into three smaller ones.

The island is $3\frac{1}{2}$ miles from east to west, and 4 from north to south, being nearly round. Off its west end are some rocks, all above water, extending one-third of a mile off shore.

Passing Tiritirimatangi to the S.E., will be the islands of Rangitoto, Motu Tapu, and Waiheki, with a number of off-lying small islands to the northward of them, which may be approached as convenient, having no sunken dangers.

Of these Otatou is the outer, and bears from the south point of Tiritirimatangi S.E. $\frac{1}{4}$ E. 6 miles; it may be known by the rock like a haystack half a mile S.b.W. of it, Otatou to N.E. point of Waiheki, E. $\frac{1}{4}$ S., 12 miles. Otatou to west point of Rangitoto S.W.b.S., 9 miles.

Motu Tapu is joined to Rangitoto by a beach, is 4 miles from north to south, and $2\frac{1}{2}$ from east to west, having the small islands of Rakino and Otatou to northward of it.

To the eastward of Motu Tapu is the High channel, bounded on the other side by Waiheki.

Waiheki is 11 miles from east to west, $2\frac{1}{2}$ miles from north to south at its western, and 7 miles at its eastern end.

Twelve miles to the eastward of Waiheki is the harbour of Coromandel, and 25 miles to the southward the River Thames.

From the Wanga channel, S. $\frac{1}{4}$ E., 10 miles will take you into the channel, from a berth off south point of Tiritiri, (to avoid the Shearer Rock), steer S.S.W. or S.W.b.S.

S.E. point of Tiritiri to W. point of Rangitoto, S. $\frac{1}{4}$ E., 11 miles.

Ditto N. point ditto, South $9\frac{1}{2}$ miles.

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Ditto N.E. point of Waiheki, E.b.S. $\frac{1}{2}$ S., 16 miles.

Ditto Cape Colville, N.E.b.E., 23 miles.

Ditto Takaupo Island or Rock, N.E. $\frac{1}{4}$ E., 23 $\frac{1}{2}$ miles.

Ditto Cape Barrier, N.E., 34 miles.

Having passed the western (rocky) point of Rangitoto you will be in the channel, course through being S.E. 2 miles; it is 1 $\frac{1}{2}$ miles wide, with a general depth of 6 and 7 fathoms; you will have four fathoms anywhere at two cables from the shore.

The only danger in this channel is the Rough Rock, with 7 feet; on it is a red and white buoy bearing from the North Head S. $\frac{1}{4}$ W. $\frac{3}{4}$ mile; it may be passed on either side, but inside is narrow.

Auckland is built on the south bank of the Waitemate River, commonly called Auckland Harbour. The river runs east and west, and is about one mile broad.

North Head of the Harbour is the Bushy Point of the round hill (before mentioned), with a white beach immediately to the northward of it; passing this point, which is steep to on the west side, you enter the harbour; the town is 2 $\frac{1}{2}$ miles from the North Head.

E.b.S., nearly a mile from the North Head, are the Bean Black Buoy, and Beacon with staff and ball, on a reef of rocks extending from the south shore.

Keeping $\frac{1}{4}$ mile to the southward of North Head you may steer for the town, keeping outside the white buoy on a spit extending from Depot Point, which will be known by the white storehouse on it; above this the north shore is pretty bold.

The south shore should not be approached nearer than one third of a mile, being bounded by mud banks and rocky flats.

Anchor off the town as convenient, in six or seven fathoms mud.

Entering between Cape Colville and Cape Barrier make Cuvier Island, a small island (12 miles from the main land) rising gradually to the summit, N. point in lat. 36° 25' S., long. 175° 42' E.; it is two miles from north to south, and one from east to west. North point of Cuvier Island to Takoupo Island (like a haycock, two miles north of Cape Colville), the course is W.b.S. $\frac{1}{4}$ S., 19 miles. North point Cuvier Island to Cape Barrier is W.N.W., 12 miles. Ditto to eastern point of Haussez Islands, S.E.b.E., 17 miles.

Cape Barrier is the S.E. point of Otea or Great Barrier Island, which extends S.E. $\frac{1}{2}$ S. and N.E. $\frac{1}{4}$ N. 19 miles, and is 6 miles wide; it has a very rugged appearance, and its summit, Mount Hobson, is 2,100 feet high.

Cape Colville is on the main land, and may be known by the high hills to the southward of it, (one of them is 2,800 feet high,) and the turreted hill to the southward near Coromandel harbour, seen over.

From Cape Colville the coast trends to eastward, indented with many bays, and from thence E.S.E. towards the Haussez Islands; inside the Cape the coast runs S.S.E. 35 miles to the river Thames.

Between Cape Colville and Cape Barrier would be good entry for a stranger; as with Cuvier and Haussez Islands and the high hills of Cape Colville to southward, and Mount Hobson to northward, he might make sure of his land fall; the passage is 11 miles wide; Cape Colville to Cape Barrier S.W. $\frac{1}{4}$ W., 14 miles. Advancing, Mount Many-Peaks would be recognised. Cape Colville to south point of Tiritirimatangi, S.W.b.W., 23 miles, would be a good course until Rangitoto or Tiritirimatangi are seen, when proceed as above.

STORNOWAY, March 3.—A bottle containing a slip of paper, on which was written as follows, was found this forenoon by some fishermen off the mouth of this harbour, viz. :—"The ship is sinking fast; six feet water in the hold. We do not know where we are, if we are not on the west of Ireland. James Shearer, Captain, 1852."

NOTICE TO MARINERS.

CAPE OF GOOD HOPE, SUNKEN ROCK IN FALSE BAY.—The Lords Commissioners of the Admiralty have received from their naval surveyor at the Cape of Good Hope, an account of the discovery of a sunken rock in False Bay, carrying 15 feet over it at low water spring tides.

From the Roman Rocks it bears by compass N.N.E. $\frac{1}{2}$ E. about one and a half cables' lengths, and from the Light vessel it bears N.E. $\frac{1}{4}$ N. one cable's length.

CHANGES IN THE LIGHTS ON THE COAST OF NORWAY.—Her Majesty's Government has received the following official notice :

Notice is hereby given, that in the course of the Summer of 1853, a considerable change will take place in the Lights on the coast of Norway, between Christiansand and Stavanger, by which the Light of Hvidingso will be extinguished at sunrise on the 1st of May, and those of Oxo, Lindesnæs, and Gunnershoug or Lister, will be extinguished on the 1st of June next.

The above-mentioned Lights will again be shown as soon as the changes specified in the following account shall have been completed, of which due notice will be given.

1. Oxo, long. $8^{\circ} 6' 35''$ E., lat. $58^{\circ} 3' 25''$ N. Existing light : 1 fixed light with a flash every 4th minute, 2nd order ; to be altered into 1 fixed light, 2nd order ; 135 feet above the level of the sea, and visible at the distance of 18 or 20 miles.

2. Lindesnæs, long. $7^{\circ} 3'$ E., lat. $57^{\circ} 58'$ N. Existing light : 1 coal light ; to be altered into 1 revolving light with a flash every minute, 1st order ; 163 feet above the level of the sea, and visible 22 or 24 miles.

3. Lister, long. $6^{\circ} 32' 15''$ E., lat. $58^{\circ} 5' 30''$ N. Existing light : 1 revolving light with a flash every minute, 2nd order ; to be altered into 3 fixed lights, 2nd order ; 125 feet above the level of the sea, and visible at a distance of 18 or 20 miles.

4. Hvidingso, long. $5^{\circ} 25'$ E., lat. $59^{\circ} 4'$ N. Existing light : 1 coal light ; to be altered into 1 fixed light with a flash every 4th minute, 2nd order : 140 feet above the level of the sea, and visible 20 or 22 miles.

Christiania, Royal Navy Department, December the 2nd, 1852.

N. A. THRAP.

IMPROVEMENTS OF LIGHTS ON THE COAST OF HOLLAND.—The Dutch Government has given notice, that in May next the Light on Rykderia will undergo alterations, for which purpose it will be extinguished, and will subsequently reappear in an improved form. Also that the revolving light of Terschelling having to undergo repair, will be discontinued about the first of next month. And that during the intervals of repair, these lights will be substituted by others of the same kind, but of a temporary nature. Further notice will be given of these arrangements.

BAGSHAR ROCKS, BALTIC.—Her Majesty's consul at Wibourg has made known that a new stone beacon has just been completed on the easternmost of these rocks, in the form of a quadrangular pyramid 28 feet high, carrying on its summit a flagstaff and weather vane, which is 53 $\frac{1}{2}$ feet above the level of the sea. It stands in lat. $59^{\circ} 30' 30''$ N., and long. $20^{\circ} 29' 30''$ E. from Greenwich.

MELBOURNE, AUSTRALIA, Jan. 3.—We beg to remind masters of ships that the Passenger Act is now in force, and that all vessels must heave to or anchor in the bay until they have been boarded by the immigration officer. The lowest penalty for breach of the act is £20.—*Melbourne Morning Herald.*

NEW YORK, March 5—Commander Virgin reports, that on the 27th of September last, while heaving to off the Savage Island, lat. $19^{\circ} 10'$ S., long.

169° 57' W., the natives came on board and offered for barter several things that appeared to have belonged to an English vessel, which might have been wrecked or plundered near that island. They were—a ship's binnacle, a sextant in wooden frame, Dr. Johnson's *Comprehensive Dictionary*, with the name of "John Badinua, Jan. 1851, on the inside of the cover, and bound in cloth, a prayer-book in the same binding, and several pieces of log-line. — *Ship. Gaz.*

EXTRACT FROM THE REPORT ON THE LOSS OF THE VICTORIA STEAMER.

"I now beg to refer your lordships to the evidence of Mr. Vereker, ballast-master, and for many years secretary to the Ballast Board of Dublin, from which it appears that, in consequence of a steamer called the *Prince*, belonging to the same company, having struck her bowsprit against the rocks under the Hill of Howth in 1846, a correspondence took place between Mr. Howell, the secretary, and the corporation, the former suggesting and the latter admitting the necessity of having a fog-bell on the Bailey Lighthouse, and that a resolution to have one there was passed at a board meeting, and was entered in the minute-book; that a bell was procured from London, and forwarded to Dublin, but that it had not been put up, in consequence, as he stated, of matters of more importance inducing the inspector to postpone its erection; but he added, it is now the intention of the corporation to have it put up with as little delay as possible. Your lordships will, however, perceive that upwards of six years have elapsed since the Ballast Board admitted the necessity of having a bell on the Bailey, and up to the present time it has not been put up; and Lieutenant Saarsfield, R.N., Mr. Howell, the secretary of the steam-packet company, and Mr. Davis, the mate, are all of opinion, (with which opinion I concur,) that had there been a bell there to have given an alarm, the vessel would not have been lost, and it is to be hoped that no time will be lost in placing one in that situation. Having attended the coroner's inquest, I cannot refrain from remarking on a portion of the evidence, by which it appears that four hours before the *Victoria* struck there was no person on watch in the lighthouse—the person in charge awoke by hearing the cries of the shipwrecked parties on the rocks—and that one of the keepers, from infirmity of age, being between seventy and eighty, could scarcely be expected efficiently to perform the duties of his station.

"It now becomes my pleasing duty to bring to the notice of your lordships the conduct of Patrick Darcy, the young seaman who by his presence of mind in putting his finger in the plug-hole of the boat, and by unremitting exertions, prevented her from sinking, and, in company with the two other passengers, (Ralph and Kegg,) succeeded in landing fourteen persons, and, on going a second time to the wreck, in saving four others who had taken refuge in the rigging of the vessel when she went down.

"To conclude, the result of my investigation is as follows:—

"1. The *Victoria* was lost through the negligence of the master in not sounding, stopping the engines, or taking proper precautions when the snow shower came on.

"2. The conduct of the mate was to blame. He supposed the master was below, and ought to have known that the danger was imminent, and should have stopped the speed of the vessel.

"3. The steamer was well found in all respects, with the exception that the boats were not so placed as to be ready for immediate use.

"4. Had there been a fog-bell on the Bailey Light it is probable the accident might have been prevented.

"5. That the lighthouse was not properly attended to.

"The question of the fog-bell and the condition of the lighthouse and its establishment are for your lordships' consideration. With regard to the boats, I deem it my duty to state my opinion, founded on the present and former cases of accident, and to suggest that it would be very desirable if in all cases the boats of steamers were so placed as to be immediately ready for use, and if the officers in charge were instructed to station portions of the crew to the boats, and to hold them responsible for their use and efficiency when required.

"I have, &c.,

"W. H. WALKER."

NEW BOOKS.

SECOND VOYAGE OF THE PRINCE ALBERT IN SEARCH OF SIR JOHN FRANKLIN. *By Mr. Kennedy. Dalton, Cockspur Street.*

VISIT TO FURY BEACH.—We have little space for *reviewing* in the *Nautical Magazine*, and can only give occasional extracts from interesting works. The volume before us is one of peculiar interest throughout, and we can with confidence recommend it to all who may be disposed to follow our advice, and to procure and read the second voyage of this smart little vessel, which our readers will remember was commanded on her *first* voyage by Capt. Forsyth, who brought home the account of the discoveries of the first traces of Sir John Franklin's Expedition.

"Thursday, 8th.—In pursuance of the resolution come to yesterday, Mr. Bellot, John Smith, and myself, set out at an early hour for Fury Beach, with a determination to reach it that night. Being now unencumbered with the sleigh, we got over the ground much more rapidly than we had hitherto done, and towards five o'clock found ourselves in sight of it.

"We had already in our eagerness, aided by the marvellously refractive powers of an Arctic haze, mistaken, to our no small amusement, when we discovered it, a stranded packing-case, that lay on the beach on our way, for Sir John Ross's Somerset House; and on another occasion had well nigh found our way to the bottom of a precipice, that suddenly yawned beneath our feet, as we marched on absorbed in the exciting feelings of the moment, and utterly regardless of the sublunary consideration of looking where we were going. But for Mr. Bellot's presence of mind, and the keener vision of his younger eyes, I verily believe that he and myself would then and there have ended our mortal career.

"It may be imagined with what feelings, when we really had come upon it, we approached a spot round which so many hopes and anxieties had so long centered. Every object, distinguished by the moonlight in the distance became animated to our imaginations, into the forms of our long-absent countrymen; for had they been imprisoned anywhere in the Arctic seas, within a reasonable distance of Fury Beach, here we felt assured some of them at least would have been now. But alas! for these fond hopes! how deeply, though perhaps unconsciously cherished, none of us probably suspected, till standing under the tattered covering of Somerset House and gazing silently upon the solitude around us, we felt as we turned to look mournfully on each other's faces that the last ray of hope, as to this cherished imagination, had fled from our hearts. It is perhaps necessary for the vigorous prosecution of any difficult object that for the moment some particular circumstance in the chain of operations by which it is to be effected should seem to us so vitally important that the eye is

blinded to all beyond. The spot on which we now stood had so long been associated in our minds with some clue to the discovery of the solution of the painful mystery which hung over the fate of Franklin, and had so long unconsciously perhaps coloured all our thoughts, that it was not without a pang, and a feeling as if the main purpose of our expedition had been defeated, that we found all our long cherished anticipations shattered at a blow by the scene which met our eyes. Thus my friend and I stood paralyzed at the death-like solitude around us. No vestige of the visit of a human being was here since Lieut. Robinson had examined the depot in 1849. The stores, still in the most perfect preservation, were precisely in the well arranged condition described in the clear report of that energetic officer.

"His own notice of his visit was deeply buried in the snow, and the index staff he had placed over it was thrown down and gnawed by the foxes. Wearied with a long and fruitless examination we took up our quarters for a repose of a few hours in Somerset House, the frame of which was still standing entire, but the covering blown to rags by the wind, and one end of the house nearly filled with snow. We lighted a fire on the stove which had heated the end occupied by Sir John Ross's crew during the dreary winter of 1832-33.

"After refreshing ourselves with a warm supper, and nodding for a few hours over the fire, we set out about 11 P.M. on our return to our encampment, which we reached by 2 A.M. of the following morning. Our return from this point to the ship, which we reached about 5 P.M. of Saturday the 10th, was not marked by any incident worthy of notice. We had deposited at our encampment a 90lbs. case of pemmican, a bag of coals, two muskets, and some ammunition, which while it served as a reserve for future explorations in this direction, materially lightened the labour of the dogs, and allowed us time for a more minute examination of the coast than we had been able to make during the outward journey. The result, however, was not in any respect more successful. No traces of any kind were discovered which could throw light on the objects of our search.

"As a fact in natural history, it may be interesting to some to state that during our return we met with two ravens on the site of one of Sir John Ross's old encampments—the solitary denizens of these wastes during the cheerless gloom of an Arctic winter. We met with no other living creatures; hardly even a trace of their existence to break the universal and awful solitude which appears to reign over these regions during the depth of mid-winter.

"Thus ended our first journey to Fury Beach, and its result satisfied us, that in the present state of the ice in Prince Regent's Inlet, the more extended exploration of the coast line, which we had calculated on being able to commence on our return to the ship, could not now be safely undertaken, and must for the present be postponed. We were most reluctantly compelled therefore to pass the next month in the ship, occupied in the same general routine duties as those on which we had been engaged during the earlier part of the winter.

"Whether from any unusual mildness of the season, or from other causes, I cannot undertake to decide, but I was much struck by the fact that the cold experienced by us during the months of January and February was not by several degrees so intense as I had observed in other parts of the continent of North America in much lower latitudes. On one occasion the thermometer descended to 48°, but the average indication for the coldest months of winter was not much below 30°. Comparing this with the meteorological observations of Sir John Ross in 1833, one of two conclusions seems inevitable, either that the cold decreases in these latitudes with the progress northward, or that the winter of 1851-52 was an unusually mild one.

"The terrible enemies of our travelling-parties were the snow-storms and the furious gales which prevailed with us during the greater part of the

winter. A low temperature, even the lowest recorded in the Arctic regions, is elysium compared with a piercing nor'-easter driving the sharp keen spiculae of snow-drift, like a shower of red hot sand, in your face and through every pore of your body."

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

ENGLAND, West Coast, Sheet 2, Padstow to the Bristol Channel, with Views, Captain Sheringham, R.N.	-	-	2	0
IRELAND, West Coast, Sheet 10, Slyne Head to Liscaunor Bay, Commander G. A. Bedford, 1849	-	-	2	0
SCOTLAND, Cromarty Firth, Captain Otter, R.N., 1845	-	-	2	6
" Dornock Firth, Captain Otter, R.N., 1845	-	-	2	6
Tagus River, with Views, Mr. J. Richards, Master, R.N., 1851	-	-	2	6
NORTH AMERICA, East Coast, Causo Harbour, Captain Bayfield, R.N., 1850	-	-	1	6
" " Sable Island, Captain Bayfield, R.N., 1851	-	-	1	0
" Pacific Ocean, Kuper and Queen Charlotte Sounds, Captain Vancouver and Mr. Moore, R.N.	-	-	1	6
ARCTIC AMERICA, Point Barrow and Port Moore, Captain Moore, R.N., 1852	-	-	0	6
" Sheet 3, Behring Strait	-	-	1	6
MEDITERRANEAN, Keiths Reef, and Skerki Patches, Mr. Biddlecombe, R.N. 1841	-	-	1	6
SOUTH AFRICA, Bird Islands and Doddington Rock, 1852-	-	-	0	6
China Sea, corrected to 1853	-	-	2	0
Tambelan Islands and St. Esprit Group, Captain D. Ross, I.N., and Lieut. Gordon, R.N.	-	-	1	6
AUSTRALIA, Broken Bay, Captains Bethune and Stokes, R.N.	-	-	1	6
St Lawrence Directions, Vol. 2, from page 209 to 233, Captain H. W. Bayfield, R.N., 1852	-	-	0	2
British Lights, corrected to April, 1853.	-	-	-	-

EDWARD DUNSTERVILLE, Master, R.N.

Hydrographic Office, Admiralty, March 22nd, 1853.

ZOOPLYTES.—*Extract of a Letter from Lieutenant Thomas, R.N., to the Hydrographer.*—I think it necessary to acquaint you with a remarkable fact connected with our chain cables. The *Woodlark* was moored with a swivel on the 25th June, at St. Margaret's Hope, abreast of the *Bemor*, and the anchors were not weighed till the 10th November, a period of four months and a half. She was moored across the stream, with 50 fathoms of cable on each anchor, the anchors being very little more than that distance apart; one of them was in 10, the other little more than 4 fathoms water.

When we unmoored on the 10th, we found a length of chain equal to the depth of water, and as much of the mooring swivel as was under water, completely overgrown with a zoophyte—*Tubulana larynx*—so much as to conceal the surface of the cable, and give to it the appearance of a bottle-brush.

This would have been of little consequence, but when the cables were cleaned, they were observed to be so much injured, as to be no longer trustworthy, for the surface of the iron presented a honeycomb or fibrous appearance, into some places eaten into for an eighth of an inch.

The same thing happened to so much of the mooring swivel as was under

water, but all that part of the cable that lay upon the soft muddy bottom was clean and uninjured.

I cannot speak positively as to the cause of the destruction of the iron, but I do not suppose it was from any peculiar acid secretion from the zoophyte, but as the root (so to speak) of the plant-like animal is of a fibrous nature, and has the property of attaching to itself the particles of mud and sand that are brought to it by the motion of the water, thus forming a muddy cushion around its base, which becomes an additional protection—such conditions are very favourable for the decomposition of the metal, and in this way the damage done to the chain may be accounted for. But I have strong suspicion of a feeble current of galvanic electricity having been brought into action by the peculiar arrangement of the iron, for on inquiry I learn that the mooring chains placed on the buoys in the Firth do not suffer in this manner, while I quite well remember that the iron shackle for the *Woodlark's* bobstay, which was linked with the copper one bolted through the stem, would last but a single summer, the copper one remaining uninjured.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory
From the 21st of February, to the 20th of March, 1853.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter. Strength.				Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
21	M.	30.06	30.04	30	34	27	35	NW	NW	2	1	b	o
22	Tu.	29.96	29.88	31	36	24	37	SW	W	2	2	os 2)	osr 3)
23	W.	29.56	29.38	36	40	33	41	NW	NW	4	6	bc	qbeps 3) (4)
24	Th.	29.72	30.70	32	37	28	36	N	NW	4	5	bc	qosr 4)
25	F.	29.48	29.66	35	38	34	40	N	N	6	7	qber 1)	qbc
26	S.	29.13	28.95	39	39	30	42	W	NW	6	6	qosr 1) (2)	qopsr 3)
27	Su.	29.48	29.60	33	37	31	39	N	N	2	2	ops 2)	bcm
28	M.	29.86	29.86	30	36	25	37	N	N	2	4	b	bc
1	Tu.	29.65	29.59	33	34	27	35	SW	S	2	1	os 2)	os (3 r)
2	W.	29.38	29.36	35	40	29	41	W	N	1	4	oprs 2)	o
3	Th.	29.83	29.97	33	37	30	38	NE	NE	2	5	bc	qbeps 3)
4	F.	30.10	30.08	30	41	26	42	SW	SW	1	3	bm	bcmr 4)
5	S.	29.81	29.75	44	49	36	50	SW	SW	1	1	or 1) (2)	or 3)
6	Su.	29.92	29.94	45	53	42	54	SW	W	1	2	o	o
7	M.	29.95	29.94	48	52	45	53	W	W	2	2	or 1) (2)	o
8	Tu.	29.93	29.95	45	47	37	49	SW	SW	1	1	o	or 3)
9	W.	30.16	30.25	38	48	33	49	N	S	1	3	bef	bcm
10	Th.	30.17	30.21	44	54	37	55	S	S	1	1	bc	o
11	F.	30.16	30.09	38	48	33	49	E	E	4	4	bef	b
12	S.	30.04	29.96	39	51	36	52	NE	E	2	3	bef	b
13	Su.	29.86	29.76	40	56	36	57	SE	S	1	2	bc	bc
14	M.	29.52	29.61	47	41	39	47	SE	W	1	3	or 1) (2)	or 3)
15	Tu.	29.60	29.57	40	48	33	40	S	S	2	1	bc	bc
16	W.	29.61	29.62	39	42	37	43	NE	NE	2	4	o	os 4)
17	Th.	29.82	29.83	31	31	30	32	NE	NE	3	3	os 1) (2)	os 3) (4)
18	F.	29.94	29.98	28	32	25	33	NE	NE	3	4	beps 2)	beps 3)
19	S.	30.12	30.10	29	37	23	39	N	N	6	5	qbeps 1) (2)	qbc
20	Su.	30.12	30.08	32	39	28	40	NW	NW	2	2	bcm	o

February, 1853.—Mean height of the barometer = 29.613 inches; mean temperature = 33.1 degrees; depth of rain fallen, and snow melted, = 0.87 inches.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

MAY, 1853.

REMARKS ON THE PRINCIPAL PORTS AND ANCHORING PLACES ALONG
THE COAST OF THE DOMINICAN REPUBLIC.—By Sir Robert H.
Schomburgh, Ph. D., &c. &c.

(Continued from page 207.)

Ports and Anchoring Places.

The Port of SANTO DOMINGO claims the first attention, as the commerce of the southern coast of the Republic is principally carried on from there. The other ports on the south are seldom resorted to for entrance or clearance.

The signal tower on the west point is, according to my observations, in lat. $18^{\circ} 28' 22''$ N., and in long. $69^{\circ} 52' 10''$ W.*

The port is formed by the River Ozamo, where it enters the sea. Unfortunately there is a bar at its mouth with only 13 feet water. After passing the same, there are from 16 to 19 feet water for more than three miles up the river. Large vessels are therefore prevented from entering this port, otherwise so commodious and secure; for a vessel can lie so close to the shore, that she discharges her cargo by means of planks. With such steep banks it would be easy to construct the necessary works for careening and repairing vessels within the river.

The bar extends from east to west; it is larger on the left than on

* See *Nautical Magazine*, 1852.

the right bank, and ends in a narrow strip close to the rocky point, on the right or western bank, somewhat south of the signal tower.

It has been pretended that the state of this bar does not change. This seems to be an error; for it is recorded that during the end of the last century it had 14½ feet during low water in ordinary tides. H.M.S. *Trincomalee* and *Hound*, which have carefully sounded it in 1849, found only a fraction more than 13 feet (reduced to low water mark) at the deepest part. The historian Oviedo, a contemporary of Columbus, says that he has seen the *Imperial*, a vessel of more than 400 tons, entering the port; and M. Maintenon, commanding a French frigate, sounded the bar in 1681, and found 17 feet water on it.

The tide rises seldom to more than twenty inches, and the current sweeps with great strength through the mouth. It prevents the vessel from obeying the helm when not favoured by a fair land breeze, and has in several instances caused the ship to touch. The same danger threatens vessels on entering the river. It should not be attempted, under any circumstances, to enter the port without a pilot on board, and a good breeze to fill the sails.

Large vessels anchor in the roads, in from 8 to 12 fathoms water, distant about a mile from the shore. They are here exposed to the south wind, and the heavy swell of the sea. The anchorage consists of good holding ground; but it must be considered, that should a misfortune befall the vessel, she would be sure to be smashed to pieces against the steep rocks that form the shore at this part of the coast. If the weather has a threatening appearance, chiefly during the hurricane months, all preparations should be made to be able to slip and stand out to sea.

Through the kindness of Mr. Joseph Walker, Master of H.M.S. *Trincomalee*, which vessel was, in 1849, at anchor in this roadstead, I have received the following Sailing Directions:

“The bank of anchoring ground off St. Domingo is very steep, and for the first few casts irregular, 40, 15, 10, 8. After that, the soundings decrease gradually towards the shore. In coming in, give the East Point a berth of two cables' length, to avoid a rocky reef with 2½ fathoms on it, which stretches off to that distance. This danger will show itself by the breakers when there is any swell.

“If bound inside, keep a square white house on the East bank of the river, twice its breadth open of the West Point, on which stands the signal tower. Keep this mark on till you are within two cables' length of the West Point; you will then discern a low sandy spit,* running off from the Eastern side; steer directly for it and pass it close; there is no danger, as there are 16 feet at a distance of 10 feet from it; but on the other side is a sunken rock with only 2 feet on it. With the marks given above, you will carry 13 feet over the bar, and after passing the sandy spit you will have from 16 to 19 feet three miles up the river.

* This spit has greatly changed in appearance since the severe gale in August, 1851, when it was nearly swept away. There is still the depth of water above expressed.

" If intending to anchor outside, do not shut in the houses on the East side of the river at all, but anchor with them rather open; the last point bearing N.E.b.E. in 8 fathoms, sand and mud. With the houses open the bank extends off, rather more than one nautic mile from the shore, narrowing considerably to the Westward. The bottom also becomes rocky and uneven, when the houses on the Eastern bank become shut in by the West Point. The best anchorage is decidedly when they are well open."

The Port Regulations are as follows :

" The Commandant of the port, anxious to facilitate to the Masters of merchant vessels, the fulfilment of these duties which the local police imposes on them, has comprised the principal dispositions in the following Articles :

" Art. 1. Every Master of a vessel entering from abroad shall remit to the pilot who comes on board all the letters and newspapers intended for this port, excepting the consignee's letters. It remains at the option of the Master to take the pilot or not, in order to anchor his vessel in the roadstead, or to bring her into the port.

" Art. 2. When the Health Officer visits the vessel, the Master will deliver the requisite bill of health, and will muster the whole of his crew and passengers.

" Art. 3. After the vessel has anchored, the officers of the Custom-house will come on board, to whom the Master shall give up the register of the vessel and the manifest of his whole cargo; he shall afford them every facility to affix the seals, and shall allow one of their number to remain on board until the vessel has finished discharging.

" Art. 4. The pilot will bring the vessel, whether with cargo or in ballast, to anchor at the proper place for its discharge, and in no instance can the vessel change place without the previous authorization of the Commandant of the Port.

" Art. 5. The throwing overboard of ballast is prohibited to all Masters of vessels, as well in the port as in the roadstead; they have to address themselves to the Captain of the Port in case of such a necessity, who will assign to them the proper place for its discharge.

" Art. 6. In order to obtain a coast pilot, and the necessary labourers for a vessel which is to load on the coast, the Master, accompanied by his consignee, will address himself to the Commandant of the Port to assign them to him, and to see that a contract and advances may be made to them in his presence.

" Art. 7. When the Commandant of the Port passes his visit, previous to the departure of the vessel, the Master shall produce the passports of such passengers as might be on board, and he shall likewise deliver the fortpass to the guard ship before he makes sail.

SIMON CORSO.

The Commandant of the Port."

St. Domingo, 15th August, 1852.

The city was built by Ovando, in 1504, on the right or western

bank of the River Ozama, and received later the name of Santo Domingo. Bartholomew Columbus, the brother of the great discoverer, had founded it first on the left bank, and had given to it the name of New Isabella.*

It is surrounded with a wall, and defended by the fort on the western point and several outworks and bastions; but the fortifications are not adequate to our present mode of warfare. It possesses about 6,000 inhabitants, a market only sparsely provided, but excellent fresh meat, varying from 1d. to 2d. sterling per pound. Salt provisions, flour, and rice, are imported from the United States.

Reviewing the other ports and anchoring or loading places along the coast of the Republic, I shall select Cape Engano as my starting point, and turn first from this eastern point along the South coast, and afterwards to the North. It will be requisite to state here, that by error the native pilots designate Cape Engano under Punta Espada, and the point known under that name in the charts as Cape Raphael.

PUNTA ESPADA is too remarkable in its outlines to be mistaken. It lies about 10 miles from the East point of the island of Saona. Punta Engano, the true East point of the Island of Santo Domingo, is a low point stretching sharply to the eastward.

The first anchoring place to the south of Cape Engano, is PUNTA CANA, in lat. $18^{\circ} 30' N.$, and long. $68^{\circ} 23' W.$ The shore is skirted by a reef, which obliges the vessels that have to take in cargo at this place to lie according to size from one to one and a half sea miles from the shore. The reef affords passages for the boats to take off the cargo from the beach, which is sandy.

The British brig, *Brazilian*, bound from Puerto Cabello, with a cargo of coffee and indigo, to New York, was wrecked here on the 8th of May, 1850. The author of these remarks proceeded on board the Dominican man of war schooner *Constitution*, to the scene of the disaster, which vessel anchored on that occasion about a mile from shore. The tide ran during that period with a velocity of $3\frac{1}{2}$ knots for 9 hours to the S.S.W., and merely for $2\frac{1}{2}$ or 3 hours to the N.E.b.N. The pilot on board the schooner observed, that he was well acquainted with this coast, and that the tides were not always of equal strength, running sometimes 6 hours to the S.S.W. and 6 hours to the N.E.; at other periods the ebb tides were stronger than the flood tides, and if

* It was here in a fortress, constructed of wood, that the great discoverer of the New World was confined in 1500 by Bobadilla in irons, until he was removed on board the vessel that carried him to Spain. The tradition is erroneous which points out the strong tower of the present fortress as the place where Columbus was imprisoned. The Governor Ovando transferred the city only in 1504 to its present site; New Isabella having been destroyed in 1502 by a hurricane, and the ground on which it stood being invested by ants that destroyed the cultivation, he preferred to rebuild it where it now is. The house called Columbus Castle, and of which the ruins are still standing, was constructed by Diego Columbus, the son of Christopher, after his arrival as Viceroy in 1509.

such a case occurred, the north-easterly tide ran even with greater velocity than the south-westerly.*

Vessels (excepting small sloops that draw no more than six feet) are obliged to come to an anchor outside of the reef. A vessel of from 300 to 400 tons, would not be safe closer than a mile and a half from the land. There are two breaks in the reef, which are used for taking the wood from the shore on board. They have 6 and $6\frac{1}{2}$ feet water; it is however requisite to use caution with the launch, as the passages are narrow, and much impeded inside by heads of coral rocks. The swell or ground sea is sometimes very severe along this coast, and a stiff northerly wind renders all communication with the shore impossible. The months from May to October are the best qualified for loading here. The breeze is generally at that time to the South of East, and calms prevail more than at any other period.

PUNTANAL and GUAYACANES. These loading places are a few leagues further towards Punta Espada, and the remarks made with regard to Punta Cana apply equally to Puntanal and Guayacanes. There are some ranchos or huts on the beach, inhabited by the labourers of the adjacent mahogany cuts. Puntanal is about three sea miles South of Punta Cana.

BOCA YUMA or HIGUEY. The anchorage is good but exposed to the breezes. You anchor off the small sandy beach called Playeta, near the windward point of the river, in 12 fathoms water. A bar, which affords only from $8\frac{1}{2}$ to 9 feet water, prevents large vessels from entering the river. Within the bar there are 12 feet water. The anchorage is well protected though small in extent. Fresh water may be procured by ascending the river to the Derumbadero. This can only be done in a small boat. There lived at the time of my visit a single person in Punta Yuma.

The anchorage between **CABO FALSO** and Punta Yuma is good; vessels may lie close in in from 9 to 12 fathoms. The ship is however exposed to the North-easterly winds. It must likewise be observed, that the tides run with great velocity, chiefly near Punta Cuevita, where it races with a velocity of from four to five knots.

During my examination of these two places, I had no boat at my command to procure soundings. The information of the depth of water stated above, has been procured from very good sources.

According to my observations, Punta Yuma lies in lat. $18^{\circ} 22' 46''$ N., and long. $68^{\circ} 35' 36''$ W. From this determination I have deduced the position of Cabo Falso as in lat. $18^{\circ} 20' 10''$ N., and long. $68^{\circ} 35' 24''$ W.

The land of Cabo Falso rises in mural precipices of coralline limestone from 150 to 220 feet. The false cape is the projecting southern point of this elevation, and presents, as seen from the North, the profile of a grotesque head.

GRANCHORA. This loading place ought never to be included in a

* See *Nautical Magazine*, vol. xxi. p. 289, "On the Currents and Tides of the Mona Passage."

charterparty. It is situated about three miles to the S.W. of Cabo Falso. The vessel cannot approach within several miles, and has to anchor to the lee of Catalinita, or to the lee of the reef that stretches from Granchora towards that islet. Such a heavy sea prevails usually along the shore, that weeks may elapse before the launch can take off a load. The Danish brig *Sympathie*, was, in the months of April and May 1852, lying for several weeks at this anchorage, without being once able to communicate with the shore. She was ultimately obliged to return without having taken off a single piece of wood.

The same remarks refer to PUNTA MARTEL.

The Island of SAONA and Islet CATALINITA. This small island extends from its eastern point about 16 miles N., 70° W. It has a projecting southern point, and is at its widest part from South to North about five miles across. Between it and the main lies the islet Catalinita, bearing from the rocky north-eastern point of Saona N. 50° W., distant five and a half miles. A large horse-shoe reef extends from Catalinita towards Saona, affording, however, between the north coast of the latter and the south-eastern extent of the reef, a fine channel, with 6 fathoms water. When the reef has been cleared, the vessel ought to keep North-westerly, to avoid a shallow that runs out from Saona, and anchor in 5 fathoms water, Catalinita bearing N.b.E.

Small vessels may pass through the channel between Saona and the main coast of Santo Domingo; at its Eastern outlet, however, are mud banks with only 7 feet water over them.

When keeping for the anchorage of Catalinita, you may make bold with the northern shore of Saona until the horse-shoe is cleared. The anchorage is well protected, and the bottom clear and sandy. The currents sweep with great force towards the N.W. The brig *Ravenwood* of Glasgow was wrecked and totally lost during the night of the 19th October, 1852, at the east end of Catalinita, believing herself, at the time the disaster occurred, opposite the west end of Saona, and many miles to the south of it.

The north-eastern point of Saona is bold, consisting of high cliffs; but its south-eastern point is low; and there stretches a reef to the south-eastward which breaks near the shore, and extends under the water for nearly three miles, with only 4 and 5 fathoms over it. The reef keeps this depth until within a mile of the low south-eastern point of Saona. Large vessels coming from the East, ought not to approach the shore to within four miles, until the extreme southern point is cleared.

There is a good anchorage about three miles to the West of the South-eastern point, in front of a sandy beach, called Bahia Cabello; but at about one and three quarters to two miles to the South of the bay, where the sandy beach ends and the shore becomes rocky, lies a dangerous shoal, on which several vessels have struck; and more recently (namely in August, 1850) the British barque *Alert*, of Halifax, N.S.* The shallowest part has only 6 feet, with the water breaking

* I have already drawn the attention to the strong currents to the south of

upon it during a heavy sea. A quarter of a mile to the N.N.W. of it, is another dangerous shoal, with from 9 feet to 3 fathoms water. There is a good pass between it and the eastern shoal. Vessels frequent occasionally Bahia Cabello for the sake of fire-wood and fresh water.

The opening or western entrance to the Channel of Catalinita, between Saona and the main coast, is called Boca del Catujano. As already observed, it has only 7 feet water at its shallowest part, being narrowed in by mud banks and coral rocks.

It ought likewise to be noted, that a reef stretches from the western point of Saona, towards the main shore, which must be guarded against should a vessel on beating up keep the shore. The late Captain Lawrence, of H.M.'s surveying vessel *Scorpion*, determined the position of the sandy beach (Cascon) a little to the south of the two western points, as in lat. $8^{\circ} 10' 18''$ N., and long. $68^{\circ} 46' 53''$ W., the latter relative to St. Thomas, taken as in long. $64^{\circ} 55' 40.5''$ W.

BOCA DE QUIABON, vulgarly called CHABON. This is an open roadstead with good anchoring ground. Large vessels anchor in from 8 to 9 fathoms water; the mark for the anchorage is, to keep the point Las Minas in one with Point Aguila, that forms the eastern point of La Romana, and to bring the two cocoa-nut trees on the shore, in front of the largest house in the small village, to bear north. The bottom shallows very gradually, and at the distance of three cables' length from the shore, there is still a depth of 3 fathoms. The ground to the windward of the mark just given, is rocky, and there is, likewise, said to be a shoal with only 13 feet water on it.

The mouth of the River Quiabon is impeded by a bar, which affords only from $2\frac{1}{2}$ to 3 feet water; and that small depth is sometimes reduced to half a foot during dry weather, while freshes on the other hand deepen and widen the entrance. I have been told that the mouth of the river is sometimes entirely blocked up by sand banks. Formerly, vessels that drew 12 feet could go up the river as far as the Malena, at that period a well cultivated estate, for the purpose of loading wood or produce. The river is now much impeded; boats nevertheless manage to ascend the Quiabon to the small village Gato, which may be called the port of the town of Higuey. It lies on the left bank, and is, following the course of the river, five miles from the mouth.

The village of Quiabon consists merely of a number of buhios or small huts, built of wood and covered with palm leaves. It suffers from want of fresh water, though this might be easily remedied by Artesian wells. At present the inhabitants either use brackish water, or they send up the river. In June, 1852, I found already the fresh water at a distance of a little more than two miles from the mouth.

Portorico and Santo Domingo. The Master of the *Alert* considered himself on the 15th of August, 1850, at 6h. P.M., about thirty-five miles to the S.S.E. of the East end of Saona. Shortly after ten o'clock that evening, the vessel struck on the shoal which I propose should be named in future charts the "Alert Shoal."

The tides rise seldom more than 22 inches or 2 feet, hence the sea does not extend far up the river. According to my determination the weather point or Punta Barlovento, is in lat. $18^{\circ} 24' 20''$ N., and long. $68^{\circ} 54' 23''$ W.

Two miles and a half E.S.E. from Punta Barlovento, near Quiabon, lies BAYAHIBE, where recently vessels have commenced to load wood. It is considered to afford a better anchorage than Quiabon. The sea is smoother, as Saona and the projecting point of Las Palmillas protect the anchorage. The vessels lie in from 6 to 7 fathoms, distant about one mile from the shore, with sandy bottom.

GUARAGUAO and LAS PALMILLAS. S.E.†E.. nearly eight miles from the Punta Barlovento, near Quiabon, lies the anchoring place of Guaraguao; and some miles further to the East, is Point Las Palmillas, from whence to the north-western shore of Saona it is only three miles. I have already alluded to the reefs that extend from the north-western point of Saona; and which may prove dangerous to a vessel that has to proceed from Las Palmillas to a port or anchorage to the East of it. Guaraguao and Las Palmillas are seldom included in a charter-party.

LAS MINAS and BURGADO. About half a mile to the west of the anchorage at Quiabon, is the loading place of Las Minas; and somewhat further downwards, El Burgado. Las Minas is a sheltered place for small vessels; but those of larger burden must lie in 20 fathoms, and Masters frequently prefer to remain with their vessel at the anchorage of Quiabon, and to send the launch for the wood to Las Minas and Burgado.

CALETON. This loading place, to the East of Punta Aguila, offers scarcely a good anchorage. The tides sweep with great strength, and render it laborious when wind and tides are contrary, to reach the ship at anchor.

(To be continued.)

A HURRICANE IN ANTIGUA.

Reader, were you ever in a West India hurricane? If such has been your lot, I am sure you will agree with me in heartily and anxiously wishing never to behold one again; for though there is something strongly fascinating in scenes of terror, few desire to renew their acquaintance with them.

The following description of an unusually severe elemental convulsion, is derived from notes taken while on a visit, in August, a few years ago, to a friend at Dry Hill House, in the vicinity of St. John's, the capital of Antigua. It is the faint record of a calamity which will be memorable in the annals of that unfortunate island.

The members of my friend's mansion were one morning early astir, and actively employed in preparations for a marriage feast. With the

happy, careless air peculiar to their race; negro women and children were bustling among the large and luxuriant foliage, which, if it every now and then concealed them from view, could not stifle the sound of their rapid chattering, their giggling laughter, and snatches of songs, conveyed in the queer negro dialect. This irrepressible animation, reckless gaiety, and vivacious defiance of care, can hardly be imagined by the inhabitants of our northern climate. The merriment of negroes surpasses that of any other branch of the great human family.

I also had risen early on this festive occasion, being unwilling to lose any portion of the hilarity which I knew would commence with the earliest light of morning. Never shall I forget the splendour with which the day broke—a splendour to be witnessed only in the tropics. The sun slowly rose from the glass-like sea, first glancing on a few clouds which had congregated, then

“Flattering the mountain tops with sovereign eye,”

and gradually revealing the gorgeous colours of the vegetation. I gazed with rapture on the serene magnificence, and the language of the Psalmist was not unremembered: “The heavens declare the glory of God, and the firmament sheweth his handy-work.”

My ruminations at this moment were disturbed by one of the servants, (a black girl,) who brought me a cup of coffee and a cigar, the usual morning custom on a West Indian plantation. It struck me that something uncommon, nay, even ominous, was observable in the expression of her countenance, and I waited with no little curiosity to hear what she had to communicate.

“Hy, massa,” said she, “here de coffee, how do you do dis fine morning?” Then with a significant glance, she added, “Ole massa, he say, will yung massa look at ’rometer?”

“Thank you Nancy,” I replied, “it will be time enough for me to inspect the weather-glass when I have finished my coffee. How are you Nancy?”

“So, so, rader poorly, tank God, massa,” rejoined the girl, as with a sigh she left me.

“Very mysterious,” thought I, “is this message about the barometer with my morning coffee. It never occurred before during my visit here. Something strange must be in the weather, let me see if I can find it out.”

I accordingly looked carefully round at all points of the compass, but nothing extraordinary was perceptible, excepting that a dull haze crept languidly over the scene, and that the silence was awful.

In a few minutes, having finished my cigar, I went into my friend’s bedroom. Though generally an early riser, he was, on this occasion, still in bed.

“Hallo!” exclaimed I, “why are you still there? Up man up, and set to work; you have plenty to do this day.”

“Heaven grant,” responded he, “that I may not have too much to do before a few hours are past! There’s a hurricane in the air—I am sure of it.”

"Stuff and nonsense!" I rejoined. The barometer stands firmly at 30.0; it has rather gone up since yesterday."

"My dear boy," returned he emphatically, "I have been thirty years a resident in the West Indies. During that time I have witnessed eight hurricanes. The last three were foreshadowed by my own sensations. These sensations are now aggravated tenfold; a terrible day is before us."

That forebodings like those under which my friend thus suffered are unerring, I have since that time ascertained. They are produced by two causes, namely physical derangement, and observations of meteorological peculiarities. In his treatise on European colonies, Mr. Howison observes: "Persons long resident in the West Indian islands are able to foretell the approach of hurricanes with tolerable accuracy, by the observation of certain atmospherical phenomena; but this kind of knowledge proves, unfortunately, of little avail, either on shore or at sea; the violence of the tempest generally rendering impotent all precautions that may be employed against its destructive effects. On the day preceding the hurricane, the weather is always calm and sultry, and the sea breeze does not set in at the usual hour, or perhaps is not felt at all; the sky is red and hazy, and the horizon surcharged with clouds; the noise of the surf seems particularly loud and distinct, and thunder more or less distant is heard incessantly. At length the wind begins to blow in shifting gusts, and to lull again; then increase in strength and frequency, and ere long the blast comes roaring from one quarter with concentrated fury." This no doubt is generally correct, but it does not precisely describe the morning witnessed by me.

As I perceived my friend to be really in earnest, and that he was suffering greatly under his apprehensions, I gave in to his humour, and promised to note accurately the appearance of the weather, and the movements of the barometer.

This assurance seemed a little to relieve him.

"I shall leave all preparations and precautions to you," said he. "I am quite unnerved, as is always the case when these fearful tempests are breeding in the air. The tornado will be upon us within twenty-four hours."

It cannot be supposed that a young man who, for five years previously, had been knocking about in all parts of the world in small vessels, could sympathise with the climate-worn and sensitive planter. I therefore left the bedroom in excellent spirits; not only without apprehension, but actually longing for the hurricane to arrive, as excellent fun; so rash and thoughtless is youth.

Outside the house I met Betsey, the staid black housekeeper, feeding the poultry.

"Well Betsey," said I, "Massa say hurricane come to day."

Never did a few words produce such a change in the person who heard them. The woman's gabble to the cocks and hens ceased suddenly. A grave disconcerted look supplanted the good-humoured smile which had played about her thick lips. I might almost say she turned *pale*, and the measure of corn fell from her hands. It was

evident that until now she had heard nothing of her master's prognostications.

"Oh ky, ky!" sobbed she. "Massa always right." And off she ran in violent perturbation.

"The devil!" exclaimed I; "here's a pretty kettle of fish."

In a few moments the whole household was in violent commotion. Messengers were instantly dispatched to the sugar works, (about half a mile inland,) and also to the cove, where an establishment of small vessels was kept for various purposes, such as sugar droghing, collecting coral to burn into lime, &c. Meanwhile the table in the dining-room was removed, disclosing a huge trap-door leading down to a spacious cellar. Into this chasm, contrived as a place of refuge during hurricanes, the scared nigger-kind conveyed all the most portable articles of value.

By nine o'clock all needful preparations were completed, and a hurried breakfast was snatched. The barometer certainly had a downward tendency, having fallen .03, but there was no other perceptible indication of a change. A light air from E.N.E. had now set in, the usual trade-wind, but all was placid and beautiful as before. In the yard grew a magnificent tamarind tree, loaded with nearly ripe fruit. The pods hung in large and tempting clusters, and the foliage, gently agitated by the breeze, gracefully waved to and fro.

The domestic animals were evidently disturbed; their manner was hurried and uneasy. They clearly had a knowledge of impending danger.

Not being so sceptical as to disbelieve these signs, slight as they were, I kept all my senses on the alert, watching alternately the mercury in the barometer, and the signs of the weather. By eleven o'clock a more decided fall in the glass was evident; it had gone down to 29.80. To the northward the horizon had darkened considerably. The trade-wind, however, still swept gently and refreshingly over us; but at two P.M. it died away, and then the mercury fell considerably.

All doubt about the approaching tempest was now dispelled. The black inhabitants of the small cottages in the vicinity, belonging to the estate, flocked up to Dry Hill House, to seek consolation from companionship with the white people.

A light breeze soon sprang up from the north; as it rose, the mercury fell. At three o'clock a furious gale was raging. Being anxious to observe the proceedings of the shipping, I slipped out of the back part of the house, and went down towards a cliff overhanging the anchorage. To my great disgust as a sailor, I perceived amongst the twelve merchant vessels lying in the roads, that only four were making preparations to withstand the typhoon. Three were at single anchor, with a short scope of chain, and top-gallant yards across, and one brig with royal yards, and head sails loosed. Such barefaced and lubberly carelessness is almost incredible. "Old Columbus" knew better. He soon made himself master of the signs preceding a hurricane in the West Indies.

"When he was off the principal Spanish West Indian settlement,

St. Domingo, he foresaw that a hurricane would shortly arise, and sent to Ovando, the governor of the place, to request that he might be allowed to take refuge in the harbour; but this being refused, he was obliged to stand out to sea, and face the storm. 'What man, without excepting even Job, would not have died of despair,' says Columbus, 'to find that, at the crisis when the lives of myself, my son, my brother, and my friends were in danger, I was prohibited from approaching that country and those ports which, under the blessing of God, I had purchased for Spain at the expense of my blood!' At this time a fleet of twenty-four ships was about to sail for Spain, carrying large quantities of gold and pearls, partly the revenues of the king, and partly the property of those private individuals who were passengers on board. Columbus, notwithstanding Ovando's inhumanity, advised him to detain the fleet a few days, because a tornado was likely soon to occur; but his warnings were treated with contempt, and the vessels were suffered to proceed on their voyage. Before the close of the following day, twenty of their number, with fifteen hundred persons, had foundered in the hurricane. The loss of treasure on this occasion was so great as to affect the financial resources of Spain for several years after.*

As the wind still steadily increased, I considered it best to get back to the shelter of the house. To enable me to do this conveniently, it was necessary I should creep along the garden bank, which offered some protection against the gale. Not having the slightest idea that the force of the wind would be so enormous in this early stage of the hurricane, I attempted to walk past a gateway, and being instantly struck by the full power of the blast, was rolled over and driven, as by a giant's strength, violently along the ground. For a moment I gave myself up for lost, as the harbour of St. John was directly in my compelled course. Fortunately, before coming to the open water, the land declined into a bushy marsh. Here, assisted by the underwood, I clung firmly to mother earth.

After resting awhile and collecting my thoughts, I succeeded, by taking advantage of the nature of the ground, which sheltered me in some measure from the wind, in regaining the yard of Dry Hill House. The stunning roar of the blast continued, and the noble tamarind tree, writhing seemingly in agony, was grinding its huge limbs, whipping off large branches, and throwing them and the fruit violently about, as if by this oblation it hoped to appease the demon of the gale. Alas! the sacrifice appeared only to incense and provoke its rage.

I entered the mansion, and sat down to regain my breath. It now became necessary to close and barricade every door in the house, and nail the windows firmly down. A crowd of women and children were huddled together on the floor in silence. Conversation was impossible, on account of the furious noise.

My imagination had been very much excited by the dismemberment of my favourite tamarind. The idea of its apparent torture held me

* Howison's "Columbus."

in thrall. Through a crevice in one of the shutters, I painfully watched its throes. Its main branches (the growth of a hundred years) wrestled obstinately with the opposing force; their groaning was heard above the mighty wind; and soon nothing was left but a few jagged stumps on the blackened trunk.

Darkness now closed upon us. The violence of the tempest waxed stronger and stronger; the noise increased to such an overwhelming roar, that the strongest efforts of the human voice, in closest proximity, became totally useless; they were "as a whisper in the ears of death, unheard." Loud cracks now gave notice that the house began to complain. The women and children were immediately roused from their sitting position, and by signs desired to go below. This movement was speedily effected, and the ground floor was left in possession of the manager and myself. Our attention was now divided between the barometer, which fortunately hung near the trap-door, (our last retreat,) and the perilous vibration of the building. The walls appeared to bend and give before the raging blast. Suddenly a violent shock was felt, sending a thrill to our hearts. This was afterwards ascertained to be caused by the demolition of the kitchen, stables, and out-houses adjoining the dwelling, which, with all their contents, had flown away on the wings of the wind. Not a vestige was ever recovered or seen. Numerous shocks succeeded, like reports of cannon; huge stones were hurled through the air, battering and tearing away the verandah that surrounded the house.

To crown our dismay, a large spout of heavy wood, intended to convey the cane-juice from the mill to the boiling-house of a neighbouring estate, two miles to the northward, came, spear-like, through the air, penetrating the roof, piercing the table, and fixing itself into the floor close to us. The part which projected above the roof caught the gale, and acted as a powerful lever, shaking the house as if it were pasteboard. In a moment more it parted, leaving the lower portion still fixed.

At this time the barometer had fallen to 28.50. We felt, or fancied we felt, the house giving way. Taking a farewell look at our faithful monitor, we prepared to descend into the cellar. To my intense astonishment, the mercury suddenly fell a quarter of an inch. In the excitement of the moment I seized hold of the manager, roaring the information in his ear; but as before, the human voice was of no avail in such a turmoil. By dumb show I succeeded.

On a sudden we were aware of a marvellous change in the state of things.

"Great Heaven!" I ejaculated, "what can this mean?"

There was a dead calm, a profound silence, disturbed only by the low wailing sobs, and incoherent prayers of the women and children in the cellar; *we were in the vortex of the hurricane*. It is impossible to describe the horrors of this period. A door was unbarred and opened, and with a lighted candle I stepped out. The flame took its upward course steadily. All around was black, and calm, and silent.

But the stillness was of brief duration. In a short time a distant

rumbling noise was heard, when I quickly re-entered the house, drawing bolt and bar. A slight tremor shook the ground; an earthquake was added to our ills. Again came the hurricane from the opposite quarter, overwhelming our senses with its fierce impetuosity. The house, already shaken, now rocked to and fro, threatening instant destruction. We immediately descended into the cellar, fastening down the trap-door with a strong lashing. During several dreary hours we remained in suspense, stunned by the hellish disturbance overhead, while our feelings were occasionally varied by the horrible and sickening sensation of the earthquake. Some bottles were thrown down by the agitation of the ground, and the long rows of rum casks grotesquely heaved as if instinct with life, and tottered and fell in the most approved style of German demon pranks.

At 4h. A.M. there was a sensible diminution of the gale. We proceeded carefully to unfasten the trapdoor; on its falling back, *the moon was plainly visible*, throwing light on groups of dense black clouds, driving furiously across the heavens. Nothing was above us but the sky! the upper part of the house was gone!

My friend proceeded with me to a rising ground, waiting in anxious expectation for daylight; his agitation was extreme. Dawn was in the east.

"Look towards the mill," he said, "I cannot do it; it must be gone, nothing could withstand such a night. I am a ruined man!"

My eyes were strained anxiously in the direction of the mill. At length I exclaimed, "Cheer up, the work stands firm and strong! all yonder seems to be right."

The sun now appeared with all the serenity which marked its rise on the preceding day; but the scene of devastation that met our eyes baffles all power of description. Had a hot blast from hell passed over the whole island the effect could not have been more destructive. Vegetation, human habitations, animal life, all had vanished.

On our return to the house, we passed through what had been a group of lofty cocoa-nut trees, of which nothing remained but stumps, standing only a few feet from the earth: the huge tops, foliage, fruit, and remainder of the trunk were gone. A solid stone wall, two feet high, surmounted by iron railings, had surrounded the house; this, railings and all, was blown away in masses; some of two hundred-weight were afterwards found a mile off.

The previous day we were in the midst of plenty and luxury, now we were glad to banquet on a decayed ham, luckily found in the cellar.

Reports soon came in from different parts of the property. We understood that the cove-house was blown down, and that all the small vessels were driven high and dry, far above high water mark, into the jungle on Rat Island. The overseer of the works, a black, reported all destroyed except the boiling house, which, however, had sustained serious injury. Its steam engine chimney was blown down, and the earthquake had made a rent in its wall.

"Is any one killed?" I asked.

"Yes, massa," returned the overseer, "three nigger missing."

"But is any one killed?" I repeated.

"Oh no, massa, nobody kill," replied the overseer, "only big rock 'tone mash up poor Peggy head."

"You don't mean to say she's dead?" persisted I.

"Um head mash quite up, massa," responded the negro, "big rock 'tone come tro de air, tro de roof, hit um so," added he, with a queer gesticulation, "kill um dead."

I ascertained afterwards that the poor woman had been killed in the manner described.

The natural anxiety of a sailor again led me down to view the shipping. Never did I behold such a scene of wreck! Two of the largest craft had foundered with all hands; the lower mastheads still sticking above the water. The small vessels, as already stated, I found a long way above high water mark. Three had ridden out the storm, and amongst them, to my surprise, the brig. There she lay, still at single anchor, the main royal yard still crossed, but the fore-topmast head twisted off, and all the upper gear gone. Who can account for this?

The poor steamer to which I was attached, in English Harbour, had fared very badly. In the first part of the gale she had dragged the huge moorings, and gone broadside on to the wharf. On the gale shifting, not being able to snap the numerous fastenings by which she was secured to the buried guns, she had torn down the whole length of the wharf, whereto she was attached, and dragged huge masses of débris into the harbour. Several ponderous stone buildings in the dockyard were blown down, and a Dutch corvette, strongly secured in English Harbour, was driven up into six feet water, her usual draft being seventeen feet.

It may, perhaps, be consoling to our lady readers to be informed that the wedding, to which allusion is made at the commencement of this narrative, took place a few days after, as soon as the roads could be cleared of the numerous and heavy masses of wreck, blown on them by this fearful hurricane.

It is believed that the happy couple are still "a happy couple," with numerous children, living in affluence, at St. John's, Antigua.

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from page 196.)

The continued rain had rendered the streets almost impassable on foot; but with the help of a chair I contrived to take a survey of the city of Shanghai.

The earliest account of this place in our language is, I believe, that of old Purchas, who, in his quaint style, says,

“One of those meaner cities called *Hien*, is Scianhai in the province of Nanquin, within four and twentie houres sail of Japon, and therefore defended with a garrison and a navie: it hath about 4000 households, and the jurisdiction adjoining seemes a continuous citie, with gardens intermixed. * * * * There is great store of rice and cotton. * * * * The air wholesome, and they live ordinarily to a great age, some to fourscore, fourscore and ten, and many to an hundred yeares.”

Without disputing the correctness of the Jesuit's description, here quoted by Purchas, it seems difficult to credit the latter part of this statement, or to understand how a good old age could by any possibility be attained, if the streets of “Scianhai” and habits of the people were as filthy 250 years ago as they are now. I had looked upon the suburbs of Amoy as being almost the ne plus ultra of filthiness, but they are clean compared with some of the thoroughfares of Shanghae, which set at nought all our ideas of ordinary decency.

The streets of this place, also, appear more crooked and narrower than those of other Chinese towns I have visited, and the shops are meaner; in either respect very inferior to Foo-chou-foo. Notwithstanding, however, the almost total absence of display here, there can be little doubt which city is the wealthiest, this being the emporium for the produce of the silk and cotton districts, and Soo-cbou-foo, the China-man's paradise on earth, being only seventy miles distant. In one quarter of the city I observed whole streets of large “godowns” or warehouses for the reception of cotton, of which vast quantities are exported. The number of junks here, employed in the conveyance of this and other produce, is extraordinary; they lie moored in tiers, head and stern, from one end of the town to the other; nothing can be more orderly than their arrangement, affording a marked contrast to the way our merchantmen are scattered about, blocking up the passage in the reach, and rendering it no easy matter to move without fouling something.* This, by the way, is the commencement of the shipping season, and English vessels drop in every day; one, a beautiful little barque called the *Sea Witch*, (Reynell,) was only ninety-five days on her passage from Gravesend.

The temples and tea-gardens of Shanghae have often been described, both with pen and pencil; they look well enough on paper, minus the filth and rubbish, the collection of ages, and luxuriant duck-weed which flourishes in the pools of stagnant water, by which the buildings are surrounded.

There is a large Roman Catholic Cathedral in course of construction; it promises to be very handsome, but the expense of its foundation has been enormous.

The Protestant Missionaries, both English and American muster strong, and several chapels have been built for their congregations; one, rather a showy building, with a bell tower, painted red in imita-

* This evil has, we hope, been removed, as a Harbour-master has been appointed since this was noticed.—Ed.

tion of English brick work, looks queer enough in the midst of Chinese houses.

Provisions are plentiful and cheap, but potatoes are scarce; there is an English baker, who supplied the ship with soft bread at four dollars per picul, of 125lbs. The beef was contracted for at six cents and vegetables one cent per pound. The price of mutton is 11lbs. for a dollar; lamb and veal 12lbs, ditto; kids a dollar each; Chinese pork and bacon 120 cash per catty; Chinese ham 300 ditto ditto. The value of the dollar being from 1350 to 1400 cash.

I obtained about eight tons of wood, in bundles of 60lbs. weight, at 15 cents a bundle, equal to £1. 6s. 1d. per ton, which, at our rate of consumption under full steam, is equivalent to burning coal at £2 12s. a ton, more than double the price of fuel in the river Min.

I bade adieu to Shanghae on Wednesday morning, July 3rd, and was extremely glad to get away from the most disagreeable climate that I have experienced for a long time; clouds of mosquitoes, with the united heat and damp, combined to render my little cabin scarcely habitable. This rainy season sometimes lasts for weeks together, and only two years ago a desolating famine in this province was the result; thousands of miserable beings were driven into Shanghae for food and shelter from the floods which covered the whole country, and hundreds died in the streets from absolute starvation, while many were spared a similar cruel fate by the charity of the foreign merchants, whose philanthropy and benevolence were neither acknowledged nor appreciated by the ungrateful survivors.

We cleared the Woosung river without any mishap, a subject of congratulation, for between junks anchored in mid-channel and shoals without a buoy to mark their position, some "contretemps" is scarcely to be avoided.

The weather began to improve with every mile we proceeded, and there was a clear sky overhead before we got many miles down the river; astern lay the thick mist from which we had emerged, hanging over the land like a pall, dull, heavy, and impenetrable.

I anticipated we should have had to anchor when the tide finished, but a breeze sprung up from N.E., and although the flood tide, on the weather bow, set us down upon Gutzlaff Island, it was not much out of the way. We passed between Pienchou and Chinsan, and shaped a course to clear the dangerous rocks outside the Fisherman's Group. The night was very dark, the wind from E.N.E., dead in our teeth, blowing in gusts, which rendered our progress necessarily slow, and, after some anxious hours, I was truly thankful, at 2h. A.M., to get the screw up, and stand to the southward under all the sail we could set to the fine breeze, which had now become a fair one.

July, 5th.—The Taichou group was in sight to day. We here lost the wind, which, however, sprang up again in the evening from E.S.E. We were off Wanchou Bay on the 6th, close to the entrance of the river I ascended in February, and tacked before dark off the Seven Stars, the remarkable mushroom rock belonging to the Tae group in sight. From hence the passage became tedious, and for three days we could do

little against the strong current which swept us away under Formosa.

July 11th.—The Island of Turnabout, which was found so difficult to get round in the N.E. monsoon, appears to be as great an obstacle in this one. After attempting in vain to get to windward of it, and losing a kedge, which was dropped yesterday afternoon off Haitan to wait for the tide, I was compelled, reluctantly, to get the steam up this morning, and before sunset we were far enough to the southward of Ocseu to warrant the screw being lifted again; there was a nice breeze which promised to take us as far as Pyramid Point, but it failed after dark, and at 9h. P.M., the best bower was let go in thirteen fathoms. At 3h. A.M., got underway again with a breeze from the southward, but, after working up the whole day, had to anchor again at 4h. 30m. P.M., in fifteen fathoms, very little farther to windward, Pyramid Point west, Ocseu N.E.b.N. At 9h. P.M. made an attempt to get away with a light air from S.E., a waste of labour, for the wind died away before the studding sails were set.

13th.—At 2h. A.M. started once more with a fine breeze from S.E. which enabled us to lay a course along the land; passed, almost nearer than was pleasant, close to our old haunts, Chimmo, Scrag Point, How-e-tou, Dodd Island, and in sight of Taetan, and cleared Chapel Island before dark, a glorious run! The next morning we were off Dansburg Island and the Nob Rock, but drifted slowly down with the declining breeze towards the Brothers, the bluff point of Tongsang (the old Thunder Head of Horsburg) and neighbouring land in sight. I had here an illustration of the danger attending this navigation: the night was clear but the horizon misty as usual, the wind forced me to steer for the passage inside the Lamock Group; at 3h. A.M., I was informed they were in sight, and it was some time before I discovered that the Islands reported were the Brothers, which we had cleared before dark, but which a strong tide had set us down upon; had it been thick weather we might have been in a scrape, for the soundings were not of the slightest assistance in denoting the ship's position.

This is not the first time that I have experienced the difficulty of navigating clear of these Islands, and it appears to me that a light on the outer Lamock is almost as necessary at this end of the Formosa Channel, as one on Ocseu for the security of the other; would that those most interested could be induced to stir in this matter: the expense would be comparatively trifling. In the *Nautical Magazine* for 1846, p. 172, there is a proposal by Mr. Alexander Gordon, C.E., to deliver at the site of the Horsburg Lighthouse, now building* in the Straits of Singapore, a wrought iron tower, a hundred feet high, eighteen feet in diameter at the base, and ten at the top, to be previously fixed and tried in England, for £3,000. Two such lighthouses, with the expense of erecting them, and including the increased

* Since the above was written the Horsburg Lighthouse has been completed, to the great benefit of the commerce of the whole world. It is constructed of stone, at a cost of £5,400, and an account of it appeared in the vol. of the *Nautical* for 1852, p. 69. We hope this remark of Captain Cracroft will not be lost sight of. ED.

freight for the additional distance, would not exceed nine or ten thousand pounds, a sum small indeed compared with the loss of one out of the many valuable ships that now have to run the gauntlet of these dangers. Before leaving this subject, I should strongly recommend all vessels in this neighbourhood to anchor before dark, in light winds, and in a fog to keep hands by the anchors, as well as in the chains.

It fell dead calm on Monday afternoon, and the anchor was let go in fifteen fathoms, sand, about a mile W.b.N. of the north Lamock. Here I remained until noon the next day; when, seeing no prospect of a breeze, I started under steam, and anchored in Hong Kong harbour on the evening of the 17th. Found here H.M. Ships *Amazon* and *Serpent*, the U.S. corvette *Plymouth*, and Dutch frigate *Rhin*. The *Amazon* was anchored off Stonecutters Island, with a large sick-list; and *Serpent*, with two-thirds of her ship's company on board the hospital-ship, down with fever and dysentery, was off Green Island, for the benefit of the remainder of her crew, the situation being more exposed to the breeze.

Commenced clearing out, which was much wanted; for this purpose Captain Troubridge permitted me to use the *Minden* as a hulk, and the ship's company went on board her; without this it would have been impossible to have so effectually purified the lower regions; and I am sure the change from this "misery" to the *Minden's* roomy decks in the dreadful hot weather that now prevails is most beneficial to all hands. I took up my quarters, as Captain Troubridge's guest, on board the *Amazon*, and went to Macao in her for a few days.

Macao is worth seeing on many accounts, although fallen from the position it once held. Its churches and public buildings are numerous and handsome, its streets well paved and cleanly, and the Praya Grande, a crescent of goodly, well constructed houses, facing the sea, to be coveted as a place of residence in this monsoon. Its trade has much declined since our merchants removed their business to Hong Kong, and the finishing blow was given by the late Governor Amaral, who in turning out the Hoppo, or head Chinese Custom-house official, put a stop to the most lucrative portion of the junk trade. Formerly numbers of junks arrived annually with cargoes from Singapore and the Straits, for transhipment to other ports on the coast and on the rivers in the interior, now they are obliged to go elsewhere to get the necessary "chop," or permission to unload. Amoy, I was told, was reaping much benefit from this change, and unless the Hoppo be re-established Macao may never recover the commerce thus injudiciously driven away.

In common with all Portuguese colonies and possessions, the church has the lion's share of the good things here, and the "lady in scarlet" revels in her abominations. The people, if a few miserable half castes from Goa and other places can be dignified with the appellation, are priest-ridden and superstitious; no heretical place of worship is permitted to pollute by its presence the abode of the faithful; and it seems almost incredible that, although the English for so many years ruled paramount here, as regards wealth and intelligence, and that Macao

might be considered in the light of a suburban villa residence attached to the factory at Canton, no Protestant church or chapel has ever been erected, nor, to my knowledge, has any provision been made for the spiritual requirements of our countrymen in this remote region. There is, however, a very pretty spot consecrated as a cemetery, in which many gallant heroes, belonging to our noble service, are "taking their rest," among them Sir Humphrey Senhouse and Lord John Churchill. This burial ground adjoins the gardens of Senhor Marques, which are liberally thrown open to the public by the proprietor; here is shown the cave sacred to the memory of the great Lusitanian poet Camoens, a pretty spot, embosomed in the shade of some magnificent lychee trees;—"here, in cool grot," the bard passed much of his time, and on a tablet erected to his memory two verses of his immortal poem, the *Lusiad*, are inscribed.

In its military position, Macao resembles Gibraltar; a narrow sandy isthmus, about two miles in length, connects it with the mainland (or what may be considered the main); in the centre of this "neutral ground," stood the barrier, a stout stone wall, extending across the strip; the arch thrown over the road is all that now remains of this Chinese post, the rest is a heap of ruins. The spot where poor Amaral was assassinated is about two hundred yards on the Macao side of this barrier. Since his death the Portuguese have claimed that portion of the "neutral ground" as part of their territory, have constructed forts to command it, and the arms of Portugal are deeply engraved on a large stone forming part of the boundary of the building where formerly the Mandarin, nominally master of Macao, had his official residence.

The garrison is very small, consisting of about five hundred, every one included, a large proportion being officers. Many of the men are military delinquents, answering to the description of those unhappy beings who composed our African corps at Sierra Leone, in former days; with few exceptions they seem a wretched lot. There was a ghost of a military band which played for a few minutes at morning parade in front of the windows of the hotel at which I was staying (the Albion) on the Praya Grande.

The harbour of Macao is reported to be fast filling up, and is little used except by junks and lorchas; two men-of-war brigs were, however, in it, apparently unseaworthy.

The Typa, a snug anchorage, is the rendezvous for vessels drawing more than 12 feet, but ships must lighten to 15 feet to get in, even at springs. The *Donna Maria*, frigate, and U.S. corvette *Marion* were moored there, and the place is seldom left without an American man-of-war, this being now the head quarters of their navy, the "Mahon" of the east.

The holding ground in the outer roads is good, but a ship might as well and better be at sea as in the outer roads of Macao; in blowing weather a heavy ground swell sets in, and all communication with the shore is cut off.

The *Amazon* was at anchor here, full six miles out; she sailed on

the 27th for Manila, and I returned to Hong Kong in the *Canton*, a fine iron steamer of 160 horse power, belonging to the Peninsular and Oriental Company; the distance is forty-two miles, which she did in a minute or two over four hours.

I must not forget to mention a visit I paid to the studio of Chinnery, the artist, whose reputation is famous throughout the East, indeed it may be said to be still almost European, although so many years have elapsed since he left his native land. Mr. C. cannot now be far short of eighty years of age: he left England for Madras in 1801, and has been settled at Macao since the year 1825.*

(To be continued.)

PASSAGE OF H.M. STEAM SLOOP "VIRAGO," *Comm. W. Houston Stewart, through the Strait of Magellan, Smyth, and Sarmiento Channels.—By Mr. G. H. Inskip, Acting Master, 1851.*

The following remarks on the Passage of H.M.St.S. *Virago*, from the Atlantic to the Pacific Ocean, is given without reference to any other circumstances than such as are almost immediately connected with the pilotage of the various straits and channels passed through; and such as they are, it is hoped that some assistance will be afforded by them to the navigator, who, for the first time, is attempting this intricate but convenient route to or from the Pacific.

The *Virago* left Rio de Janeiro on the 17th November, 1851, for Valparaiso. On the 3rd December, at daylight, Cape Virgins was seen, bearing S.W.b.W., and about four miles and a half distant. The ship was then kept away S.E.b.E.½E., until it bore W.½N. eleven miles: this was done to avoid the Sarmiento bank. At this position Mount Dinero shows a little clear of the land to the westward of Cape Virgins.

Standing in on a S.W.b.S. course, Cape Virgins was brought to bear N.W.½N., when we kept away W.½S., in order to reach up to Possession Bay. This course took us about three miles and a half from the low shingle point of Dungeness, and clear of Wallis shoal, which was passed, when Cape Possession (a dark cliff, forming the eastern side of Possession Bay) bore W.N.W. Mount Aymond, on first sight, had the appearance of a small hummock. The Direction Hills, and Asses' Ears, were easily made out; and Orange Peak, on

* Mr. Chinnery is lately dead. The *China Mail* for 22nd June, 1852, has the following record of him:—

"Our obituary records the death of George Chinnery, a man who for upwards of half a century has held a distinguished place among the notables of the East, not less on account of his great conversational powers than of his accomplishments as an artist. Chinnery was born in 1774; arrived at Madras in 1802; in China in 1825; and died, May 30th, 1852, at Macao."

the southern shore, at the entrance of the Narrows, could plainly be distinguished.

Steaming across Possession Bay, S.W.b.W.½W., for the Northern Direction Hill, took us to the northward of the Orange Bank. When Mount Aymond bore N.W.½W., and the entrance to the First Narrow came fairly open. From this, a S.S.W. course took us through it. The Orange and Narrow Banks both showed themselves by the colour of the water. Whilst passing rapidly between these, bearings of Cape Possession, Direction Hills, and Cape Orange, gave us our place very satisfactorily.

When through the Narrows, Triton Bank will be found to lie in the direct track; and having only from 2 to 3 fathoms on it, is not to be approached too nearly. There is a channel on either side of it. We chose the Southern, being the wider. Some slight difficulty was experienced in making out Gap Peak, in the range behind St. Philip's Bay, there being another remarkable gap in the same range; but this would not agree with the bearings taken of other points, placing the ship too far to the eastward. Our position was determined by bearings of Gap Peak and Point Baxa.

Cape Gregory and Point St. Isidro, at the entrance of the Second Narrow, are both low. Cape Gregory, showing more in hummocks, and having Gregory range behind it. The wind had been from the westward all day, and when we were about to enter the Second Narrow, it came to a strong breeze. Finding it improbable that we could reach the Royal Road before dark, we steamed into St. Philip's Bay, and took up a berth under Point St. Isidro, which bore W.b.N. one mile and a quarter. The bank on which we anchored was very steep, having 17, 10, and 5 fathoms, as fast as the lead could be hove, although going but very slowly in. The anchor was let go in 10 fathoms; and, when 60 fathoms cable was veered, we had 16½ fathoms alongside. This position is perfectly sheltered from southerly and westerly winds, and is an excellent place for a vessel to wait, when detained from going through the Narrows. In the event, however, of a sailing ship anchoring here, she should not approach Cape St. Isidro nearer than one and a half miles, on account of a ledge of rocks which lie off it; so that should the wind come from the eastward, she would have room to weather the ledge, especially as the tide sets strong towards the point.

The following morning we departed, and neared Cape Gregory until the eastern end of Elizabeth Isle (Point Silvester) came in sight clear of the southern side the Narrows. We then steamed directly for it, (S.W.½S.,) this kept us to the southward of a small shoal lying on the northern side, halfway between Cape Gregory and Point Garcia. The southern side is clear; but after passing Cape St. Vincent, no vessel should go to the southward of a line drawn from it to Point Sylvester, on account of the shoals and ripples round Sta. Maria and Quarter Master Islands. We closed Silvester Point to within a quarter of a mile, and kept along the southern side of Elizabeth Isle, at a distance of half to one-third of a mile. Wallis shoal, which extends to the westward of

Sta. Magdalena Isle, was easily made out, by the smoothness of the water upon it. Soon after passing Elizabeth Isle, the weather began to change, by thick rain coming on, which prevented our seeing the land at any distance from the ship. When abreast of Sandy Point, (Punta Arena,) off which there is an extensive shoal, we observed two vessels at anchor, and a few buildings on the shore, having a Chilian flag flying. The threatening appearance of the day induced us to steam into this place, where we took up an anchorage in 12 fathoms, mud, the extremity of Sandy Point bearing N.½E. two miles, the settlement being a mile distant. The Commander, three officers, and myself went on shore to see if any wood fit for the furnaces could be procured. We were met on the shore by an officer dressed in handsome uniform, and who came galloping down the beach towards us. This ruffian, as he proved to be, was Cambiaso, the second in command, whom we afterwards had the satisfaction of capturing, and who was subsequently shot at Valparaiso for his enormities. He apologized for the absence of the Governor, who he said was ill (but in reality already murdered by him). He led the way up to the square, which was slightly pallisaded in, excepting on the eastern side, where a kind of platform was raised with timber and earth. The whole place presented a most filthy appearance. The soldiers and their wives were huddled together under a few sheds. They were, however, well supplied with provisions, and especially beef, for they helped themselves from a whole bullock hanging up close to their abode. A large quantity of stores was out in the rain, there being no room to put it under cover.

We were given two paddle-box boats of wood for fuel, as much plank as we chose to take, two bullocks, and several gallons of milk. Hearing from the Officer that there were about 300 tons of coal at Port Famine, we gave a receipt for 70 tons, and on the next day started for that place. The settlement at Sandy Point was a penal colony, situated on a low and level piece of land, some miles in extent, well watered by streams which took their source from the hills behind; it is nicely wooded in several places, a large number of acres are cleared for cultivation, and most English vegetables appear to thrive very well.

In the run to Port Famine we kept about a mile from the coast, the only danger in the way being a ledge, stretching out from Rocky Point. The buildings at Port Famine are a mark for knowing Point Sta. Anna, which we rounded at a distance of about two cables' length, and hauled in for the head of the bay towards Mount Philip. The coalshed was close down to the water's edge, and commodiously situated for loading the boats. The ship was anchored in 8½ fathoms, mud and clay, near the shed. Some very delicious fish, (rock cod,) were caught alongside; duck and other wild fowl were shot on the Sedger River, and the sein was hauled with considerable success. The drift wood, of which large quantities was lying on the beach, was found to be so saturated with salt water, that it was entirely useless for any purpose.

The bay is sheltered from South, round by West, to N.E. We laid at single anchor; but it would be right to moor if any stay is made, since the squalls often come down from the mountains to the N.W., with terrific violence.

On the 9th, having taken on board the 70 tons of coal, we got underway; the weather was tolerably fine at starting, but off Cape Froward it came on to blow, through the reach, from W.N.W., with considerable force; the hail and rain almost blinding every one, and hiding the land from view. Finding the vessel scarcely holding her own, and St. Nicolas Bay being close under the lee, it was determined to run in there for shelter. We anchored in 10 fathoms (no vessel should anchor in less) half a mile from a small islet in the middle of the bay. It is a safe and convenient place, and presents no danger on entering it. Its eastern extreme is formed by Nassau Isle, and its western by Point Glasscott, which slopes gradually down from Nodale Peak. The timber here is small, but fit for fire-wood or inferior spars; it could be cut with little difficulty, and easily brought on board.

On the 11th the wind moderated, and shifted to S.W. An hour after daylight we had rounded Cape Froward. Westward of this the land is high and bold, trending to the N.W. As soon as we had passed Cape Froward, Cape Holland was seen. It forms the western side of Woods Bay, where there is an anchorage.

As we ran by this place, we observed the wreck of a vessel lying on the rocks. On nearing Port Gallant, we saw a Chilian barque at anchor: her boat met us in the strait; we had a letter for her from the people at Sandy Point. The crew of the wrecked vessel had taken refuge on board her.

This anchorage (Port Gallant) is very good, and has a moderate depth of water; free from danger on entering, and well protected from the prevailing winds. Having supplied the barque with a few necessaries, we proceeded onwards. From Port Gallant, where English Reach commences, the strait is contracted by several islands, but no danger exists, excepting a spit off Passage Point, about eight miles to the west of Port Gallant. The tides in this locality run very strong, and off the western end of Carlos III. Island, where Crooked and English Reaches and Jerome Channel all unite, the current gains great strength, and sets in various directions.

The land about Jerome Point is high, its summit being formed of several peaks. Crooked Reach, which commences here, is said to have a dangerous rock lying in it. Capt. King, in his excellent Directions, speaks of a rock, not a league to the eastward of Cape Quod, with only 9 feet on it, but covered with weeds. He remarks, that it is a good distance from the north shore, and is in the fair way working to the westward round the cape. The Master of H.M.S. *Gorgon*, had only 5 feet on a rock (probably the same) marked by kelp, and recommends keeping on the southern shore, and that in going to the eastward, when Borja Bay opens, you may be sure of having passed it. H.M.F. *Fisgard*, beat through this reach in 1843, making an

extraordinary number of short tacks, the wind being direct foul, and blowing violently; but although the utmost vigilance was used, no indication either of a rock or kelp was observed.

Borja Bay is a snug anchorage, Ortiz Island, which has a large wooden cross on it, is a good mark for knowing this place. El Morion is a bold bare rock on the south side the reach; and Cape Quod is a rugged black headland on the north. Cape Notch (eleven and a half miles to the westward of Cape Quod) was at once distinguished: it is a high projecting headland, with a very remarkable notch in it.

There are a number of creeks and small inlets in this reach, some of them affording anchorage. Swallow Bay, a little to the westward of Snowy Sound, is said to be the best, until you come to Playa Parda. The violence of the "williwaws," however, in this apparently safe anchorage, (Swallow Bay,) will often try the strength of a chain cable. H.M.S. *Fisgard*, although moored, parted her best bower during one of these fearful squalls; and every attempt to recover the anchor proved fruitless, from the uneven and rocky nature of the bottom.

Shelter Island is a conspicuous object, and points out Playa Parda. We were abreast of this place early in the afternoon, but the weather being thick and unpropitious, it was deemed prudent to put in here. From the plan and description given in the "Directory," we considered the inner cove to be the more secure. After steaming into it, there scarcely appeared to be room for so long a vessel; she was, therefore, turned, and brought outside, where we anchored in 5½ fathoms. Middle point bearing North, about two cables distant.

On the following day, the 12th, although blowing hard in the squalls, we departed in the afternoon, with the hope of reaching Half Port Bay. After steaming for three hours, and making but ten miles, in consequence of the increasing violence of the wind, and Half Port Bay not appearing, from what we could see of it, as a likely place to afford much security in a northerly wind, we ran back and anchored in Playa Parda, well up by the western shore, the S.B. in 7 fathoms, outside the kelp off the western point, and the B.B. in 5½ fathoms, in towards middle point, with open hawse to the westward. Turtle Rock bearing S.66°W., S.E. extreme of Shelter Island S.38°W., and the eastern side of the inner cove N.17°W. The squalls during the night were exceedingly heavy. Bar. down to 29.25. The ship, however, laid perfectly quiet. Whilst here, the Commander and myself went into the inner cove. It is about a quarter of a mile across, and completely land locked: there is ample room for a vessel to swing, by taking up her moorings in the centre, at a depth of 5 or 6 fathoms. Fresh water can be procured in abundance from a large cascade, which runs down from an immense lagoon or lake situated some 300 feet above the level of the sea. Plenty of rock cod were caught alongside, varying from eight to twelve inches in length.

On the 13th, at 6 P.M., the wind having moderated, and the sea gone down, and being desirous of reaching a more favourable position for clearing the strait, we again started, with the intention of proceeding to the Harbour of Mercy, distant about seventy miles. The

evening was very fine, the stars shining brilliantly. A fair wind also springing up, we made sail. By 9 P.M. we had passed Cape Upright, a bold headland, with a rock (not unlike a ship under canvas) lying about a quarter mile off it. As soon as we began to widen the channel, by our approach to Cape Tamar, the effect of a westerly swell was very apparent, by its considerably retarding our progress: at this time also the wind shifted to N.W., and the bar. indicated bad weather. At midnight the squalls became very heavy; much rain and hail occasionally fell. At daylight Cape Pillar and Westminster Hall were seen: the bearings of the land, however, showed too plainly that we were making but little headway. With all these combined disadvantages to contend against, and having no anchorage on which we could depend along the Fuegian shore, they being too much exposed to the heavy sea then running, we determined on once more going back to Playa Parda. By noon we were snugly moored, having experienced a most wearisome and anxious night.

On the following day, the 15th, the barometer indicated a change, and the wind became more moderate. We now made our third attempt to clear the Strait of Magellan. At noon we had reached as far as Cape Tamar; but at this moment a sudden and rapid alteration of the weather, with a falling barometer, we were induced to abandon the original intention of going out to the westward, by steering for Smyth Channel. We kept to the westward of the Fairway Islands at its entrance, and then onwards, to the eastward of Green Islet; close round the east end of Renouard Island; thence to the westward of Shoal Island, and another a little to the north of it; close round the eastern end of an Island (about two miles from Renouard Island) which lies mid channel, but no name marked on the chart. We then steered between this nameless Island and several small rocky islets to the northward; in towards Cape Colworth, opposite to which is a large opening called Clapperton Inlet. From this the channel is clear as far up as the Otter Islands. We passed to the eastward of these, as also of Summer Island, keeping between it and Long Island. There is a dangerous spit running off the northern extreme of the latter.

The channel from Fortune Bay runs due north for nearly five miles. About two miles north of Long Island, and off Point Palmer, lies a small and well wooded island. The channel here takes a N.W. direction. The wind now began to freshen, drawing right through this part of the channel, which is narrow, and surrounded on each side by high land; Rennel Island forming the western, and Zach's Peninsula the eastern side. Isthmus Bay on the starboard, and Welcome Bay on the port side, are both excellent harbours. On our subsequent voyage from Port Famine, with the recaptured schooner *Eliza Cornish*, and the Chilian mutineer Cambiaso, we anchored in Isthmus Bay, and found it to be a most convenient place.

Having an hour's daylight yet remaining, we pushed on for Island Bay, a little to the northward of Victory Passage. We took up our berth on the southern side the islets, and moored; one anchor being in 19 fathoms, mud and shells: and the other in 17 fathoms: 65 fathoms

on each cable. The islets afforded good shelter, and the vessel rode it out very quietly. A small ledge of rocks on the southern side rendered the anchorage rather confined, as we could not get bottom with 30 fathoms, until close in. The S.W. islet bore West a quarter of a mile. The squalls from N.W. during the night were very heavy and frequent.

This boisterous weather continuing, and the "Directory" stating that with the wind at N.W. there is much sea at the northern end of Smyth Channel, instead of taking that route we proceeded to the eastward, through Victory Pass, (which is not usual,) going between Brinckley Island and Bessel Point, at a mile from which there is a rock above water, one third the distance across. We passed between it and Bessel Point at half a mile from Brinckley Island. Four miles to the northward of this island, is Point Maskelyne, at the southern point of Newton Island, which is about nine and a half miles in length, and of considerable height. We coasted along its eastern side at a distance of half a mile; rounding Cape Homsted at a short distance, and thence steamed across to the westward, for Point St. Bartolome, at the southern end of Sarmiento Channel, which is a fine clear passage of nearly 60 miles in length, varying from one to three miles in width. About 18 miles from St. Bartolome, is the western end of Lord Nelson Strait; 30 miles further north, is Puerto Bueno, and wherein we anchored at 5 P.M., 9 fathoms, mud and shells. The centres of the small islands bearing respectively W.S.W., W.N.W., North, and E. $\frac{1}{4}$ N. The entrance to this most excellent harbour is perfectly clear between the mainland and the southern islet, which is small, and covered with wood. There is an inner harbour entirely land locked, but the outer is quite safe. We sent a party on shore to cut wood for the fires; a large quantity was soon procured, it being of a convenient size, and easy of conveyance off to the ship.

The following morning (the 17th) we proceeded for the Guia Narrows, passing to the westward of Bonduca Island, and to the eastward of Canales, which is situated at the juncture of Estevan and Sarmiento Channels. We kept Chatham Island (high and bold) on the starboard hand until the Guia Narrows came open. These are about 300 yards wide, with deep water. We steamed right through, going close to the point of Hanover Island, which lies opposite to Chatham Island.

After quitting the Narrows, we shaped a course to the southward of Innocent Island, then about 15 miles distant. When we had run about seven miles, some rocks were seen right ahead. At first it was thought that they were those off the N.W. end of Hanover Island; but as these latter could also be seen, at moments when the weather cleared, the doubt was settled. This newly discovered cluster bore S.W. $\frac{1}{4}$ W. two miles from Innocent Island.

Thick rain and mist occasionally hiding the land, we were obliged to follow the coast on the western side of Conception Strait, as far as the S.E. point of Duke of York Island. An extensive reef stretches

to the S.W. of this point, and which compelled us to go much more to the southward than we had anticipated.

Roca Partida, on the eastern side of this strait, has the form of a sugar-loaf, rising abruptly from the sea, and is a conspicuous object. Just as we had passed the reef off the S.E. point of Duke of York Island, a rock, above water, with heavy breakers all about it, was observed to the westward. It bears nearly S.E. four or five miles from Cape Santiago, the S.W. extreme of that island. Neither the rocks off Innocent Island, the reef, nor rock off Duke of York Island, are placed on the charts, or mentioned in the "Directory."

The positions assigned to these three dangers, are given only as approximations; the hazy state of the weather allowing but a small portion of the land to be visible at a time, and that little but indistinctly. It is right, however, that their existence should be noticed; since a vessel, if clearing either of the channels, &c., wherein they are situated, especially towards evening, or in thick weather, would find them unwelcome strangers; and even if the night were clear, they would not be seen at any distance, from being little above water.

Having at last succeeded in reaching the Pacific, we stood out to 81° W., and, after a good run, arrived in Valparaiso on the morning of 24th of December.

NOTE.—In our subsequent voyage to the Strait of Magellan, in search of Cambiaso and his accomplices, who were in the schooner *Eliza Cornish*, we discovered a rock lying mid channel in the entrance to the harbour of Mercy. A ship going there, should keep rather towards Misericordia Point than near Mercy Head. This rock is not on the chart.

CHINESE EXTRACTS.

[The following, on the Climate of Shanghai and on Chinese Pirates, we find in the "Shanghai Almanac." The intelligence in these papers will prove both useful and interesting to our readers.]

THE CLIMATE OF SHANGHAE.

We shall simply premise that the latitude of Shanghai is $31^{\circ} 15'$ N., and the longitude $121^{\circ} 29'$ E., and taking for granted that the fertility of the district is wonderful, as evidenced by the double crop of the cerealia annually obtained, we shall at once proceed to examine the subject of the salubrity of the climate, which we are aware is not so likely to be granted.

Nevertheless we claim for this climate a strictly salubrious character, and believe that few will object to our doing so for at least eight months of the year. During that period, from October to June, the thermometer seldom rises above 75° , and after the winter has fairly

set in the weather is, for the most part, dry and bracing, until the changeable days of spring once more bring back heat and moisture.

During this period cases of catarrh are exceedingly common, and many people become subject to rheumatic pains; the former liability does certainly not amount to a peculiarity of climate, as it is highly probable that from the construction of our houses and other concomitant circumstances, little care is taken to guard against the exciting causes; whether there is not some peculiarity in the climate rendering persons peculiarly liable to attacks of rheumatism, seems to admit of doubt, and the experience of the past year will not entitle us to be so positive on this subject as we were in our last report; in fact, we frankly admit that our present impression leads us to conclusions diametrically opposed to those stated by us on a former occasion.

In the spring, and as summer advances, Europeans become liable to attacks of intermittent fever, and this, if not promptly treated, is apt to become intractable, and in some years has shown a tendency to pass into the typhoid or bilious remittent.

During the summer, undue exposure to the sun, over fatigue, or inattention to the fundamental dietetical rules, will be followed, in many cases, by remittent fever, commonly of the bilious type, but generally terminating, when fatal, as cases of typhus. Such cases are, therefore, peculiarly common on shipboard, where men are necessarily much exposed to the direct rays of the sun; and where, during their short period of liberty, they are so apt to partake of the most pernicious description of intoxicating drinks.

We cannot, therefore, be too earnest in our entreaties to those to whom so many valuable lives are entrusted, and who have not experienced the peculiarly baneful effects of such direct exposure or excess, in cautioning them as to the dangers to which they may unwittingly be exposing their subordinates.

But the residents on shore have not been wholly exempt from attacks of this disease, which has been most prevalent in the years succeeding to those of the taifoong and heavy rains. It is indeed the most dangerous climate disease to which they are exposed. The past season, however, has been remarkably free from attacks of this disease, and, as far as we are aware, no fatal cases have occurred; indeed, in our practice we have not been called upon to see a single serious case, while in former years they were of daily occurrence. This must in a great measure be attributed to the uncommonly moderate fall of rain; which, since the 1st of January to the present date, only amounts to 27·16 inches, being less by 7·39 inches than during any twelve months recorded in the Table No. 1, and less by 21·477 inches than the average of the four previous years.

Another disease peculiarly common among Europeans during the hot weather is chronic diarrhœa, which may from neglect or other causes pass into dysentery. This is an exceedingly dangerous and troublesome complaint on board ship, from the difficulty of carrying out hygienic regulations, and often paves the way for more rapidly fatal maladies. Among the residents this disease is less dangerous,

and, if not too long neglected, may, in the majority of cases, be brought to a safe termination; a trip to the beautiful scenery of Pootoo, now within the reach of almost every one, being among the most powerful auxiliaries. And it is to be hoped that the establishment of the Scaman's Hospital will, to some extent, obviate the difficulties of treatment in the case of sailors.

CHINESE PIRATES.

From time immemorial the maritime districts of Chekiang have been infested with pirates. In times of greatest tranquillity vessels can proceed to sea only in large fleets, lawless persons, generally fishermen, being always ready to plunder when it can be done with safety. With the exception of the force which has recently occasioned so much consternation, the coast has been exempt from any formidable fleet since the early part of the reign of the late emperor. About that period a horde of pirates gradually acquired strength under some very able commanders from Fahkeen, and for many years kept the coast in subjection, preying upon commerce and devastating villages. At length a brave man, Admiral Le, also a native of Fahkeen, came into office; he soon collected a fleet and went in quest of the pirates; whom he met off Putoo. A real battle ensued. Le was shot dead, and the pirate chief accidentally drowned. With the loss of their respective commanders the hostile fleets separated, one making for Ningpo, the other for Shihpoo. Posthumous honours and titles were conferred on the faithful Admiral, by imperial authority, and a temple erected to his memory in the city, where, before his tablet, sacrifices are offered to his manes by the authorities twice every year. The piratical force was subsequently overcome and dispersed, in accordance with usage, by conferring buttons upon the leaders, accompanied with office and emoluments, for returning to their allegiance. The new chief soon after was appointed generalissimo of the province, and became a popular and efficient officer; he sowed dissension among his old comrades in crime, and gradually dispersed them.

From that time till the occupation of Chusan by the English, robberies were of frequent occurrence, but at this period the coast was scarcely ever disturbed. The relinquishment of the island, however, by its conquerors was contemporaneous with the reappearance of native buccaneers, who formerly had some dread of the prowess of their military rulers, but which the events of the war had effectually dissipated. Gradually the coasting trade suffered so much from forced contributions, that large sums were gladly paid to foreign vessels for convoying junks and boats of every class. This business soon fell into the hands of the Portuguese, of Macao, who fitted out numerous well armed lorchas, expressly adapted, in every respect, for the object required. At times, as many as fifty vessels have been on the coast, all of them more or less employed, of from fifty to eighty tons burthen, and carrying ten to fifteen guns each, some of large calibre. For a

while this system worked very well, until the number of lorchas exceeded the demand, when these vessels became a greater terror than the most formidable pirates had ever been. Native pirates generally confined themselves to robbery, very rarely taking the life of any except in action: the foreigners added rape and murder to robbery.

Assuming that but a tithe of the reports be true respecting their depredations on the coast, and from what has come under observation at Ningpo we are prepared to believe them all, this state of things has been, or rather is now, appalling. Happily the Government at Macao has taken some parise-worthy measures to repress the barbarities perpetrated under the Portuguese flag. The English Consul at Ningpo, Mr. Hague, has been induced to act as Consul for Her Christian Majesty, and as far as this port and coast immediately adjacent is concerned, the Chinese have no longer reason to complain of their protectors. Despite the aid afforded by lorchas, the pirates have every year increased in numbers, power, and audacity. The fishing boats of Ningpo, numbering several thousands, have been unable for several years to pursue their vocation at the neighbouring islands without foreign protection. There has often been a great display of plans for their extermination by the authorities, but the imperial fleet has always managed to keep a long way off the freebooters. Once they appeared to be in earnest, and got the brig-of-war *Espiègle* to cruise after them, but the Englishman could not get at their haunts. Their head quarters has generally been at Shihpoo, a small walled town of Ningpo, about sixty miles from Chinhai. It has an excellent harbour, well sheltered, but exceedingly difficult of approach; the passages are four in number, and though deep are very narrow. The tides too have prodigious force. In this place the pirates can safely bid defiance to almost any force sent against them. They have taken considerable pains, however, to make it known that it has never been their intention to molest foreign vessels, uniformly confining themselves to the levying of black mail upon all junks and boats. Another place of great resort was until lately the Hieshan Islands, about twenty miles S.E. of Shihpoo. At this place they had something like a dockyard, and a large accumulation of stores of every kind and captured junks. About eighteen months ago some ten lorchas were hired to join in an expedition against the place. Opportunity was taken of the absence of nearly all the pirates whilst on a cruise to the northward, and the united Chinese and Portuguese force took the place, and according to all accounts they made a profitable speculation.

Junks were sunk at the entrance of the harbour to stop it up, but these floated out with the next spring tides, and left all clear. Another rendezvous on an island not far distant was broken up soon afterwards by some lorchas on their own account, and though it cost a little bloodshed, they seem to have thought it a splendid prize. Notwithstanding these checks, they continued sufficiently formidable to impede greatly the commerce of the whole coast.

Last summer some daring spirits from Canton appeared among them, when they increased in numbers and efficiency. They established

their head quarters at Shihpoo, laid the place under contribution, and barely consented to tolerate the presence of a few subordinate Mandarins in the town. Numerous large villages on the coast were pillaged. When news of their approach afforded the inhabitants opportunity, they would bury their valuables and take to the hills for personal security. A town on Chusan was visited several months since, the inhabitants of which were required to bring all their money and silver ornaments into an adjacent field, where they were relieved of nearly all they possessed. Emboldened by success, the pirates menaced the cities of Tinghai and Chinhai, which alarmed the authorities, who began to take measures for the defence of Ningpo, and for the overthrow of the piratical powers. To allay the fears of the people, the prefect issued the following address.

“The Canton piratical cutters are still cruising on the Chehkiang coast, but the Admiral has gone to Chinhai with vessels and troops for the purpose, on the one hand for devising plans for warding off attacks, and on the other to the three Vice Admirals to arrange for active operations, all of which have been settled. With these precautions there is no occasion for anxiety. Besides as each important pass and estuary yet more imperiously require additional defences, I have visited (the hill country) Fanghwa and Siungchan, where I enlisted eight hundred able-bodied men, who are now coming to Ningpo in detachments. Four hundred and fifty have been sent on board the ships of war near the Salt Gate, to await orders for service. Knowing that these brave fellows, who being mere raw recruits, and unacquainted with the customs of the place, may go ashore and create disturbances, I have appointed trusty officers to restrain them, and promptly issue this proclamation that you inhabitants may understand that these marines have been recruited for the defence of your homesteads, and also that they receive a daily allowance for rations. Moreover strict orders have been given to Ko Kant-siang and the other chiefs of these braves, that they diligently control them, and forbid their going ashore to force credit, or compel cheapening in dealing with the people, or to kick up rows of any kind. If they dare purposely oppose, and do not comply with these injunctions, you the people are at liberty to seize the martial triflers of the law, and haul them to my court, to inform against them, when they shall certainly be tried according to the severities of the military law. The people are to mind their business, and not feel nervous or fidgetty about the matter. Do not oppose these special admonitions.”

The enrolment of these volunteers occasioned considerable excitement in the country. The report got abroad that foreigners had been all exterminated; crowds followed the recruits to see what had been left of us. Observing a foreigner passing the streets, one cried out to his companions, “Why I thought that fellow’s throat was cut long ago.” There is reason to believe that the Mandarins took some pains to circulate rumours that the pirates were bent on the destruction of the foreign community; an artifice designed partly to divert the people’s minds from impending dangers, but chiefly to work upon the fears of

foreigners, so as to secure the assistance of a ship of war in the river. Meanwhile they could not conceal their own fears, for every day brought tidings of some new outrage. Lorchas were no longer a protection to the mercantile marine; their convoys were intercepted, whilst they were allowed to proceed. About this time intelligence reached them of the entire destruction of a village near the Fakkeen boundary, in which the pirates are said to have lost one hundred men. The worst feature in this affair, in the opinion of the authorities, was the determination of the poor villagers to memorialize the imperial government respecting their misfortunes, by which many officers' buttons would be in jeopardy. Great reliance was placed in a naval force which the Tautae of Shanghae had collected, and which had been placed under the command of a man of known bravery, Commodore Wang. This officer had been reclaimed from a piratical career by a button and its accompaniments, power and wealth. As a Mandarin he had been assiduous to repress his former companions in arms, mainly however by harassing their families. The imperial fleet under Commodore Wang consisted of about a dozen vessels, and the schooner *Boxer*.

He was joined at Chinhae by six cutters well manned, and with this force he proceeded to give the pirates battle.

The two fleets met off the coast of Chusan, on the 7th of December last. Wang bore down upon the pirates, from whom he received a warm reception, their whole fire being directed against his vessel and two others of the fleet, each of which was commanded by one of his nephews. This was owing to the preconcerted defection of that portion of the imperial fleet which constituted their main force, and on which it was expected the fighting would mainly devolve. To the dismay of all, the Canton cutters firing a few blank shots, Wang and his kinsmen were captured, whilst the *Boxer* and the remnant of his force made all sail for Ningpo.

Elated with their victory, the pirates returned to Shihpoo and gave out their intention of laying Ningpo under contribution. As many as forty were killed on each side in the partial fight. It was proposed by his captors that the commodore should be eviscerated, and it was supposed at Ningpo that the barbarity had been executed. Counsels more in accordance with the usage of Chinese pirates eventually prevailed. "Dead men tell no tales," is a maxim with marauders who are in danger of being brought to justice, but Chinamen, having no occasion to fear anything of the sort, hold, that a man once dead can never be squeezed again, and find it to their profit to spare their prisoners for ransom money. In this way the quondam pirate chief will be made to part with all his savings.

The consternation at Ningpo, when intelligence of this disaster was received, was excessive; no apprehension was felt by the authorities for the safety of the city so long as the brig-of-war remained in the river, but the contemplated departure of the *Contest* gave great alarm. They earnestly besought her detention, but dared not ask for the favour in an official manner. During the last reign no Chinese officer

would have hesitated to present such a request under the seals of office, but now the feeling against foreigners in the cabinet of Peking is supposed to be so strong, that those who have dealings with them are constrained to act with great circumspection. It was not, therefore, till the latest moment, just as the *Contest* was about to sail, that formal application was made for her detention; when it came to the point they thought the Imperial displeasure was less to be dreaded than an attack from the pirates. Her commander, the Hon. Captain Spencer, consented to defer his voyage to Loochoo. The breathing time thus afforded was occupied by the Mandarins in devising plans for averting the impending calamity. They know that none but steam-vessels could follow the pirates through the intricate channels of Shihpoo, and accordingly took measures for hiring a couple from the Peninsular and Oriental Steam Company at Hongkong, offering six thousand dollars monthly for each.

At the same time they were preparing for the worst, and endeavouring also to negotiate with the victors at Shihpoo. The arrival of the Governor with a large retinue from Hangehau imparted an additional impulse to the proceedings of all the subordinates, who received the following notification from the Taitoual:—

“As regards the arrangements respecting the Canton pirates at Shihpoo, who are plundering and oppressing the people as far as the maritime ports of Ninghai and Linghai, you are informed that the Vice-Admirals of Tinghai, Whanggen and Wangehau, have been unable to put them down, and that I have received despatches from the Governor to the effect that he has twice memorialized the Emperor for their degradation; and also that the Admiral of Fuhchau should lead Fulkien troops hither, and take command of the combined forces from Kiangnan and Chekiang, to destroy or capture the miscreants. Moreover, I have repeatedly notified the Genera'issimo, the Vice-Admirals, the Prefects, and district Magistrates, to muster the military and naval forces, within the respective jurisdiction of each, and to determine on a day for uniting for their utter extermination. And further, I have taken vigorous measures for warding off attacks. Now that the Governor has arrived at Ningpo, with the design of personally superintending this matter, you must await his orders, co-operating in the mean time with him in observing his plans. Investigate and act in the matter with judgement. That is the point.”

Instructions were also addressed by the district Magistrate to the people, directing them to prepare for the emergency, which are worth transcribing here, nearly at length. It was to call upon the people to organize for mutual protection.

“As the Canton piratical cutters are cruising about Shihpoo and Ninghai, harassing the inhabitants, the Prefect has called upon me to muster the troops and volunteers, that they may prepare for a vigorous defence, and also to encourage the gentry and literati of town and country to contribute funds for the embodying of patrols. I find that the streets in that quarter between the city walls and the river, the principal mart of business, with a dense population, are entirely un-

provided with palisades; the residents wholly relying upon the natural impediments to a passage. Now, although the pirates may not be able to skulk in, rat fashion, extra precautions should, nevertheless, be taken against them; therefore the organization of the able-bodied as a guard is really an important measure in the present exigency. Besides employing the effective force which I have recruited I communicated with the military departments for the distribution of troops to keep a sharp look out at each throughfare; I have also held a conference with the gentry and literati (*i.e.* influential citizens whose relatives hold office in other parts of the empire) and, with their advice, have committed to the Sub-Magistrate the command in that quarter, and issue also this proclamation informing the scholars, merchants, soldiers, and people, of the whole district, that the sea-board is in an unsettled state, and for the defence earnestly enjoin you to raise funds for the enrolment of able-bodied braves, and that with your utmost strength and with united hearts you apply yourselves to the erection of street palisades, and the employment of a patrol. Keeping watch, as Meneius would say, for mutual protection, and then be prepared for peace or war. If nothing is the matter the bamboo may be beaten by the patrol from the closing to the opening of the palisade gates, but if anything occurs, then make a clatter with gongs as a signal for the braves to come out, surround, and apprehend the wretches, and haul them up before us, when the soldiers shall be commended and encouraged with words, according to their respective merits. Should the pirates have the audacity to offer resistance, they may be lawfully killed. These plans are designed for the protection of the place. As you have yourselves and families to care for, let there be mutual exhortation in this matter. I have certainly great expectations of you. Be energetic! A most important and special proclamation."

These instructions were not entirely disregarded, and what with the movement of the authorities, and the efforts of the people, the city became unusually agitated. Tents were pitched in many places, affording miserable shelter to miserable soldiers; patrols were kept in constant motion by night, and the city gates shut at an early hour of the evening. The presence of the Governor and his large retinue contributed, too, to the animation of the scene. On the other hand, the pirates plied their vocation with unabated activity. Whilst they and the officers sent to confer with them, were interchanging visits of ceremony, giving and receiving feasts, the business of intercepting vessels bound for Ningpo suffered no interruption. Not less than 400 vessels of different sizes were detained for ransom; in fine, they virtually blockaded the port; the price of all articles brought seaward was considerably enhanced, and daily becoming dearer. As lorchas came by with their convoys, they were not only always relieved of them in a summary manner, but they generally lost their Chinese hands by desertion. The pirates sometimes saluted the Portuguese by whom they were saluted in turn. They uniformly declared that it was not their purpose to molest foreigners; but it may be questioned if they would have held to these professions had the native commerce failed to satisfy their ever increasing demands.

Hitherto when vessels were intercepted by pirates, their owners were generally able, without much loss of time, to effect a ransom; but this new body was so exorbitant in their demands, that the merchants preferred leaving the matter with the authorities. It was not difficult for prisoners to purchase their liberty. There were many things required for the use of the fleet which could only be procured at Ningpo; and for such articles captured persons could procure release. Many persons were retained in this manner, a species of barter which the natives of Ningpo were not altogether unacquainted with, as may be inferred from the following incident. A few days since a schoolboy, who had for the theme of his English exercise the word "egg," wrote thus: "Egg, that what formerly Englishman got change Chinaman make." On being requested to explain his essay, it appeared that he meant to say, that when Ningpo was in possession of the English, they would catch Chinamen and exchange them for eggs.

As a very slight movement of the Shihpoo fleet towards Ningpo would have occasioned panic in the city, and would have caused its desertion by the Mandarins; the braves would have followed, and close in their train the remaining classes, scholars, merchants, and common people. None would have remained but the aboriginal vagabonds, and the adventurers who had followed the volunteers from the hills, and who would hardly be content with what had been left behind by the citizens in their flight.

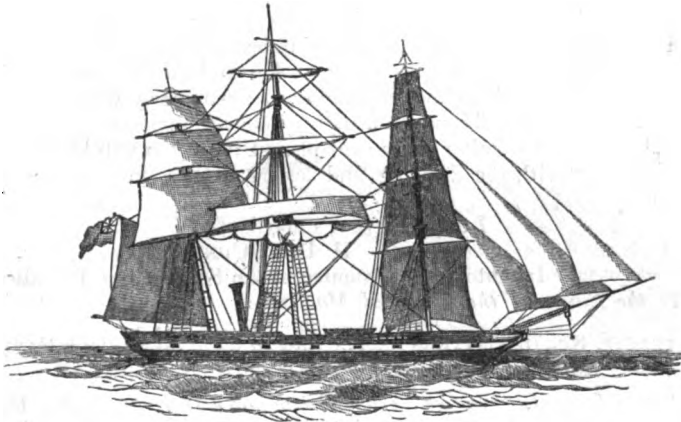
It was in anticipation of such an event, which at one time appeared sufficiently menacing, that the British residents requested the further detention of the brig-of-war. To the great joy of the Mandarins, it was decided that the *Contest* should remain in the river till the aspect of affairs changed, as in their opinion her presence alone kept the pirates at a safe distance. The occasional presence of a ship-of-war in Chinese ports is unquestionably very useful, were it only to strengthen the conviction that foreigners possess the ability to maintain their present footing in China, and thus secure their safety and toleration. To a considerable extent at least naval vessels may be regarded as the preservers of peace. Whatever advantages accrue from the visits of ships-of-war are enjoyed by foreigners generally, but as far as the four newly opened ports are concerned, the flag of Britain has alone been found affording protection. Perhaps the protection afforded to the garrisons at Hong Kong and Macao by the American squadron, gives the citizens of that republic a fair claim upon other powers; such at least appears to be the opinion of our naval commanders. At two of the northern ports the stars and stripes have never been borne by a national vessel, whilst though it is true that United States vessels have been seen at Amoy and Shanghai for hours together, it was only when the east coast was fanned by the zephyrs of the summer monsoon, causing cynical people in these latitudes to indulge in the churlish remark, that epauletted Americans cannot beat against a N.E. monsoon.

(*To be continued.*)

PATENT MODE OF REEFING TOPSAILS FROM THE DECK. *By H. D. P. Cunningham.*

Gosport, 6th April, 1853.

SIR,—In the last number of your valuable periodical, you gave publicity to an improved plan of rigging ships by Mr. Forbes; and as a subject of this nature cannot fail to be interesting to a large number of your readers, I beg to submit to you my method of reefing topsails, &c., from the deck without sending men aloft, and which I perceive is admirably adapted to Mr. Forbes' new rig, inasmuch as upon this principle *the sails can be almost entirely stowed from the deck without sending any one aloft.* I enclose a rough sketch of Mr. Forbes' ship, exhibiting the main, lower, and lesser topsails and topgallant sails rolled up by my method, all which sail could also be set from the deck in a few minutes.



In these days of want of seamen, high wages, and vigorous foreign competition in shipping, some plan for facilitating the working of the sails of merchant ships, or, in other words, of bringing the sail power more under mechanical control, is much called for. I trust then that my invention has provided this desideratum, as by it the sails of a ship rigged on Mr. Forbes' plan could be handled by persons quite unskilled as seamen. I would undertake to close reef the topsails of a *four hundred* ton ship, together with her topgallant sails down to the warp, (indeed almost entirely stowing them,) by *ten* men who had never before been on board of ship, and this too in *ten minutes.*

You will observe, by the copies of testimonials herewith enclosed, that my plan is not existing only in theory, but that it has been proved by practical test, particularly through the late stormy winter. And it appears to be the opinion of many practical persons who are acquainted

with the invention, that it is calculated gradually to supersede the old, dangerous, and imperfect system of reefing topsails.

At present I am only fitting topsails on the ordinary plan, but I look forward to the period when the application of the principle to vessels rigged according to Mr. Forbes' plan, will enable the full advantages of it to be developed.

As most of your readers are nautical men, it would be needless to point out to them the advantages which must be derived from being enabled to reduce and make sail from the deck with few hands, and in an incredibly short time. Some of these benefits have been happily exemplified during the late severe winter, when it will be seen, by the letters from the Captains, that two brigs attribute their preservation to being fitted with my invention.

It will be seen by the drawing, that there is not any difference in the form or general appearance of the sails, except the absence of reef points, earrings, and reef tackles. The sails on the fore and mizen masts appear as they would if fitted with my patent. I would also call your attention to the circumstance of the sails wearing so much longer, as will be seen by the various letters from the Captains.

As my invention is so well calculated to benefit the merchant marine, not only of England but the whole world; and further, as it claims high consideration from humane motives, particularly with reference to the risk of human life which usually attends the operation of reefing topsails in heavy weather on the old plan, I trust you will kindly give this, together with the drawing and letters, a place in your valuable pages.

I am, Sir, your's obediently,

H. D. P. CUNNINGHAM,

Inventors and Patentee of the Self-reefing Topsails.

To the Editor of the Nautical Magazine.

EXTRACTS, &c., OF LETTERS RESPECTING MR. CUNNINGHAM'S PATENT
MODE OF REEFING TOPSAILS FROM THE DECK.

*Extracts from Letters, &c., from Commander Burney, R.N., Com-
manding the Peninsular and Oriental steam-ship "Iberia."*

February 20, 1851.

I have much pleasure in informing you that your topsail answered my fullest expectation in every particular, and that I have no hesitation in recommending it for general use, particularly for vessels that are short handed. I have reefed it under every possible circumstance, except in a heavy gale.

March 26, 1851.

You will be pleased to hear that I had an opportunity of giving your topsail a trial in reefing in a heavy gale of wind right aft. It was done by three hands in three seconds, a close reef and a perfectly snug one. You need not, in my opinion, hesitate in fitting any vessel with it, for unless with prejudiced minds, it cannot fail to give satisfaction.

Report of Survey.

Iberia, 21st Jan, 1852.

After one year's trial of your patent topsail on board the above vessel under my command, I have ordered an inspection to be made as to its state and

condition by the undersigned officers of the ship, and I have much pleasure in informing you their opinions are, that the sail is less worn, and altogether in a better condition than a sail on the ordinary plan would have been, after the frequent heavy weather which the sail has been exposed to. And keeping in mind that we have made a voyage every month to Gibraltar and back since the first application of your topsail, that the yard is in a perfect state, and the topmast shows no further mark of wear than a mast would with a yard on the ordinary plan, and that they are quite satisfied of the importance derived from the invention.

And I further beg to state, in justice to the invention, that on our late voyage I had frequent occasions to avail myself of the advantages of the sail, having experienced severe gales of wind both on the outward and homeward passages, and frequently had to close reef; indeed I cannot say too much on its advantages over the ordinary topsail.

(Signed)

CHAS. F. BURNEY, Commander, R.N.

THOS. BLACK, Chief Officer,

RICH. PADDOCK, Boatswain,

THOS. DUNNE, Carpenter.

To Henry D. P. Cunningham, Esq.

Letter from Captain Mehan, Commanding the Peninsular and Oriental steam-ship "Jupiter." Dated 15th October, 1851.

You are fully aware that the *Jupiter's* sails are small, and that it must blow very hard indeed to become necessary to reef them. One opportunity only occurred in the course of the voyage of trying your patent self-reefing topsail, with a strong north-east gale on the beam, and high sea, ship labouring much. I gave orders to reef the topsail, and in less than one minute from the time the halyards were started, the sail was reduced to the required size, and remained so for twelve hours, when the weather became moderate, and the halyards being taken to the winch, in one minute the topsail was at the masthead; both operations being performed by *three* hands in the short time mentioned, and in a most satisfactory manner, without sending a man off the deck. I feel convinced it only requires a trial to remove prejudice, in order to secure its general adoption.

Extracts from Letters, &c., from Captain William Smithson, Commanding the Brig "Speck."

Yarmouth Roads, 5th Dec., 1851.

Respecting your *patent self-reefing topsail* fitted to the brig *Speck*, I am satisfied that two hands can take in one, two, or three reefs in any weather, and also let them out, and in every other point the sail answers well, stands well, and is equally strong, or more so, than the old plan; indeed in every way I am perfectly satisfied, and can only say, that I wish the main topsail was fitted in the same manner.

Hartlepool, 8th Dec., 1851.

I am more and more pleased with it, and after the repeated trials we had yesterday, under the most difficult circumstances, I am convinced it will answer in any weather.

Hartlepool, 21st Jan., 1852.

On Monday night we gave your topsails a fair testing; we had to close reef them with the wind abeam, which we did by the watch alone (*both topsails*) in less than five minutes. I only wish you had begun twenty years ago, for the amount of life, property, time, and fatigue of mind and body that would have been saved, it is impossible to imagine.

We the undersigned, Captain, Mate, and crew of the brig *Speck*, certify that we are of opinion the preservation of the said brig, under Providence, on our last voyage, was owing to Mr. Cunningham's invention for reefing topsails from the deck, with which the *Speck* is fitted. That the brig having sprung a dangerous leak during a succession of heavy gales of wind, it required the incessant work of all hands to keep the ship free; and we are of opinion that had the men been obliged to leave the pumps to reef the topsails on the old plan so often as we were obliged to do, (it being necessary to keep sail on the ship,) and taking the time it would have done on the old plan, the leak would have overpowered us, and the ship would have gone down; whereas by the aid of Mr. Cunningham's plan, *two* men were sufficient to reef both topsails from the deck in a few minutes. And we further certify, that on the occasion of parting our cable off Dungeness in a heavy gale of wind, the safety of the ship was owing to the quick way we got both topsails set, and the ship under command. And we therefore thankfully acknowledge the services which have been rendered to us by Mr. Cunningham's plan for reefing from the deck, which has now been so well tested on board the *Speck* for one year, and in the heaviest kind of weather.

Given under our hands aboard the Brig *Speck* in Portsmouth Harbour,
10th November, 1852.

(Signed)

By ALL HANDS.

Extract from a Letter from the Master of the Brig "Clara," of Sunderland, April 23rd, 1852.

I have much pleasure in informing you, that having made four passages between Southampton and Sunderland in the *Clara*, fitted with your patent for reefing topsails from the deck, during which time we have had every opportunity of giving it a fair trial, I find it to answer on all occasions admirably. We generally close reef the sail before furling in a roadstead, which is very convenient for getting under way in strong winds; and in my opinion the sail will last longer, as there are no points to chafe it, or tear the sail when badly reefed.

(Signed)

ROBERT ATKIN.

Extracts from Letters from Captain Jameson, of the Brig "Triton."

Sunderland, May 7, 1852.

I write to say that I arrived here last night after a tedious passage. I have not had much trial of your self-reefing topsails, having only to reef them once, which I did with the greatest ease. I have reefed several times on trial, and was very much pleased, the sails setting well at all times. I am convinced the plan only wants a trial to become in general use, and I believe with a great saving of property.

24th May, 1852.

I have had a fair trial of your self-reefing topsails, for on the 15th inst. I had to close reef both topsails on the Deeps, with a gale S.W.b.W., and did it to the greatest of my satisfaction.

March, 1853.

After nearly one year's trial of your patent topsails, I have much pleasure in stating, that the longer I use them, the better I like the plan. I have had it in use since the 16th April, 1852, and I find the sails in a great deal better condition than if they had been on the old plan. I have reefed them under every circumstance; running free, wind abeam, and close hauled, and I find that I can do it much quicker and easier than on the old plan. In fact, I will engage to close reef both topsails as soon as the reef tackles could be hauled out in the ordinary way of reefing. When I got your patent, I was thinking

of condemning the foretopsail, but I had it altered, and wore it until September, when I could not discover any difference in it. And considering the number of gales which I have been exposed to, I have not had so much as to take a stitch in my sails, whereas I have been in company with ships that have had their topsails blown to pieces before they could get them reefed. I firmly believe a topsail will last two years longer on this plan than on the old. Indeed I cannot say too much in favour of your invention, nor yet so much as it deserves, and I am convinced it only wants to be more known to remove prejudice, and secure its general adoption.

Extract from a Letter from Captain George Robson, of the Emigrant Barque "Clio." Dated Quebec, 4th May, 1852.

I am quite satisfied with the working of my maintopsail yard; it is quite to my satisfaction. I wish I had had the fore one done. I have tried it well, from a whole topsail to a close reef; by the wind, and running; and it always answers well. My topsail is just as good as it was when I left Cowes, but the fore one I have had to repair twice from reefing on the passage. *One of my passengers and myself close reefed it in a minute.* I am bound to Carmarthen in Wales, or else I should have had the foretopsail fitted on my return. Trusting you will have every encouragement which the invention deserves.

P.S. Some won't believe that it can be done, not even when they are looking at it.

N.B. Both topsails of the *Clio* are now fitted.

Extract from a further Letter from Captain Robson, dated Caldy Roads, 14th July, 1852.

It is with pleasure that I address a few lines to you from this side of the water, in a measure of health and all right with the barque *Clio*. I am perfectly satisfied with your invention to my maintopsail yard, and would have the fore one done if I was in hail of you. The topsail that you lent a hand to bend at Cowes has not been touched until yesterday, when we unbent it to give it a spin. I cannot say too much in favour of the invention than I have done. *It is most excellent.*

Extract from a Letter from Captain Van Hasten, of the Dutch East Indiaman "Japara," dated from Rotterdam July 22nd, 1852.

Having a few moments to spare, I beg to express my perfect satisfaction of the patent topsails made on your plan. I tried the sails many times during my voyage from Cowes to Holland, and twice I double reefed them in sudden squalls in the North Sea. My yards and sails worked so easily, that I was able to reef and unreef in a moment, with very few hands. I do not doubt but that the plan will in a short time be used on board all our merchant vessels for the sake of quick and sure reefing, as well as for the advantage of the sails lasting a longer time than topsails on the old plan.

Extract from a Letter from Captain Gill, of the Brig "Sophia," dated 14th December, 1852.

I have much pleasure in stating, after two months' fair trial of your patent mode of reefing topsails from the deck without sending men aloft, that it answers in every way to my satisfaction. I have frequently had to close reef the maintopsail under every disadvantage, and always found it to stand better than the foretopsail, which I hope soon to have altered to your patent. I close reefed the maintopsail with the watch, on the passage to Hartlepool on the Deeps, in a gale of wind from the N.E., with high sea. It was done in two

minutes from the time the halyards were lowered, until the sail was properly set. It only requires a trial to be in general use.

Copy of a Letter from the Captain and Officers of the Ship "Tropic," reported having been in the hurricane of the night of the 26th December last.

Ship *Tropic*, Motherbank, 31st Dec., 1852.

In respect to the patent maintopsail fitted by you in London to this ship, it affords us, the undersigned, much pleasure in testifying to its *efficiency* and *strength* during the severe gale of the night of the 26th inst., to which we were fully exposed off Portland.

We would more particularly call attention to the facility of reefing your topsail, which *three* hands can accomplish in *two* minutes.

(Signed)

H. A. PEARCE, Captain,
J. H. WHITEHEAD, First Mate,
JNO. STELBERG, Second Mate.

Copy of a Letter from Captain Fabian, of the Brig "J. C." dated 30th March, 1853.

I beg to acquaint you, that having had your patent for reefing topsails from the deck, without sending any one aloft, in use on board this brig in both topsails since August, 1852, during which time I have had every opportunity of trying it in every kind of weather, I find it to answer in every way to my satisfaction. Under any circumstances, I find the watch on deck sufficient to reef both topsails. In the gale of wind of October, 1852, when so many vessels were lost entering Sunderland Harbour, for want of being able to get sufficient sail set in time I, before taking the Bar, shook out the close reef of my maintopsail to a whole sail, which gave me complete command over the vessel, and enabled me to pass the Bar in safety.

Translation of a Letter from Capt. Krawn, of the Barque "Japara," to M. W. Reys, of Rotterdam, dated from Batavia, 24th Dec., 1852.

My patent topsails answer perfectly, with a great deal less wear than on the old plan. I had this day on board the *Japara* a visit of the Rear Admiral and several of the chief officers of the navy, to see the topsails worked, with which they were very much pleased and satisfied.

A HINT RESPECTING THE BAROMETER.

The purpose for which the Barometer was originally designed, and which ever since its invention it has been supposed actually to accomplish, is *to measure the weight* of the atmosphere, and this it certainly does effect in one sense of the word, but not in its generally received sense. By the weight of any heavy body, such as a cannon ball or a carriage wheel, we invariably understand the weight of that body when free from motion, and this weight is always a just criterion of the quantity of matter which the body contains; but in weighing the air by the barometer, we only obtain its weight modified by the degree of speed with which it may be passing along at the time. Its barometric weight, therefore, except in a perfect calm, without either upper or lower current, which perhaps seldom or never happens, must perpetually differ from its real or dead weight, and for this reason cannot rightly be regarded as a perfect measure of its mass. Hence it is plain that if the air is a fluid with

a well defined surface covering the earth in a similar manner to the sea, and subject to elevations and depressions resembling the tides of the ocean, these atmospheric tides increasing or decreasing at any place in proportion to the volume of air collected there, can never be accurately ascertained by the barometer without reference also to the velocity of the wind, by making due allowance for which we alone can arrive at its real weight, and consequently at its quantity. In order to obtain a rough estimate of the amount of the correction which it thus appears to be necessary to introduce into the readings of barometric observations on this account, I took for data those recorded in the *Nautical Magazine* for the years 1835 and 1836. In the column marked "Force of the Wind," the minimum degree, or No. 1, was first searched for, there being no calm noted during those years, and wherever that number occurred, the heights of the barometer, given in the parallel columns, were carefully extracted. The mean of them was then taken, and in like manner the mean corresponding with every other degree of force up to No. 11, which is the highest registered. The following is the result of these calculations:—

Force of Wind.	Mean Barometer	Force of Wind.	Mean Barometer.	Force of Wind,	Mean Barometer.	Force of Wind.	Mean Barometer.
No. 1	30.19	No. 4	29.92	No. 7	29.67	No. 10	29.51
2	30.03	5	29.87	8	29.54	11	29.40
3	29.98	6	29.77	9	29.49		

By this table it will be seen at a glance that the barometer falls with every degree of increase in the velocity of the wind, and not only is this the case, but I think it will appear also that this fall of the mercury proceeds according to a known natural law. In treating of centrifugal motion, it is usual to illustrate it by supposing a heavy body, a ball or bullet for instance, attached to the end of a string, whilst the other end is held in the hand, and thus becomes a central point around which the bullet is made to revolve. By this revolution the string receives a pull outwards, the force of which may be computed by the following proportion.—(See Barlow's *Math. Dict.* Art.: Central Forces.)

As the radius of the circle it describes
Is to double the height due to its velocity;
So is the weight of the body,
To its centrifugal force.

Applying this rule to the motion of the air round the earth, we must suppose the atmosphere to be the bullet, and the earth's radius the string; then calling the latter r , and the weight of the former b , and putting v for the velocity of the wind in feet per second, $2g = 32\frac{1}{2}$ for the force of gravity and f for the centrifugal force, we shall have, from the laws of falling bodies, according to the same author.

$$4g^2 : v^2 :: g : \frac{v^2}{4g} = \text{the height due to its velocity.}$$

Whence, by the same proportion,

$$r : \frac{v^2}{2g} :: b : \frac{bv^2}{2gr} = f, \text{ the centrifugal force.}$$

Now if we multiply the square of v by b , which latter, if it be made to represent the average weight of the air, is a constant quantity, and if we divide the product by $2g = 32\frac{1}{2}$ which is also a constant quantity, and by r , or the radius of the earth, which is another constant quantity, then as v^2 is the only variable quantity, the results will only vary with this quantity, and in the same proportion. Consequently f , or the centrifugal force with which the air is pulled upward by the wind, is directly as the square of the velocity; and this

force, expressed in terms of the barometric scale, being added to the observed height, will give the true height, corresponding to the dead weight of the superincumbent air.

It now remains to show how far this theory accords with observation, and for this purpose I place the results of each side by side.

Force of Wind.	No. of Observations	Mean Barometer.	Barometer according to Theory.	Force of Wind	No. of Observations.	Mean Barometer.	Barometer according to Theory.
No. 1	109	30·19	30·02 01	No. 6	139	29·77	29·77 11
2	255	30·03	30·01 03	7	82	29·67	29·66 13
3	355	29·98	29·98 05	8	45	29·54	29·53 15
4	196	29·92	29·93 07	9	14	29·49	29·38 17
5	247	29·87	29·86 09	10	14	29·51	29·21 19
6	139	29·77	29·77	11	5	29·40	29·02

The perfect agreement of seven of these results, from Nos. 2 to 8 inclusive, out of eleven, is most remarkable. Had the observations been more numerous from which the remaining four were derived, the latter three in particular, there is every reason to believe that the same agreement would have been apparent. Whether the winds classed under the first degree in the meteorological register could have fallen short of the force assigned to them, and ought to have been reckoned as 0, I know not, but so we should be led to suspect from the above hypothesis, and also that 3, 4, 5, &c., should be twice, thrice, &c., the velocity of No. 2, instead of three, four, and five times that of No. 1. But however we may decide upon this point, the results will still be found in sufficiently close accordance with observation, to prove beyond doubt the correctness of the theory on which they are founded. J. N.

THE LATE DISASTROUS AFFAIR AT RANGOON.

The following interesting account of the recent affair at Donabew, in which Capt. Loch and so many of his brave companions lost their lives, is extracted from a letter written by one of the gallant officers engaged in that expedition to his friends at home.

“Rangoon, Feb. 12.

“Many events of moment have occurred since I left Pegu on the afternoon of 27th of January. We reached the ship next evening at eight P.M., and I left again at half-past three the next morning to join Capt. Loch off Donabew, making all possible haste to be in time. I arrived off Donabew in forty-eight hours, which those persons who know the distance will say was quick pulling in my boat. There I found Capt. Loch in charge of nine gunboats and four smaller boats, containing a force of about 250 seamen and marines. The *Phlegethon* steamer arrived next day, bringing Major Minchin, N.I., and a force of marines, making altogether, with some who were previously encamped on the bank, 370 men. Part of this force also consisted of some of the 67th

Regiment N.I. Late in the evening (Feb. 2) a report came that the Dacoits were marching down upon us. We in consequence landed, and I was left with the gunboats and the men of the *Fox* and *Sphinx* to protect the beach. Some sepoy were also posted in another part, whilst Capt. Loch, with the marines and men of her Majesty's —, marched into the bush in one direction, and another party of sepoy in another. In about an hour our men returned, having encountered nothing but a herd of buffaloes. The sepoy had a brush with Dacoits, who came within forty yards distance, and killed a sepoy and a friendly Burmese, but themselves had about eleven killed and wounded. The next morning (Feb. 3) at daylight we landed, as did Major M— and his men, from the *Phlegethon*. They carried two days' salt meat, cooked, two days' biscuit, and four days' tea and sugar; six days' rum for the whole force was carried by coolies. The seamen had fifty rounds of ammunition, and the marines sixty, and each man carried his bamboo water-bottle, blanket, and clothing, altogether a tolerable weight for a march. We had great trouble in getting the coolie and dooley bearers together, but at last at half past eight A.M. we got fairly on the march in the following order:—Advanced guard, the — marines, thirty-seven with their officers, and Capt. Loch on horseback; two 3-pounders from the *Phlegethon* on field carriages, with ammunition, &c., drawn by Burmese, with a gun's crew of seamen attached to each; then the *Fox* marines; then the men of the —, the officers leading their boat's crews, then the seamen of the *Fox* and *Sphinx*, with sepoy bringing up the rear; making in all 592 men, of whom 360 were sepoy.

We marched by a very good path through the thick jungle and patches of elephant grass. We went on until half-past two o'clock, hearing only a shot or two occasionally to denote our line of march, when, coming to a large open space in the midst of the jungle, with a few deserted huts standing, we occupied them for the night. I calculate that we marched twelve or thirteen miles. The officers dined together very jollily in one of the huts. I kept guard on one side of the encampment from ten P.M. till one, during which time several straggling shots were fired at us from the bush. After midnight all was quiet. Next morning at daybreak we started in the same order, again marched through jungle of thick underwood and elephant-grass. On each side were to be seen occasionally very high trees, all notched, and some bearing grotesque figures of Mea-town. The path was much rougher and narrower than the preceding day, and consequently our progress much slower. Shortly before nine A.M. (4th) a brisk firing was heard in the rear, and word was passed along that the sepoy were attacking an entrenchment on the right, and wanted the Europeans to come to their assistance. Capt. Loch halted a few minutes, but would not go back. Presently the firing ceased, and on we went. It now became dangerous to walk off the path, owing to the small bamboo sticks stuck into the ground on both sides, which the Burmese with guns chopped down as they went along. Presently the advance guard fired upon the enemy's look-outs, who were squatting down on the side of the path eating their rice. They immediately fled, and we went on. In ten minutes a heavy fire took place between the advanced guard and the enemy. The guns were brought and placed a few yards from the bank of a nullah with water in it, the marines lining the bank on either side of the guns. The first discharge of the Burmese knocked over eleven marines. The seamen as they came up outwards from the path, opened and kept up a tremendous fire on the flanks. The enemy fired on three sides, and their shot came down pretty thick, I can tell you. The jungle was exceedingly close and dark, and I could just discern an earthen embankment on the opposite side. Capt. Loch was wounded and carried to the rear; immediately after three others shared the same fate, and the men were shot down on all sides by an unseen foe. After some vain attempts at a rush over the creek, in which poor Kennedy, first lieutenant of the *Fox*, was

killed, we found it necessary to retreat without the guns, which were spiked and abandoned. The ammunition, &c., were blown up. All the guns' crews were either killed or wounded. About forty of the sepoy, who had come up towards the close of the affair, and the marines, formed the rear guard, and we moved off very slowly, carrying away with the greatest difficulty the wounded, the enemy peppering us on both flanks and in the rear. After marching five miles in the same way as we had come, we halted at the encamping ground of the previous night, and were proceeding to rest the wounded and get the column into better order, when a line of white turbans were seen rushing through the bush on our flanks, striving to head the column. All hands immediately fired in that direction through the elephant grass, and I hope did some damage. We then at once formed once more, and marched on the same way as we had come the day before. The men were greatly fatigued and thoroughly disheartened. Such of the wounded as could walk bore up most manfully, and some officers, especially, marched the whole way. Our suffering from the want of water was extreme. I ought to mention that the chiefs of Dalla, Yandson, and Donabew accompanied us with about 500 men, armed with dirks and muskets, who, far from doing us any good, greatly impeded our retreat. Just at dusk we reached a nullah with water in it, and in everybody rushed. When we crossed it the day before, we were careful not to wet our feet; now we were only too glad to drink muddy, dirty water, surrounded by darkness, standing in it knee deep. Of course everything was in disorder, and some of the wounded were thrown down. The Dacoits also shot down some of our coolies, but did not show themselves. About half-past nine we reached the banks of the Irrawaddy, and by eleven had got all the wounded on board the *Phlegethon*. Capt. Lambert, of the *Fox*, after offering to leave an officer with seven gunboats, to cooperate with Major Minchin, if he would occupy the pagoda, (which is close to the beach,) left in the *Phlegethon* with the marines and the wounded. Another officer followed some hours later with gunboats and canoes, containing all the population of Donabew, which we left entirely deserted. The sepoy all embarked on board the *Nerbuddah*, which fortunately made her appearance with a flat in tow, Major Minchin having declined to remain unless the marines and a gun were left, which Captain Lambert would not consent to. Poor Captain Loch died on Sunday morning, at two o'clock. I arrived at Rangoon on Tuesday at noon, just too late for his funeral, which took place early in the morning. We heard the minute guns as we approached. Our loss was in all 4 sepoy killed and 18 wounded; 4 marines killed and 20 wounded; 1 seaman killed and 25 wounded; 2 officers killed and 6 wounded: total, 11 killed and 69 wounded. Captain Loch, R.N., and Captain Price, of the 67th Regiment, have been lost to the service by this affair."

THE LATE CAPTAIN G. G. LOCH, C.B.—This gallant young officer, whose death whilst attacking an outpost of the enemy near Donabew, Rangoon, is briefly noticed above, and whose career so prematurely closed, has nevertheless been most honourable. Captain Loch has always sought active service, and when unemployed was a volunteer in the operations against the Chinese. He commanded the boats of *Alarm* and *Vixen* at the storming and capture of Serapaqui, Nicaragua, in 1848, for which he received a C.B. His subsequent employment has been Flag Captain in the *Winchester*, which terminated as above. It would be injustice to his memory did we not express our sincere regret at the loss which the service has sustained by his death. As a Captain, he was highly respected for his talents, gentlemanly conduct, and attention to those under his command; and in private life, we believe him to have been a true friend, and much beloved by those who had the pleasure of his acquaintance. Indeed the service can ill afford to lose an officer of so much enterprise, zeal, and ability.

MAGNETIC VARIATION.

Table showing the mean monthly westerly declination, or westerly variation of the magnet, and the mean monthly dip, at the Royal Observatory, Greenwich, in the years 1848 and 1849.

1848.				
	Variation, W.			Dip.
January	22°	50'	2"	68° 53' 12"
February	22	49	55	68 55·50
March	22	53	46	68 55·25
April	22	52	27	68 53·00
May	22	52	46	68 55·50
June	22	53	21	68 56·50
July	22	53	18	68 54·50
August	22	52	36	68 55·25
September	22	51	31	68 53·75
October	22	52	11	68 54·25
November	22	51	46	68 55·00
December	22	51	40	68 55·00
1849.				
January	22	33	56	68 55·17
February	22	42	21	68 51·96
March	22	42	58	68 54·39
April	22	42	25	68 54·68
May	22	41	27	68 53·71
June	22	40	41	68 57·61
July	22	41	12	68 49·19
August	22	37	31	68 57·72
September	22	26	54	68 48·75
October	22	28	54	68 42·31
November	22	30	34	68 46·69
December	22	28	50	68 43·96

The mean variation has been found by taking the mean of two-hourly observations; the mean dip by taking the mean of morning and afternoon observations, made twice a week.

G. B. AIRY.
Astronomer Royal.

TRIAL OF THE GREAT DUKE.

DUKE OF WELLINGTON, 131, *Screw Line-of-Battle Ship, Captain Henry Byam Martin, C.B.*—This most magnificent of war-steamers has more than answered the most sanguine expectations that could possibly have been imagined. Monday (April 11) witnessed the largest war-steamer in the world, and we may say the handsomest, doing an average of ten knots an hour; the best judges of what might have been expected from her did not give her more than nine, and that only amongst a few; the general supposition was that eight knots would be her best speed. Well may England be proud of her glorious namesake. The table below will give the exact results.

She left the dock jetty at 11.40, having on board Rear Admiral Superintendent Arthur Fanshawe, C.B., Captains Warden, Sir Baldwin Walker, (the

Surveyor of the Navy,) Captains Crispin, Henderson, C.B., Scott, Shepherd, Mundy, Moore, Cracroft, the officers of the Dockyard College, Mr. Abethell, her builder, and the dockyard officers, with a host of other officers of both services, all truly anxious to witness the performance of this mighty ship. We also noticed Mr. Smith, the projector of the screw; and that gentleman must have been more than gratified to see his principle carried out so successfully on board the largest man-of-war ever built. She took six turns at the measured mile at Stokes Bay, with and against the tide. The only thing against her was the vibration, which when at full speed was very perceptible, yet not so much as we had expected. She could even have worked up to a greater power with larger boilers; but having attained the unexpected speed of over ten knots, we think that sufficient to satisfy every purpose for which this noble vessel was built.

It has been reported that Mr. Abethell, the builder of the *Duke of Wellington*, and M. Dupay de Loine, the builder of the celebrated *Napoleon*, were seen on board in most friendly chat.

To show the interest that was excited, we believe that we may safely say that 10,000 people lined the whole way from the dockyard point, the bastions, lines, Southsea beach and common, to Southsea Castle, but, singular to relate, there was no cheering. Owing to the strength of the ebb, the visitors on board could not get on shore until five o'clock; and so numerous as to oblige the *Echo*, steam-tug, to make two trips. Results:—

Runs.	Revolutions of engines	Time. m. s.	Knots per hour.	Average of knots per hour.
1	29	5 48	10.495	} 10.022
2	30	6 16	9.57	
3	29½	5 28	10.975	} 10.187
4	31	6 23	9.399	
5	29	5 23	11.143	} 10.100
6	29	6 37	9.068	

The result of the above trial gives a mean average speed of 10,103 knots an hour—a highly satisfactory speed. The mean steam pressure of the trials was 10,456. The pitch of the screw was 16 feet 3 inches, and the diameter 18 feet. The draught of water of the ship was 24 feet 3 inches aft, and 23 feet 5 inches forward. She came to anchor at Spithead for the night.

Nearly 400 tons of coal on board; 180 tons of shot; 200 tons of water. With her guns on board, and complete for sea, her draft is expected to be 25 feet forward, 26 aft.—*Portsmouth Herald*.

NAUTICAL NOTICES.

Notifications, Fort William, Foreign Department, 22nd. Dec.

The subjoined copy of a letter from the Commissioner in Scinde to the address of the Board at Lahore, and copies of two Memoranda announcing the safe arrival of the ship *Duke of Argyle* in the Harbour of Kurrachee, are published for general information:—

MILITARY DEPARTMENT.

From the Commissioner in Scinde, to the President and Members of the Board of Administration in the Punjab, Lahore.

Dated 27th October, 1852.

Gentlemen,—I have great pleasure in forwarding copy of a letter from the Brigadier General Commanding this Division to Army Head Quarters, which

will, I am sure, interest the Board. It reports the landing from the *Duke of Argyle* of the first batch of recruits which have made the passage direct from London to Kurrachee. The majority are intended for the Punjab.

The vessel made the passage in a hundred days, without difficulty or disaster of any kind. Munora Point was the first land she sighted after leaving the Channel, and the Captain is stated to have been surprised at the ease with which he accomplished a voyage which had been spoken of as beset with all sorts of hazards, known and unknown. The vessel came inside the harbour at high water on the 19th, which, as she is 800 tons register, old measurement, and drew 16 feet 9 inches, as she crossed the bar on the day preceding the lowest neap tides, is satisfactory evidence that, even in its present state, the port is not closed to vessels of considerable burden.

I have, &c.,

(Signed) H. B. E. FRERE, Commissioner in Scinde.

Commissioner's Office, Kurrachee, 27th Oct., 1852.

Memorandum.—The ship *Duke of Argyle*, of 800 tons burden, left England with troops in the month of July last. She was bound direct for Kurrachee. The passage was made in one hundred days. The ship anchored in the harbour on the 18th October, on the afternoon of which the troops were landed on the Bunder in good health and condition.

This being the first voyage of a vessel of this character direct to the port from the mother country, it may not be out of place to mention the Captain's opinion regarding the Harbour of Kurrachee, and the facility with which it is made, points which are not perhaps so generally known as they should be. His report is annexed, and from it I take the liberty of making a summary.

The land about Cape Mouze being high, it is easily made and readily distinguished. The Lighthouse at the entrance of the harbour is situated on a high bluff point. The light is visible at 20 miles in clear weather.

On the bar there is 21 feet water in the springs, within it deepens to seven fathoms. The harbour is perfectly safe, being land-locked with water quite smooth. Its capacity is equal to the accommodation of at least twenty ships of 800 tons.

To the above I might add, that any number of coasting craft might at the same time find safe anchorage.

With such an example before us of the facility of direct communication with England, and the saving of time, of money, and of life, in adopting it in preference to the routes *via* Calcutta or Bombay, for the transport of troops and stores to the Punjab and North-West Provinces, I think it my duty as a public servant to bring the fact to prominent notice.

(Signed)

J. McLEOD,

Deputy Collector of Customs.

Memorandum.—A ship after having arrived in lat. 20° N., and long. 63° or 64° E., should steer a direct course for Cape Mouze, which is easily distinguished by the island of Culney, distant from Cape Mouze about three miles; it is of a cone like shape, and blueish colour. Cape Mouze is high land, being a continuation of the range of hills to the northward of Kurrachee, and terminates in a low point. The land from Cape Mouze to Kurrachee, distant 15 miles east, has a rugged, burnt, sandy appearance. There is a high bluff point at the entrance of the harbour, called Munora, on which the Lighthouse is placed, showing a bright light visible about 20 miles in clear weather, to the left of which are several white tents and bungalows; the outer anchorage is due south of the Lighthouse, distant 3 miles, in 7 fathoms water. To the eastward of the Lighthouse about 2½ miles are three large and four small islands, which at a distance very much resemble coasting vessels under sail. The entrance over the bar being between these islands and the Lighthouse.

On the bar there is at high water springs 21 feet, when across there are 7 fathoms. I consider the harbour perfectly safe, being land-locked, and the water quite smooth in any weather, and would contain at least 20 ships of 800 tons or upwards. I consider the port is easily made. I make the Lighthouse in lat. $24^{\circ} 48' N.$, long. $67^{\circ} 24' 45'' E.$; Var. 2 Westerly.

(Signed)

J. M. HOPKINS,
Commander, *Duke of Argyle*.

N.B.—This differs slightly from the latitude and longitude as ascertained with great accuracy by the survey of the officers of the Indian navy, which gives, I believe, lat. $24^{\circ} 47' 17'' N.$, long. $67^{\circ} 1' 32'' E.$

(Signed)

H. E. B. FRERE,
Commissioner in Scinde.

NOTICE TO MARINERS.

The subjoined Notice, issued by the Honourable the Officiating Governor of Prince of Wales' Island, Singapore, and Malacca, is published for general information.

(By Order) W. CAINE, Colonial Secretary.

Colonial Secretary's Office, Victoria, Hongkong, 11th Jan., 1853.

A Floating Light Vessel, showing one fixed plain Light, visible all round the horizon for seven miles, is moored on what is usually called the Two-and-a-half Fathom Bank, at the Western entrance of the Straits of Malacca, in four fathoms low water spring tides, about one hundred yards to the northward of the Buoy. From the Floating Light the following Bearings were taken by Azimuth Compass:—

Parcelar Hill S. $83^{\circ} 40' E.$ False Parcelar Hill N. $49^{\circ} 20' E.$

Trees, on the low land of Callam Island, just visible on the horizon, the eye being elevated twelve feet above the water, N. $85^{\circ} 20' E.$

Vessels from the Eastward and Westward ought not to approach the Floating Light within a mile on either side, as there are overfalls of three and four fathoms, with five, six, and seven fathoms water between them on the tails of the bank.

To the Northward and Southward of the Floating Light, there are nine, ten, and twelve fathoms within half a mile.

Vessels keeping Parcelar Hill E. $\frac{1}{2}$ S., will just clear to the Southward of the Bank; and E. $\frac{3}{4}$ S. will lead a vessel clear to the Northward.

The light is shown from sunset to sunrise.

A Maroon or Torch is burnt at the foreyard-arm at 10 P.M. and 2 A.M.

A Blue Light is burnt at 8 P.M., midnight, and at 4 A.M.

During the day, a Red Flag with a White Anchor on it, is hoisted.

ENLARGEMENT OF THE PORT OF LEGHORN.—A notice has been received by Her Majesty's Government from that of the Grand Duke of Tuscany, of some new works commenced with a view to the enlargement of the Port of Leghorn, an account of which has been published for the information of the Commanders of ships bound to that port.

By this notice it appears that these works consist of:

1st. A curved breakwater of the following dimensions:—The circular arc of which it is formed is

In extent	547 Fathoms
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Chord of the arc	492 "
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Perpendicular distance from the chord to the arc	109 "
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Radius of the arc	331 "
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The Southern head of the breakwater will bear from the Red Light S. $81^{\circ} 40' W.$,

distant 219 fathoms; in which distance the channel of five to three fathoms that will be left is little more than a cable's length across.

The Northern extremity of the breakwater will bear from the present molehead N. 65° $\frac{1}{4}$ W., 243 fathoms distant.

2. The second work will consist of a straight breakwater across the front of the old port, 303 fathoms in length. The Western extremity will bear N.W., distant 68 fathoms from the present molehead; and the Northern extremity will bear N. 33° W., distant 126 fathoms from the summit of the Northern magazine on the Moletto.

The distance between the Western extremity of this breakwater and the old molehead, which will be 68 fathoms, will leave only a channel of little more than half a cable between them.

The distance between the western extremity of the straight breakwater, and the Northern extremity of the curved breakwater, will be 164 fathoms.

Notice is hereby given of the existence of a rock which is situated three miles to the S.S.E. of the South Rocks laid down on the Charts off the South end of the middle Bolongo Island, on the coast of Arracan. Commanders of vessels navigating the coast are cautioned not to approach the South Rock within the distance mentioned.

By order of the Superintendent of Marine.

H. Howe, Secretary.

Fort William, 7th December, 1852.

DANGER OF SHIPPING COOLIES.

[The following will place the Commanders of our merchant shipping on their guard when employed on like service.]

Ship *Samuel Boddington*, of London,
St. Helena, Feb. 6, 1853.

SIR,—I beg to forward, for publication in your columns, the following abstract from the log-book of the *Samuel Boddington*, on her voyage from Amoy to Demerara, with a cargo of Chinese Coolies:—

"On the 9th of December, 1852, while persevering to get the ship through the Narrows of Gaspar Straits, during hard squalls, I received information that the Coolies were then making arrangements to murder myself and crew, and run the ship on the Isle of Puloo Leat this afternoon. I at once gave directions to let run sheets and halyards, down helm, and down bower anchor; 20 fathoms water; ship took 90 fathoms of chain. I then put all hands under arms, and went to work to pick out the ringleaders of this diabolical plot, and without shooting a man, I secured the ringleaders on the poop, with the exception of six, that jumped overboard and perished. We then searched for arms, and found enough to arm 200 men, consisting of sharp ground axes, Malay creses, dirks, knives, and a variety of other murderous weapons. We have secured all, and no question this prompt step has saved the ship."

This information may be of use to those who may have to carry Coolies from the coast of China to the West Indies. I have since learned that arrangements had been made to take the ship, soon after leaving the port of Amoy; but it was blowing a gale of wind when I left, and the Coolies became sea-sick, so that they had not courage or pluck to attempt it.

I remain your obedient servant,

JOHN W. HURST, Master of the *Samuel Boddington*.

—*Shipping and Mercantile Gazette*, April 8, 1853.

TORRES STRAITS.—We have been favoured by Captain Bannatyne, of the *Thomas Arbuthnot*, with a copy of a letter addressed to Captain P. P. King, R.N., by Mr. William Mackenzie, giving an account of the passage of

the ship *Gambia* through Torres Strait, in September last, by the "Northern Passage," entering the Strait by the channel which lies between the northern extreme of the Barrier Reef and the coast of New Guinea, where there is a space of fifty miles in width, clear of danger, with the exception of some small islets, which may easily be avoided with common precautions even during the night. Captain Bannatyne adopted this route for the first time on his late passage from Sydney to this port, and fully confirms the statements of Captain Mackenzie respecting the superiority of this route over all the others. As both these gentlemen are well acquainted with the various passages through Torres Straits, their opinion will be held conclusive against the southern passage, and probably after this season the Raine Island entrance will only be adopted by steamers, to whom the saving in distance of 140 miles will be an object. Three ships have already been lost in the Raine Island passage this season, two on the outer Barrier, and one on Cockburn Reef, and this before the season is half finished. This "Northern Passage," with entrances from twelve to fifteen miles in width, will prove of incalculable advantage to ships bound from the southern colonies to India, which have heretofore entered the Barrier Reef by channels so narrow as not to admit of two vessels entering abreast. And the success which attended the passage of the *Caldeu* through Torres Strait, from west to east, during the early part of this year, is likely to arrest the attention of commanders of small vessels bound to this port from Sydney during the months of October to February inclusive. Indeed the voyage to New South Wales by this route is a counterpart of the eastern passage to China during the same season, only the distance is somewhat greater.—*Sydney Shipping Gazette*, Nov. 20, 1852.

HARBOUR OF SAN DOMINGO.

Extract of a Letter from Sir R. Schomburgk, dated Santo Domingo, March 23rd, 1853.

"I have to report to you the loss of another English vessel, the *Marisco*, of Halifax, N.S., at the Islet Catalanita, exactly under similar circumstances as the *Ravenswood*. She came in ballast from St. Thomas to load mahogany at Santo Domingo; sighted Mona on the 18th of March, from whence she steered W.b.N. At midnight she was a wreck on the reef to the north of Catalanita, offering another proof of the strong current.

"A Lighthouse is now erecting at San Domingo, about two cables' length to the S.W. of the Signal Tower or Homenaje, on the battery San José. The situation is badly selected; my advice to place it on Punta Torrillo has not been heeded. The Lighthouse is of iron, and the Lights will stand 111 feet above the level of the sea. There are seven reflectors, giving a bright silvery Fixed Light. I took this morning astronomical bearings; sky clouded, but observations good enough to say, that when erected it will bear from Punta Torrillo N.W.b.W., (true,) and from the Homenaje or Signal Tower S.W. $\frac{1}{4}$ S., (true,) Variation about $2^{\circ} 30'$ E. It is of iron, and may probably be ready in two months.

"When the fabric is erected, I will give you more detailed information. It is of importance to know, that from Punta Torrillo a reef extends about a cable's length to the westward.

"ROBERT H. SCHOMBURGK."

[It is to be regretted that our surveys in the West Indies have not yet included the Port of San Domingo. Indeed, with the exception of Samana, we know next to nothing of the eastern part of the island.—ED.]

FIREBALL AT VOURLAH BAY.

To the Editor of the Nautical Magazine.

SIR,—In reading over the review by Sir W. Snow Harris of the progress of Lightning Conductors in the Royal Navy, I venture to call attention to an important fact which fell under my observation, and which fully bears out Sir W. Snow Harris's views as to the little influence of conducting bodies in attracting the electrical discharge from its determined course.

About the end of the month of November, 1839, H.M.S. *Vanguard*, on board which ship I was then serving, lay moored in Vourlah Bay, with the fleet under the command of the late Sir Robert Stopford; the weather was very thick, with heavy rain, when a meteor, commonly described as a "fireball," passed obliquely across the ship, between the fore and mainmasts, and falling into the water on the port side, exploded apparently close to the gangway with such violence as to shake the ship fore and aft.

I remember well the first impression on my mind was, that the *Daphne*, or some vessel at anchor not far from us, had blown up. We had no fixed Lightning Conductors at that time, and not anticipating any visitation of this description, the old wire ones supplied were in the box below, but were triced up immediately afterwards.

My journal, in which all the particulars of this circumstance were recorded, was lost in China, but my memory serves sufficient for the purpose, and it thus appears in this case, (as insisted on by Sir W. Snow Harris,) that the iron work and other metal about the masts and yards had no influence over the course of this discharge, which cannot therefore be considered as a discharge of atmospheric electricity.

I have the honour to be, your obedient servant,

P. CRACROFT, Commander, R.N.

37, Curzon Street, April 26th, 1853.

NEW BOOKS.

NARRATIVE OF THE VOYAGE OF H.M.S. *HERALD* during the years 1845-51, under the command of Captain Henry Kellett, R.N., C.B., being a circumnavigation of the Globe, and three cruises to the Arctic Regions in search of Sir John Franklin. By Berthold Seemann, F.S.S., &c. In 2 volumes.

There are circumstances in the voyage of the *Herald*, that impart a more than ordinary degree of interest to the narrative before us. A voyage expressly undertaken for the purposes of maritime surveying and extending the researches of naturalists into the various branches of their pursuits, cannot be otherwise than productive of results which well repay not only those who are engaged in it, but the Government by which it is sent. In the case of the *Herald*, these pursuits were suddenly and unexpectedly interrupted. The party that was sedulously engaged in the interesting objects with which they had set out, in the warm tropical regions of Central America, were unceremoniously broken off in the midst of them, and despatched, without further preparation of ship or crew than the exchange of such warm clothing as the Sandwich Islands might afford for the light habiliments in which they had been employed, to contend with ice and icy weather in Behring Straits, with the hope of meeting Sir John Franklin or any of his party. The mere fact of this duty having been

performed well, not only reflects credit on those by whom it was done, but the contrast of the two services, one under a vertical sun and the other under an arctic sky, is well calculated to prove that our seamen are ready to do their duty in all parts of the world where their ships can take them. This double service on which Capt. Kellett was employed in the *Herald*, could not but yield much additional information, and it was with some feeling of disappointment that we opened the two spare volumes in which the proceedings of the *Herald* on a five years' absence from home, in the opposite extremes of climate, and in the directly contrary character of service, are related. Circumstances somewhat extraordinary again appear. Capt. Kellett scarcely having completed the construction of charts which had been interrupted by the service to which we have alluded, was appointed to command the *Resolute*, and is now with Sir Edward Belcher in his search for Sir John Franklin, and the narrative of the *Herald's* voyage was left to be written by a gentleman who performed the duties of *naturalist* to the expedition, and who joined her in the midst of her operations at Panama. Mr. Seeman has performed his task with much credit to himself. With a just impression of the difficulties before him, he applies himself to the materials afforded him. He tells his readers "that a great mass of materials still remain unpublished, that a portion of Capt. Kellett's journal is entirely wanting, and that he had not received any diary of the *Pandora's* proceedings, the consort of the *Herald*. Much allowance must therefore be made for these heavy deficiencies, and we must hope that another edition will supply them, at some future period, in a complete history of the *Herald's* voyage.

As our object is to preserve such an outline of it as may be of use to our readers, we may commence with observing that H.M.S. *Herald*, under Capt. Kellett's command, and H.M.S. *Pandora*, (one of Sir Wm. Symonds' brigs,) under the command of Lieut. Jas. Wood, sailed from Plymouth on the 26th of June, 1845,* for the purpose of continuing the survey of the western shores of America, commencing at Guayaquil, to which point the surveys of Capt. Fitzroy had extended in H.M.S. *Beagle*, previously noticed in this journal. After crossing the line on the 5th of August, obtaining a deep sounding of 2,995 fathoms in 2° 5' S. and 30° 9' W., experiencing the S.W. current, glancing at Fernando Norouha, meeting a Jangada, stopping at Rio Janeiro between the 19th and 28th of August, and bestowing on that magnificent place epithets of praise mingled with disgust—finding fault with the Raza Light,† (we have entered our own protest against it in this journal long ago)—enjoying the hospitality of the Falkland Islands between the 19th and the 30th of September, and parting with the *Pandora* on the 3rd of October, the *Herald* rounded Cape Horn, and entered the classic district of the great Pacific. On the 11th of November we find her in Conception Bay, where Mr. Seeman, anticipating the varieties of climate through which the duties of the *Herald* would take her, very justly observes that,—

"In the course of a week or ten days a voyager may on this coast see the extremes from the most luxuriant bounty, fertilizing streams, and refreshing shores, to the aridity of the parched desert, where no green exists, and then change suddenly to the dense tropical forest. On the coast of Chili, however, the change is progressive; at Valdivia the luxuriance of nature is almost tropical; there is a difference at Conception; the foliage is neither so rich nor so superabundant, still it is a well wooded, well watered country. But at Valparaiso the difference is great; the hills are almost bare, or clad with stunted shrubs and half-grown underwood; it is merely in the ravines and the valleys that what may be called verdure exists. At Coquimbo even this is diminished;

* A month or so after Sir John Franklin left England.

† The Emperor appears to be improving his capital—why not improve his lighthouse!—P. D.

the cactus only flourishes, and a poor wiry grass is found perhaps in the more sheltered spots. At Cobija there is the desert itself,—hill, valley, and plain, either covered with sand, or the barren naked rock scorching in the sun. The contrast between Valparaiso and Concepcion made us perhaps look at the latter with more favourable eyes than we otherwise should have done; it is however a fertile place, renowned on the station for its fresh beef, vegetables, and fruit, besides corn and coal, which are both, particularly the latter, exported in considerable quantities to Mexico, Peru, and the Australian colonies."

Rich, however, as Concepcion doubtless is in these sterling advantages, she is the scourge of the earthquake; her shores may present the inviting smile of plenty, her harbour offer shelter in security to the mariner, but the handy work of science and art is not there to follow up the bounties of nature. No docks, no forest of masts, no crowded quays, no extended warehouses, no pleasing villas are found there; the stillness of the desert there reigns, and not the activity of man. The cause of this is the earthquake, the uncertainty of its occurrence, the insecurity of everything. On the 12th of November the *Herald* sailed for Valparaiso, whither we shall follow her in our next.

EXTRAORDINARY MARINE CONVULSION.—On Saturday information was received at Lloyd's under the date Liverpool, Feb. 4th, of an extraordinary marine convulsion experienced by the *Maries*, on her passage from thence to Caldera. On the morning of the 13th of October, the ship being twelve miles from the equator, in long. 19° W., a rumbling noise appeared to issue from the ocean, which gradually increased in sound till the uproar became deafening. The sea rose in mountainous waves, the wind blowing from all quarters; the control over the ship was lost, and she pitched and rose frightfully, all on board expecting each moment to be their last. This continued fifteen minutes. The water then gradually subsided, when several vessels in sight at the commencement of the convulsion were found to have disappeared. Shortly afterwards a quantity of wreck, a part of a screw steamer, were passed, so that some vessels and lives were lost.—*Daily News*, Feb. 8th.

Woolwich, April 11.—The *Rifleman*, screw steam gun-vessel, Lieutenant-Commander Richard H. Dalton, was paid off at this port on Saturday. Previous to separating, the ship's company presented a testimonial to Mr. William Henry De Carteret, clerk in charge of the vessel since she was put in commission on October 18, 1848. The testimonial is a large massive silver snuff-box, on which is engraved:—"Presented to William Henry De Carteret, Esq., R.N., by the ship's company of the *Rifleman*, as a testimonial of their gratitude for his truly gentlemanly demeanour and exemplary character, during the long and eventful period of the ship's commission. Woolwich, April 9, 1853." The ship's company at the same time presented to Mr. Carteret an address drawn up by one of the seamen, and printed on white satin; and the following shows how strongly they can express their sentiments when separating from those in authority over them when they have been kindly treated by their officers:—

"Dear Sir,—The long-wished for period arrives that we must separate; and, after a period of more than four years, we feel that we should be unworthy the name of men if we witnessed your departure in silence. The devoted attachment of the British seamen to their officers is one of the good and remarkable traits in the character of our countrymen; but seldom has it happened, as in your case, that this attachment has been secured by such a rare combination of qualities eminently calculated to win the esteem and affection of all on board. We are not more at a loss to find language to express our gratitude for your truly gentlemanly demeanour than to speak adequately of the zeal,

ability, and efficiency with which you discharged the onerous duties entrusted to you whilst amongst us. In our bidding you farewell, we feel we have parted with the lenient officer, the courteous gentleman, and the sincere friend. Though convinced that no lasting testimonial is required to keep alive and foster that cordial affection which has for so long a period existed between you and us, yet you will confer on us a favour never to be forgotten by accepting the accompanying gift, as a slight and very inadequate token of our esteem. Dear Sir, in bidding you an affectionate farewell, we sincerely hope that the same zeal, prudence, and manly bearing which characterised your conduct in the *Rifeman*, during the long and eventful period of our commission, may continue to mark your career until your earthly labours are crowned with glorious immortality."

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory
From the 21st of March, to the 20th of April, 1853.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer In the shade.				Wind. Quarter. Strength.				Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
21	M.	29.79	29.73	35	38	29	39	SE	NE	1	2	os (2)	o
22	Tu.	29.86	29.84	32	38	28	40	N	N	2	4	os (2)	bcps (3) (4)
23	W.	29.84	29.82	33	35	29	37	NE	NE	3	5	qos 1) (2)	bcps (3)
24	Th.	29.75	29.77	33	34	28	38	NE	NE	3	3	bcps (2)	bcps (3)
25	F.	29.86	29.90	28	36	20	38	NE	NE	2	2	b	bcps (3)
26	S.	29.96	29.96	31	38	21	39	NE	NE	3	3	b	bc
27	Su.	30.06	30.00	34	43	25	47	W	NW	1	1	o	opr (3)
28	M.	30.14	30.14	40	46	30	48	NE	NE	1	1	bc	o
29	Tu.	30.14	30.10	34	45	25	47	E	E	3	3	b	b
30	W.	29.80	29.78	38	51	29	52	SE	SE	2	2	b	bc
31	Th.	29.74	29.66	43	54	36	55	SW	SW	2	4	b	bc (4)
1	F.	29.36	29.38	48	55	43	56	SW	SW	5	5	qbcpr (1)	qbcprh (3) (4)
2	S.	29.66	29.76	46	58	39	54	W	W	3	4	bc	bc
3	Su.	29.76	29.66	48	50	43	51	SW	SW	5	5	qor (2)	qbc
4	M.	29.72	29.77	51	58	45	60	W	W	3	2	bc	bc (4)
5	Tu.	29.80	29.88	53	58	49	59	SW	W	2	2	or (1 2)	o
6	W.	29.95	29.92	55	57	47	60	SW	SW	3	3	o	bc
7	Th.	29.81	29.77	51	56	48	57	SW	W	3	4	o	bc
8	F.	29.84	29.88	44	44	37	45	NW	N	4	4	bc	bepthr (3)
9	S.	30.28	30.30	38	45	33	46	N	N	4	4	bc	bc
10	Su.	30.06	30.10	44	53	40	54	NW	NW	3	3	or (1)	o
11	M.	30.16	30.13	48	54	33	55	W	NW	2	3	o	bc
12	Tu.	30.00	29.94	48	51	42	52	N	NW	4	4	bc	bc
13	W.	29.90	29.96	40	42	37	45	NE	NE	5	5	qbcprh (2)	qbcprh (3)
14	Th.	30.01	29.99	42	48	32	49	N	N	4	4	bc	o
15	F.	30.13	30.14	44	47	36	48	NW	NW	2	1	o	o
16	S.	30.12	30.10	48	51	42	52	NW	NW	2	2	o	o
17	Su.	30.13	30.11	51	56	43	58	W	W	2	2	bc	o
18	M.	30.10	30.07	52	58	47	59	W	NW	1	1	bcn	o
19	Tu.	29.95	29.89	52	56	42	60	SW	SW	1	3	o	or (4)
20	W.	29.78	29.82	47	51	40	52	NW	NW	2	2	bc	bc

March, 1853.—Mean height of the barometer = 29.886 inches; mean temperature = 37.9 degrees; depth of rain fallen, and snow melted, = 1.18 inches.

TO CORRESPONDENTS.

We have again been compelled to postpone our Bottle Papers. But we still hope to take them up in earnest in our next.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

JUNE, 1853.

COMMERCIAL REGULATIONS OF RIO DE JANEIRO.*

All ships on arrival at Rio de Janeiro ought to pass within hail of the Fort of St. Cruz, and then steer on until nearly up with Fort Villedeganhon, before arriving (abreast of which they must anchor, otherwise they will be fired at, and fined for breach of the port regulations. The price of the first gun is seven shillings, of the second fourteen, of the third, which is a shot, three pounds. You remain quiet until you are visited by the health boat, to the officer of which you deliver all letters and papers without exception, consignees' letters and all, as your ship is fined should any be found on board after that officer has left.

Should you receive pratique, hoist the ensign at the fore-topgallant-mast head as a signal to the guard mor and the interpreter, who are next to visit you. To the guard mor you deliver all samples on board it is possible to get at; of those samples you cannot get at, a list must be given to the guard mor, and you must enter them in your manifest if not already there.

At the time of the guard mor's visit, you must deliver to him a list of any alterations, additions, or otherwise you have to make in your manifest; and if you have any private venture, which is not to be

* In a former volume will be found some information on this subject; the following shows the present mode of managing mercantile affairs at that place.—E.D.

smuggled, it must be inserted in the manifest at the time of the visit, if it has not been done so before.

The fine for each article found on board not on the manifest is one hundred milreas, the seizure of the goods, and half the value the Custom House chooses to set on it, that is supposing there is no attempt to smuggle, the goods being landed at the Custom House wharf in the usual manner; besides which the merchant who owns the goods comes upon the ship for their selling value at Rio de Janeiro, which from custom has become law, although I believe, strictly speaking, by the English law he can only claim the invoice cost, less the freight.

Should any package be on the manifest but not on board, the ship is fined in the same amount as if it was on board but not on the manifest. It is therefore very necessary for the shipmaster to examine well his manifest prior to signing it before the Brazilian Consul in England, and not to trust to the broker's clerk that it is all correct. As a general rule, and to be on the safe side, it is best to have every package, samples and all, manifested; the fine for each package of samples found on board not on the manifest, after the guard mor leaves, is £12 10s.

When you receive permission to go up the harbour, which the guard mor gives you on leaving, hoist the ensign at the main-topgallantmast head, and proceed up to the merchant's road, which is between the islands of Cobres and Enchanted, and inside the large buoys which have a pole and a large A for a vane upon them, mooring N.E. and S.W., rigging in your jibboom and studdingsail booms; whilst there you keep a light burning from 8 P.M. until daylight, under a fine of ten milreas a night for every omission, and keep an anchor watch. There are no Custom House officers on board, nor are your hatches sealed, at least the English ships seldom are, but French, Spanish, Portuguese, and Austrians generally are. A strict watch is however kept from a Custom House ship moored a little outside, and two guard boats are constantly rowing amongst the ships night and day; besides which the shores are well watched, so smuggling is rather difficult, and has some risk attached to it.

Your consignee manages the Custom House business; he generally puts you into the hands of a broker, who divides the commission of three per cent. on your gross freight outwards. You cannot do the ship's business yourself, as the law requires a sworn broker to translate your manifest copy, your list of stores, &c.

In your list of stores for the Custom House, it is requisite to be very particular and insert everything; the weight in pounds of bread, flour, sugar, peas, &c.; paint, oil, tar, pitch, &c., in pounds and gallons. Your ropes and spars also, more especially any new hawsers, new rope, and remnants. The canvas in bolts, and remnants in yards, are also required. It is better to apply to keep your paint and such small stores on board, and pay the duty, for if they are landed, the chances are you find the duty has been taken out of them by the Custom House, or, in other words, half of them have been stolen. Any pigs,

poultry, or other live stock, must be inserted, and also your own cabiu stores. If on arrival from any accident, such as the provisions for the return voyage being under the cargo, or anything which may prevent their being landed within the time specified in the harbour regulations, full duty must be paid on them, which is thirty per cent. on Custom House valuation.

The harbour regulations will have been given you at the time of your arrival by the guard mor; they are in Portuguese, French, and English. They must be returned when you leave the port, or you have to pay four milreas for them as a fine. No notice is given with them that they are to be returned, or the fine levied. It is best to be particularly attentive to the regulations, the Custom House boats pulling about note every infringement of them, and on leaving (not before) you find out to your cost what you must pay. You are never warned of any mistake committed, but find it noted against you when you come to clear out. The vessel is never clear of fines until she is outside the fort of St. Cruz. An American ship whilst I was there had cleared the Custom House, and was leaving the harbour; it fell calm, and the tide running strong, to prevent fouling a Brazilian man-of-war she anchored, ran a warp out to a buoy, cleared the man-of-war, and with her boats got to the proper anchorage for merchant shipping. Because the vessel anchored in an improper place, she was not allowed to proceed to sea until the fine had been paid, although the master of the vessel brought evidence to prove had he not anchored he must have fouled the man-of-war, and that he weighed as soon as possible. When he paid the fine he was suffered to proceed.

You are required to have buoys on your anchors; although it is not mentioned in the regulations, the fine is enforced if they are not on. A vessel from Europe generally has to wait some days before she comes on turn for discharging. There are two ways of discharging; one by hauling alongside the Custom House wharf, which is the quickest way if there are many vessels in port, as you can discharge from thirty to forty tons measurement goods every day, working from 9 A.M. to 2 P.M. But the drawbacks of the Custom House wharf are, first, almost all your crew get sick if it is between January and July; second, there are no drains or sewers at Rio, and the whole filth of the town is emptied every evening close to you, quite enough to give you the fever were you ever so strong. Thirdly, you have no breeze, either land or sea.

Provided it is not the sickly season, it is decidedly the quickest and cheapest way, but not the most agreeable.

The other way is to discharge in lighters. Permission is given to have a discharge in lighters, which will cost you, fees and all, thirty-five shillings a lighter. The Custom House guard comes off a little before twelve at night; you commence working at twelve, so as to get your lighter loaded a little before daylight to be at the Custom House wharf first, for the first come first served. They seldom discharge more than three lighters a day, so if your lighter should be at the wharf but not discharged, the goods are at your risk, and you must

send your own men to watch all night in the lighter, besides paying a demurrage of thirty-five shillings a-day for the lighter. You provide people to sling the goods, and the Custom House hoists them up.

A lighter of dry goods must never have butter, iron, crates, or provisions mixed with it; nor ought a lighter of crates to have anything but crates, iron nothing but iron, provisions nothing but provisions, for they have to go to different wharfs at the Custom House, and you will be in high favour if you can get a discharge at two different wharfs the same day. The goods destined for each wharf must go in a lighter by itself.

Before landing crates it would be advisable for the master of the vessel to see the owner, and get him to pass them through the Custom House, otherwise, though you bring them to the Custom House wharf, they will not be discharged. I have known crates to be in a lighter for three days owing to the merchant's negligence, and the ship paying demurrage for the lighter the whole of that time. If you want to save time or money, it is useless to think of discharging in your own boats. Iron is a nasty thing to land, so are pipes for water, gas, &c. I would strongly advise all masters of ships coming to Rio to get as much stone ballast in England as they can. Return cargoes for English ships are seldom to be had at Rio de Janeiro, owing in a great measure first to the badness of the English market for Rio coffee; secondly, that merchants can get their insurance done cheaper in an American or North of Europe ship than an English one by about two per cent.; thirdly, to the prejudice against English shipmasters in general at that port. English ships have to go seeking, and ballast averages four shillings and sixpence a ton English.

The Custom House is a nest of bribery and corruption, much less so than formerly. The present head is trying to weed it out as much as he can, but he has no one to second him in the establishment; the present officers do not like his efforts at reform. He was a member of the Chamber of Deputies, and in his place was always speaking of the way the Custom House was managed, what he would do if he was there, &c. At last the ministry, taking him at his word, appointed him to the head of it. He has greatly improved the revenue and Custom House; but though the facilities for discharging are more, and the duties better looked after than formerly, the merchant does not get his goods quicker than in the olden time, being sometimes a week or more after he has paid all duties before he can get them; and in many cases cannot find them at all, especially if by any accident any of the marks get defaced, in which case the merchant has great difficulty, the Custom House authorities generally asserting they belong to some person else, and after the search has died away selling them for their own benefit. But I need not mention in this paper the various disputes between the merchants and Custom House, except as far as concerns ship masters.

The present head of the Custom House wishes to prevent bribes being given to officers of various grades, and has procured a law imposing fines without number should any be discovered. It is impossible

to get on without bribing, and the ship which says I will not bribe, will be a marked ship, suffer no end of fines, and have every obstacle thrown in her way. I was told by one of the first brokers there, he had when this inspector came into office tried to do according to the strict letter of the law. He found he could scarcely get a discharge of goods from a vessel, and his vessels on the average were fined forty pounds each, whereas before they were scarcely fined more than two or three; his business was going away from him, so that he was obliged to return to the old system and give bribes as usual, in fact rather heavier, to make up for his attempt at honesty. In most ships' accounts the bribes may be put down at from ten to fifteen pounds, and are regularly divided amongst the officers, according to a well understood scale. In addition to which, the guards who attend at the discharge of your cargo, have to be bribed with two dollars, or four milreas each if made in the night, and two milreas if in the day.

Should the shipmaster, in a fit of virtuous indignation, say, "I will not give the extra money, I will not bribe," it is all up with the poor deluded individual. His ship's broker, in self defence, gives notice to the Custom House authorities that they will not receive their usual fees, and they annoy the shipmaster in every way. It is little or no use his appealing to the Consul for his assistance or protection. He only says, "Pay the money under a protest, and it will be investigated hereafter." When the poor man has been in his grave some twenty years a decision may come up, but not before. The amount is placed to that laughable farce to all but the sufferers, viz., "*Unadjusted British claims on the crown of Brazil.*" A most unjust law at the Rio Custom House is, charging a per centage on any freight the ship may be fortunate enough to get from Rio. Should the master refuse to declare the amount, the penalty is somewhat great.

Should you get into any trouble, as a general rule, instead of going to the Ambassador or Consul, go to your consignee or broker, and he will bribe you clear; it is the only plan.

Coals or salt are a very good cargo to bring from Europe; you can discharge them every day, and work your own hours.

The merchants in England generally insert in the charter parties the ship to be consigned to charter's agents inwards and outwards, and to pay the customary commission. I would recommend that clause to be erased, for the merchant must put you into the hands of a broker, with whom he divides the commission. Now the shipmaster might as well have half the commission for doing nothing as the merchant, the more so as no other broker but the one into whose hands the merchant places the ship will offer the vessel a freight; whereas if the master is not shackled down to any particular broker, all will try to get him, in preference to a ship that can only charter through them. The one that is not tied down, if they can fix him, it is so much more profit. As a rule in Rio de Janeiro, it has been noted, those ships get the best freight out from the port that are not consigned.

After the vessel has been discharged and jerked, the ship's stores are allowed to come on board, nor is there any duty charged upon them.

To sum up all in a few words, if the shipmaster cannot get a charter

to any other port of the world, go to Rio; but if there is a charter open anywhere else, give that the preference. Bear in mind at Rio return cargoes are difficult to be had, (almost impossible,) and the expenses are seldom under a pound a ton, registered tonnage.

An article in the *Nautical Magazine*, under the head, Directions for the Harbour of Rio de Janeiro, states, (I write from memory, not having the book by me,) "Vessels calling at this port for repairs or refreshment, are allowed to enter into franqu without payment of port charges." This statement requires to be modified a little. It should be, they are not required to pay anchorage dues only. The charges actually incurred by a brig of 260 tons, which vessel expected to pay nothing, are these:—

	Milreas
Bribes to Custom House Officers	24 320
Fees for visit on board on arrival	7 200
General despatch	2 000
Hospital fees	10 400
Secretary's fees for ship's pass	10 240
Seals to official documents	8 960
Corretagem	10 000
Entry and clearing ship.....	25 600
Total	98 720

I am, Sir, &c.,

A MASTER MARINER.

To the Editor of the Nautical Magazine.

STEAM ON THE INDUS.

[A Correspondent has obliged us with the following extract from the *Scindian* of 19th of February last.—ED.]

In an endeavour to redeem the promise made in a previous issue, we proceed to lay before our readers in the first place the rules published by the Government of India relative to what is denominated the "permanent establishment of steam communication on the Indus."

RULES.—A regular communication by the Government steamers has been established on the Indus, between Kurrachee and Mooltan, for the conveyance of passengers and merchandize.

At present a steamer will leave Kurrachee about the 24th of each month, or 48 hours after the arrival of the steamer from Bombay.

Another will start from Mooltan on the 4th of each month. Passengers by this vessel will reach Bombay on the 26th or 27th, in time to proceed by the mail steamer leaving for Suez on the 3rd of the following month. Any alteration in these dates will be duly notified.

Except on occasions of public emergency, the Government vessels appointed to maintain the regular communication between Kurrachee and Mooltan, shall so far be reserved exclusively for private passengers and merchandisc; that such private passengers and merchandisc shall invariably have the preference; and thereafter any vacant tonnage or

accommodation which may be left, shall be available for Government stores or passengers.

There are three classes of passengers entitled to mess with the Commander. The charge for the first class, who have a comfortable cabin, is five annas; for the second class, who sleep and dress in the saloon, three annas; and for the third class, who sleep and dress on deck, two annas per mile; or for the passage from Kurrachee to Mooltan:—1st class, 250 Rs.; 2nd class, 150 Rs.; 3rd class, 100 Rs. And down from Mooltan at two-thirds the upward rates, viz.:—1st class, 166-11-0; 2nd class, 100-0-0; 3rd class, 96-11-0.

Deck passengers, providing their own food, half an anna per mile. If Europeans, they can mess with the warrant officers on paying two Rs. per diem.

Children who do not sit at the cabin table one anna per mile, and those in arms free.

Each cabin and deck passenger is allowed one servant; all others will be charged for as deck passengers. 1st, 2nd, and 3rd class passengers are allowed half a ton, or twenty-five cubic feet of baggage. Children four cwt.

Deck passengers, one roll of bedding and a box, solid contents not exceeding five cubic feet.

A public table is provided by the officer in charge, at four rupees per diem for each person, exclusive of wine and beer, which if provided by the Commander are charged at regulated prices, of which a list is exhibited in the dining-room.

Children from six to twelve years of age two rupees, and those under the age of six, not in arms, one rupee per day; the same charge is made for a Christian servant. Mussulman servants three annas per day; Hindoos provide their own food. The passage money must be paid on engaging a passage, and half the amount of table money for the estimated time of voyage; the whole of the latter and half of the former will be forfeited by persons relinquishing a passage after having engaged one.

Freight on all packages conveyed up river, excepting treasure, which does not exceed twenty-nine pounds per cubic foot, will be charged by the cubic foot at the rate of two and a quarter annas per cubic foot per hundred miles. Those exceeding twenty-nine pounds per cubic foot will be charged for by the pound weight, at the rate of five annas per maund of eighty pounds per every hundred miles.

	Per Cubic Foot.			Per md. of 80 pds.		
	Rs.	As.	P.	Rs.	As.	P.
From Kurrachee to Beacon	0	2	3	0	5	0
Ditto ditto to Tatta	0	3	7	0	8	0
Ditto ditto to Haidrabad	0	5	2	0	11	6
Ditto ditto to Sehwan	0	7	8	1	0	6
Ditto ditto to Larkana	0	9	11	1	6	0
Ditto ditto to Sukkur	0	11	3	1	9	0
Ditto ditto to Chacher	0	14	10	1	1	0
Ditto ditto to Bukree	1	0	2	2	4	0
Ditto ditto to Mooltan	1	2	0	2	8	0

Freight on goods conveyed down-river, one-third the up-river rates. Government will not be responsible for any loss or damage after the goods have been delivered to the consignee or order; nor for loss or damage which may occur from accident of the vessel; or other causes whatever not traceable to negligence or mismanagement.

Specie or bullion will be conveyed up or down river at the rate of one anna and a half per cent. per hundred miles, and whenever the distance exceeds the even hundred, freight will be charged for the even hundred next following. Thus from Kurrachee to Haidrabad is 230 miles, the charge will be for 300 miles.

Copper coin will be charged for at the up-river rates of weightable goods. The distances between the stations and towns on the banks of the river are as follows:—

	Miles
From Kurrachee to the Beacon at the mouth of the Kedywarree -	100
Ditto Beacon to Tatta - - - - -	60
Ditto Tatta to Haidrabad - - - - -	70
Ditto Haidrabad to Sehwan - - - - -	100
Ditto Sehwan to Larkana Ghat - - - - -	100
Ditto Larkana to Mikuutote or Chacher - - - - -	160
Ditto Chacher to Bukree, the junction of Sulej with Chenab -	60
Ditto Bukree to Mooltan - - - - -	80
<hr/>	<hr/>
Total from Kurrachee to Mooltan - - - - -	800
	<hr/>

The communication will be maintained by three new iron boats, in which the available accommodation will be three cabin, and six saloon berths.

There are steam agents at Mooltan, Sukkur, Kotree, and Kurrachee, from whom all further information can be obtained.

By order of the most noble the Governor General,

(Signed) H. M. ELLIOTT,

Secy. to the Govt. of India with the Governor General.

The Indus Flotilla comprises the following:—

STEAMERS—*Planet, Satellite, Napier, Conqueror, Meanee, Meteor, Nimrod, Assyria, Indus, Jhelum, and Chenab.*

FLATS—*Beas, Sulej, and Ravee.*

Excepting the *Indus*, the engines of which are a hundred horse power, and the *Nimrod* and *Assyria* of forty each, others are of sixty horse power; the *Chenab* and *Jhelum* are the only two that are pressed high. Of these iron steamers, the *Planet* and *Satellite* have been on the river ever since 1842; they were originally intended by all accounts for the Rhine, or some other river on the continent of Europe; the East India Company, however, were induced to purchase their sections, and have them put up in the dockyard at Bombay for the Indus. The next three, the *Napier, Conqueror, and Meanee*, came up between 1844-45. The *Nimrod* and *Assyria*, originally intended for, and at one time on the Euphrates, were sent down about a couple of years ago to Bombay, where they were lengthened twenty feet, and then transferred to this flotilla. The three last are new

boats, and though the *Indus* is considered a sort of yacht in preference to the *Meteor*, she is generally employed as a tug to some one of the flats, the *Chenab* and *Jhelum* being also used in the same way. The two last have of late been specially put on the line between Kurrachee and Mooltan for the couveyance of goods.

Most of these steamers are too old for any service. The *Conqueror*, for instance, was in that condition the other day that with every foot of water she gained, the blacksmith's forge was in constant requisition; she is said to require thorough repair, so that until next season her services are wholly lost. In the anxiety to maintain a steam communication on the Indus, the peculiar characteristics of the stream do not seem to have been consulted in the construction of these particular steamers. The Indus, unlike most rivers, does not run in one uniform bed, but spreads itself over a vast plain, forming two or three channels of various depths. Parties competent to express an opinion, urge in consequence that the draft of water of these steamboats should never exceed three feet for either high or low water, and that the steam pressure should always be high.

All these steamboats are considered tenders to the *Mootnee*, the flag-vessel at Kotri, and therefore fly a pennant.

At Kotri, almost opposite to Hyderabad, with the river only across, are the head quarters of the flotilla; the residence of the Superintendent, a Captain in the Indian navy, a purser and clerk also drawn from the service, an accountant on two hundred rupees a month, and an establishment of writers and other subordinates. There is a steam agent at Mooltan, a Lieutenant of the Indian navy; at Sukkur, a conductor either of the Indian navy or of the Commissariat who officiates as agent; and an agent at Kurrachee not otherwise connected with Government.

The steamboats are officered by masters attached to the Indian navy, who wear the uniform of the service, are amenable to the articles of war, who may be dismissed at a moment's notice, who when sick are allowed three months' leave with pay, and then may trust to Providence—who possess no privileges, and cannot even look forward to the pension granted to a superannuated clerk. These masters have been drafted from the mercantile fleet; those who joined originally, did so in the hope of being brought on the effective strength of the Indian navy, that they would rank with Lieutenants, be entitled to prize money, and in old age, or with a decrepitude arising from climate or other unforeseen calamity, have pensions; in fact, be placed upon the footing of their brethren in the Royal service. The establishment of Masters comprises two classes, both in an acting capacity; *first* masters on a salary of one hundred and fifty rupees a month, with an additional hundred while running, and *second* masters on rupees one hundred the year round. Of the latter denomination there are not more than three or four on the Indus, so that a single European in most cases if in command of one of our flotilla, has to navigate, to keep the log and ship's papers, receive and discharge cargo for which he is responsible, to mess passengers as well as to show them attentions—

for which last service only we believe the Peninsular and Oriental Steam Navigation Company allow their skippers *a guinea* a head as courtesy-money as it is called. The fact is, that as at present organised masters remain in the service under circumstances truly disadvantageous to themselves, and their stay we fear must be attributed rather to compulsion arising from pecuniary circumstances than aught else. A Bombay paper in noticing that only one of Messrs. Green's officers had ever joined the service, and left it shortly afterwards, if intended to show anything, it must be that there is no inducement, now that the phantom of expectations has dissolved, for men of energy to join when they can find a better market elsewhere. We have now before us a lamentable case, of one of these masters who was obliged to go home owing to ill health, in fact sent home by squadron orders issued at Bombay. He reported himself at the India House, and was told that they knew nothing of him. A fortuitous circumstance permitted his coming out in one of the Company's steamers, and when he appeared at the Navy Office he was brought *again* on the effective list, upon application and after proper representation; was there no need of him, he would have had to try his hand at something else. If these representations have not already been honestly and respectfully made to the Commander-in-Chief of the Indian navy, for the consideration of the authorities—for we feel assured that any such document, from what we hear, Captain Ethersey, the Superintendent of the flotilla, would not hesitate to transmit; if listlessness, apathy, unconcern to their own and best interests have marked this branch of the Indian navy; if they believe themselves to be aggrieved, wrongly situated, and not fairly supported for labour—trying labour in a trying climate—the masters have only themselves to blame. If they will not strive and gain something, they richly deserve their present nothing. The very engineers employed in the boats which the masters take in charge have covenants with the Honourable Court, can obtain leave to Europe on medical certificate or furlough, and enjoy a pension after a prescribed period of service. Surely the masters do not suppose that Government will not listen to some sensible appeal from those servants of the state who work as well! Passing strange to find, that if these said masters are amenable to the articles of war and every other infliction of the navy, they should not possess some of the advantage!

So much in as far as a war service is concerned, the Indus flotilla showed what it could do when required in the actions of the gallant and the brave Sir Charles Napier.

For what is this Indus flotilla then maintained? As a political measure we do not deny its value nor its merits, such as they be. If, however, many of the alarms once felt, and which could operate to our detriment, no longer exist; if the Indus be the highway of commerce, and the channel of good will and friendship to Central Asia; if it be all that its best friends and the friends of civilisation deem as the speediest means of communication and transit between the Punjab and Scinde, Western India, nay, Britain herself; if as the speediest it ought also to be comparatively the cheapest and least uncomfortable

means of gaining the sea-board, then surely some other system is demanded—machinery less complex, less expensive, and less vexatious.

Reverting to the rules quoted in the opening of this article, we find the Supreme Government declare in broad and distinct terms, "A regular communication by the Government steamers has been established on the Indus between Kurrachee and Mooltan for the conveyance of passengers and merchandise." In the last paragraph but one of these rules we find that "the communication will be maintained by three new iron boats." The fourth paragraph runs thus:—"Except on occasions of public emergency, the Government vessels appointed to maintain the regular communication between Kurrachee and Mooltan, shall so far be reserved exclusively for private passengers and merchandise, that such private passengers and merchandise shall invariably have the preference; and thereafter any vacant tonnage or accommodation which may be left shall be available for Government stores or passengers." All this is very solecistical. Were it not for the *three*, we should suppose all and any one of the steamboats of the Indus flotilla intended for the service as necessity occasioned; and the *three* we are even now inclined to believe as added to the previous number to promote the object intended. Again, the phraseology of the fourth paragraph, "except" as applying to public emergency with reference to private passengers and merchandise, and these with the invariable preference only show that private passengers and merchandise must as a matter of course *always* proceed by these steamers. There is nothing exceptionable beyond the loose phraseology, the drift of which we take to be the paramount claims of strangers and merchandise to transport over those who claim the right from mere official consequence. We may be wrong, but this is our view. If this view happen to be correct, we would wish to know why so much callousness as much as carelessness has been exhibited in maintaining this important undertaking. If the Government of India do not hesitate to build and lay on steamers for such an express purpose, the servants of the state cannot be above carrying out faithfully and fully the wishes of that state. The farce of a couple of epaulettes of bullion shipping and taking delivery of packets, parcels, and bales, is too monstrous to admit of a moment's consideration. *Par parenthese* we cannot help admiring the spirit of the Indian navy officer who preferred his two hundred and fifty to five hundred rupees a month, rather than be plagued with such work. The fact is, that an agency of the kind requires training and qualifications which no epauletted man ever possessed. There is tact, patience, courtesy, and forbearance, which he can never bring into play; there is calmness, determinedness, and knowledge of human kind, that he never can and never will know. Under other circumstances, and at the presidencies especially, men would not dare to *think* as they *act* here. We attribute it either to ignorance or impertinence, which their Government would not hesitate to censure. If a man be paid, he is paid for something; and the screen of official position will avail him nothing. What would the very natives of Bombay say, if they heard that goods which had left

Sukkar on the 23rd of November last, arrived in Kurrachee on the 28th January following; a voyage of a fortnight for the most unfortunate steamer taking more than two months. In this case the goods were shipped on board of the *Meteor*, and arrived in our port in the *Nimrod*! In the interim two steamers came nearly empty. Pretty pass this, if individual caprice is to sacrifice the interests of a young, vigorous, and, under God, a rising province. In the theatre of events Scinde is destined to play no mean part; and if we are to further things, it must be with that becoming spirit which men who have and know responsibility will further them. If, however, the present system is faulty, it can be remedied, and most readily. On the banks of the Indus must commerce not only be maintained, but fostered; and elements there are for manipulation, not only equal to the emergencies but exigencies of the case. Government have only to sift matters, and we promise an investigation that will lead to most important consequences before the next season opens.

For the sake of mere argument. Why should not Kurrachee be the principal port for these steamers—the wishes of the mercantile community met as to information on the score of manifests, receipts and deliveries of cargo, the probable periods of arrival and departure of each vessel, and the likely time to sail of any extra vessel laid on? Why should not those less capricious, and not above undertaking duties of the kind, be engaged—those, too, who would work on cheaper terms, and certainly in every sense more profitable to the state?

THE ISTHMUS OF DARIEN.

Extract from the Remark Book of Mr. George Peacock, when Master of H.M.S. "Hyacinth" in the West Indies, in 1831 and 1832.

There is not a more interesting part on the face of the globe than the narrow neck of land dividing the two great continents of North and South America and the Atlantic and Pacific Oceans, and it has long been a desideratum among scientific men to ascertain the best point on this comparatively narrow strip, where a communication might readily be made between the two great oceans. Its discovery as an Isthmus was made by Vasco Nunez de Balboa, an enterprising Spanish captain, who after Ojeda, about the year 1500, had founded a colony, by order of King Ferdinand, at the head of the Gulf of Darien, named Sta. Maria de la Antigua, was appointed Governor of this settlement, and the important information was imparted by a Cacique, or Indian Chief, who conducted him in 1513 to the shores of the great Pacific ocean, and told him of a country lying to the south abounding in gold, meaning Peru; and no doubt this spirited officer would have gone in search of this land of promise but for his untimely and ignominious end, he being hanged by the new Governor of Santa Maria, who superseded him from Spain, through a jealous and envious feeling of his

superiority, and it was left for one of his officers, Francisco Pizarro, to carry out this daring enterprise some ten years afterwards.

It appears that the Spaniards never made head against the tribes of Indians inhabiting this portion of the Isthmus, and very soon after the discovery of the Pacific Ocean withdrew to that coast, where they founded the new colony of Panama, and abandoned Santa Maria.

About the middle and towards the close of the seventeenth century, bands of lawless desperadoes, chiefly composed of French, Dutch, English, Welsh, and Scotch, fitted out private piratical expeditions against the Spanish colonies. These men were called buccaneers, and they made themselves very formidable, both by land and sea, to the Spaniards. In the year 1670 Panama was attacked by one Morgan, a Welshman of good birth, afterwards knighted and made Governor of Jamaica, who plundered and burnt the city, inducing the colonists to abandon the site and build the present city some three or four miles further to the westward, on a spot better adapted for defence.

It would seem that other celebrated British buccaneers, namely, David, Peter, Samms, Wilney, and Towley, who committed such ravages and robberies on the whole of the Spanish settlements then existing in the Pacific, made the harbour of Darien, in the Gulf of St. Michael, their head quarters for refitting and careening their ships, and being well acquainted with all the harbours in the Gulf of Darien, probably having also formed alliances with the Caciques of this province against their common enemy, were in the habit of crossing frequently from shore to shore with the spoils of the Spaniards; and there can be little doubt but that most of these men and many of their followers were well acquainted with the shortest and easiest routes across the Isthmus, and upon their returning to spend their declining years in their native land furnished such private information to a Mr. Paterson on this head as induced him to set a project on foot, and obtain a charter about the close of the seventeenth century, to establish a colony upon the Isthmus of Darien at the nearest and best points for an easy transit between the two great oceans, *and thus open up a new route to the East Indies*. And had it not been for the jealous machinations of the East India Company, and the narrow minded and ignoble conduct of the British Parliament at that time, there is little doubt but that a most valuable colony would have sprung up, and in all probability a ship canal cut from one ocean to the other.

This was doubtless the great object Paterson had in view, as half a million of money was subscribed in Scotland alone towards the enterprise, and another half million in Holland and England, great sums in those days, which proves that his scheme was a sound and good one, and his information beyond all doubt. However it seems that the intrigues of the Spanish minister in London, and the British minister in Madrid, caused the Dutch and English to withdraw their capital, and instigated an expedition to be fitted out by Spain against the unfortunate colonists, shortly after New Edinburgh had been founded by the indomitable Paterson, with such means as he could collect. And they were attacked at a time when, chiefly for want of supplies, sick-

ness had broken out, and, together with sectarian feuds, had already begun to thin their ranks, and dissipate the whole community; and although they defended their new home with great bravery, they were at length obliged to yield, and were compelled to abandon the colony. Poor Paterson, whose mind was worthy of the great Columbus himself, having escaped with a remnant of his followers, being the last to linger on, as he was the first to embark for the shores of the new world, finding all his best hopes and fondest wishes thus frustrated, lost his reason, although he subsequently recovered, and projected a renewal of the enterprise. But the venom of jealousy and ingratitude had done its work; he suffered the fate which awaits too many men of great minds who are in advance of the age they live in, dying of a broken heart in poverty and obscurity, after having in vain endeavoured to obtain redress from the British Parliament upon the union of the two kingdoms taking place.

The spot fixed on for building the city of New Edinburgh is still called Port Escosces, or Scotch Harbour; it lies in latitude $8^{\circ} 50' N.$, and longitude $77^{\circ} 40' W.$ Dr. Wallace states that "this harbour is about a league in length from N.W. to S.E., half a mile broad at the entrance, and upwards of a mile broad within, and large enough to contain five hundred ships untouched from any wind that can blow. The fort stood upon a peninsula, so defended by rocks and precipices that a very little art could have rendered it impregnable. The soil being rich, the air temperate, and the water sweet, everything contributed to render it healthful and convenient, and a communication with the South Sea might easily have been opened from thence by the way of the River Darien* and the Gulf of St. Michael. The Scots thought themselves extremely fortunate in possessing this important agreeable situation, which they tell us the English, Dutch, and French never once discovered, and the Spaniards themselves even were strangers to it."

Captain Freeman, who has commanded a schooner called the *Mandeville*, belonging to Mr. Sheppard of St. Juan de Nicaragua, for some years, and has been trading along the shores of the Isthmus for tortoiseshell, informs me that he had been told by an Indian in the Gulf of Darien that water communication actually existed from ocean to ocean, in the rainy season, from the Gulf of Darien to the Gulf of St. Michael, by making one or two short portages, and that there were several natural passes in the ridges of the Cordillera, of but little elevation above the surrounding plains. The Indians of this part of the Isthmus, although a warlike race, are hospitable, generous, and inoffensive; they have never been conquered, and from all the information I have been able to collect from Captain Freeman added to what I glean from the voyages of Dampier and Lionel Wafer, and the Memoirs of Sir John Dalrymple, I am of opinion that this is the spot where a ship canal may be constructed between the two oceans.

GEORGE PEACOCK.

H.M.S. *Hyacinth*, off Point St. Blas, 8th Feb., 1832.

* Afterwards named Caledonia river.

P.S.—I have also been told that an Indian traversing the river Chepo came to a bend where he heard the roar of the breakers on the shore of the Atlantic through the woods, and it is not improbable but that some branch of the Chepo may extend or take its rise close to the shores of the Isthmus, near the Gulf of St. Blas. A good survey of this interesting country is much wanted.

G. P.

The following is an extract from an old book of Travels, edited by Mr. Salmon, and published in 1753, now in my possession. It was printed by "Richard Baldwin, at the Rose in Paternoster Row," and is a curious work.

"The Parliament of Scotland passed an act in the year 1695 for erecting a company to trade to Africa and the Indies, by which they were authorised to plant colonies and settlements in the East and West Indies under His Majesty's letters patent, which they also obtained; and both the English and Hamburgh merchants contributing very largely to this enterprize, they equipped several ships, which sailed with forces and everything requisite to plant a colony on or near the Isthmus of Darien in the year 1698. They landed first on Golden Island, at the mouth of the river Darien, but not liking the situation, they went over to the continent and built the fort of Edinburgh, with the permission of the natives, calling the country which the natives assigned to them to plant and cultivate, New Caledonia. That part of the Isthmus which the Indians, their friends, then possessed, the Scots inform us, extended along the North Sea, from the Gulf of Darien to Port Scriven (? Escribanos) on the North Sea, being about an hundred and forty miles; and from Caret Bay on the south-west part of the Gulf (? harbour) of Darien to the head of the River Chepo, about an hundred and fifty miles; the breadth in some places sixty and in others an hundred miles and upwards. The Indian Princes within these limits were eight at least, all of them at war with the Spaniards, and received the Scots into their country with a great deal of joy, in hopes of their assistance against their ancient enemies the Spaniards. The settlement went on prosperously at first, but the Spaniards complaining to the court of England, and declaring that they should look upon this as an act of hostility, Darien having been long subject to that crown, as they alledged, the East India Company also complaining of this settlement at the same time as an infringement of their charter, the English Parliament thought fit to interpose and address King William to recal his patent to the Scots Company. The Scots, on the other hand, sent up their agents to the court of England to represent that this was no invasion of the Spanish Dominions, because they were never possessed of that part of the isthmus, or if they were they had been driven from it by the natives, who were at that time in the actual possession of the country, and at war with the Spaniards, as they had been many years before the arrival of the Scots; but howmuchsoever the Scots might be in the right, such was the influence of the court of Spain and the English East India Company, that all measures were taken to ruin the Scots settlement.* The

English ministry prevailed on the Hamburglers to draw their money out of the stock, and the Parliament of England threatened the merchants of London who had any shares in it with their displeasure if they did not disengage themselves; and orders being sent at the same time to Jamaica and the English plantations in the West Indies not to suffer the Scots to furnish themselves with provisions there, or give them any assistance, our northern neighbours were unfortunately compelled to quit the enterprise, which we ourselves found reason to regret a few years afterwards. Another ill consequence this piece of injustice was attended with, was the making the Scots our enemies, and obliging us to purchase their friendship again at the expence of almost £400,000: and whether anything will perfectly satisfy them but the subversion of the English Constitution, is still a question. On the other hand the Scots offered to share the settlement with the English, and would have been infinitely obliged to them if they had encouraged and supported it; nor is there a spot of ground, it is agreed, on the continent of America, that could be of greater service to Britain."

Extracts from Sir John Dalrymple's Memoirs.

"The projector and leader of the Darien Expedition was a clergyman of the name of Paterson, who, having a violent propensity to see foreign countries, he made his profession the instrument of indulging it, by going to the new western world under pretence of converting the Indians to the religion of the old. In his courses there he became acquainted with Captain Dampier and Mr. Wafer, who afterwards published, the one his voyages and the other his travels, in the region where the separation is narrowest between the Atlantic and the South Sea; and both of whom, particularly the first, appear by their books to have been men of considerable observation; but he got much more knowledge from men who could neither write nor read by cultivating the acquaintance of some of the old Buccaneers who, after surviving their glories and their crimes, still, in the extremity of age and misfortune, recounted with transport the ease with which they had passed and repassed from the one sea to the other; sometimes in hundreds together, and driving strings of mules before them, loaded with the plunder of friends and foes. Paterson having examined the places, satisfied himself that on the Isthmus of Darien there was a tract of country running across from the Atlantic to the South Sea which the Spaniards had never possessed, and inhabited by a people continually at war with them; that along the coast on the Atlantic side there lay a string of islands called the Sambaloes, uninhabited, and full of natural strength and forests, from which last circumstance one of them was called the Isle of Pines; that the seas there were filled with turtle and the manatee or sea cow; that midway between Porto Bello and Carthagena, but nearly fifty leagues distant from either, at a place called Acta, in the mouth of the river of Darien, there was a natural harbour, capable of receiving the greatest fleets, and defended from storms by other islands which covered the mouth of it, and from enemies by a promontory which commanded the passage, and by hidden rocks in

the passage itself; that on the other side of the Isthmus and in the same tract of country, there were natural harbours equally capacious and well defended; that the two seas were connected by a ridge of hills, which by their height created a temperate climate in the midst of the most sultry latitudes, and were sheltered by forests, yet not rendered damp by them, because the trees grew at a distance from each other, having very little underwood; that, contrary to the barren nature of hilly countries, the soil was of a black mould two or three feet deep, and producing spontaneously the fine tropical fruits and plants, and roots and herbs; *that roads could be made with ease along the ridge, by which mules and even carriages might pass from the one sea to the other in the space of a day*; and consequently this passage seemed to be pointed out by the finger of nature as a common centre to connect together the trade and intercourse of the universe.

“Gold was seen by Paterson in some places of the Isthmus, and hence an island on the Atlantic side was called the Golden Island, and a river on the side to the south was called the Golden River, but these were objects which he regarded not at the time, because far greater were in his eye; *the removing of distances, the drawing nations nearer to each other, the preservation of the valuable lives of seamen, and the saving in freight, so important to merchants, and in time, so important to them.*

“On the 26th of July of the year 1698 the whole city of Edinburgh poured down upon Leith to see the colony depart, amidst the tears and prayers and praises of relations and friends, and of their countrymen. Many seamen and soldiers, whose services had been refused because more had offered themselves than were needed, were found hid in the ships, and when ordered ashore clung to the ropes and timbers, imploring to go without reward with their companions. Twelve hundred men sailed in five stout ships, and arrived at Darien in two months, with the loss of only fifteen of their people.

“Modest respecting their own and their country’s character, and afraid of being accused that they had plunder, and not a settlement in view, they began with purchasing lands from the natives, and sending messages of amity to the Spanish Governors within their reach, and fixed their station at Acta, calling it New St. Andrew, from the name of the tutelar saint of Scotland, and the country itself New Caledonia.

“*The first public act of the colony was to publish a declaration of freedom of trade and religion to all nations.* THIS LUMINOUS IDEA ORIGINATED WITH PATERSON.

* * * * *

“Of the colony not more than thirty saved from war, shipwreck, and disease, ever saw their country again. King William’s desertion of a company erected upon the faith of his own charter, and the English oppressions of it, were the reasons why so many of the Scots, during four successive reigns, disliked the cause of the Revolution and of the Union; and that dislike, joined to English discontents, brought upon both countries two rebellions, the expenditure of

many millions, and the downfall of many of their noblest and most ancient families. Men look into the works of Poets for subjects of satire, but they are more often to be found in the records of History.

LOSS OF THE BRIG MARY AT NATAL, WITH EARLY RECOLLECTIONS OF THAT SETTLEMENT.

(Continued from page 202.)

After a month's absence we had the pleasure of greeting our captain and shipmates, on their safe return from King Shaka's residence of Cemballilo. They represented the journey as very fatiguing, more particularly that of the first day, being for the most part along the sea beach, on a soft sand, tiresome both for man and beast; but after this first day's travel, on striking off the beach into the interior, the journey became interesting, the beautiful scenery through which they now passed, alternately changing from hill to dale, and on ascending a somewhat steep mountain side amply compensated them for their fatigue. Flocks of cattle widely scattered over the immense fields of rich pasturage, with the strange and novel appearance of the large circular "etangers" (cattle folds) interspersed throughout the country, gave the whole journey a degree of interest unexpected by the travellers. They arrived at the royal residence on the tenth day from their setting out from Natal, but having travelled by very easy stages, the distance, as they thought, did not exceed what it was represented to be, 150 to 180 miles. The native villages through which they passed, and wherever they halted, all vied with each other in supplying the wants of the travellers, and showing marked respect and attention; the largest and most commodious and comfortable apartments in the village being voluntarily and invariably given up to the king's white men. This attention and respect I have since had reason to suspect proceeded more from the fear of incurring the king's displeasure by any neglect, or complaint being made of their want of hospitality, than from any good feeling in general on their own part towards us. Yet among the Zoolas, hospitality to the stranger and wayfarer is very strikingly marked and predominant. Such a thing as the purchasing meat and drink on the way is utterly unknown, and it would be considered as inhuman and barbarous for any one to exact payment for food from a hungry traveller or a stranger who might happen to be on a visit in the neighbourhood. Hence the Zoola in travelling has no concern as to what he shall eat or drink on the way, knowing that he has an equal right with the invited guests to sit down and partake of the same banquet.

Our party were received by King Shaka in a friendly manner, but with that air of haughty indifference which might be expected from the Napoleon of Eastern Africa, before whom every one was prostrated. A hundred thousand warriors, whose victories had annihilated nations,

and had fought in fields saturated with the blood of their slain comrades, knelt at his feet, and to them his words were as the mandate of their deity. Our present excited neither pleasure nor curiosity. He received it with listless indifference, causing it to be thrown aside, and commenced a desultory conversation, asking questions of King George's dominions, if he had as many cattle and as many warriors as he had, expressing his wish to be on friendly terms with King George, and would give his white people every attention; repeating that if any of them gave them any offence or insult, he would kill them all, men, women, and child. "Yes," said he, turning to the chiefs around him, "do you hear me, 'Um Nauta,' (the name of his mother, by which he often swore,) I will kill, as sure as I am the son of a king;" to which the whole responded simultaneously, "Yeabo, Baba" (Yes, Father). "I wish," he added, "that there should be only two great kings in the world; that King George should be king of the whites, and I king of the blacks."

Captain King here met with a man named Jacob, who had deserted him on a former visit to the coast, at the mouth of the St. Lucia river. He had attached himself to one of the Caffer tribes on the frontier of the Cape colony, and like many others of his countrymen, in their marauding expeditions on the colonists, had been captured and transported to Robben Island, and at the intercession of Captain King and his friends, aided in a measure by his own good conduct and contrition, had been liberated by the authorities at the Cape, and joined the *Salisbury* as Interpreter, proceeding to the coast of Natal in that vessel with Captain King in 1823. While on shore, as I have before stated, at the River St. Lucia, a quarrel arose between him and one of the boats' crew, who cast up to him his former position as a convict. The man made his escape from the boat, and all search for him proving ineffectual, he was left on the sailing of the *Salisbury* on the coast of Natal. But being a cunning fellow, he succeeded in getting into favour with Shaka, having previously however suffered many vicissitudes and hair-breadth escapes, and from him there is no doubt the Zoola chief first learnt the white men's strength and numbers at the Cape colony. Jacob could yet speak a little English, and evinced his joy at meeting his old master by much kind attention to him and his crew. He impressed Shaka of his obligation to Captain King in delivering him from the white men's bondage, but carefully concealed his real crime from Shaka of stealing the white men's cattle, telling him that he had been made a prisoner of war, his countrymen having been vanquished by the whites, and that the latter never killed the enemy that fell into their hands, but shut them up in dungeons or in some solitary island, where they were detained for life; and it was through Captain King's intercession with a great chief, (by which he meant the Governor,) that he was liberated, but that many of his countrymen still lived in hopeless captivity.

This account of Jacob's to the king, though mostly false and incorrect, had the best effect. For with such a man as Shaka at the head of a nation, though himself a merciless tyrant, he was not blind to this

virtue when exercised by others. The same measure that he observed others to give, the same was invariably given by him to them. Indeed I have remarked this to be the great rule on which Shaka founded his ideas of justice, and the many bloody sacrifices he made of his own people, strange as it may appear, proceeded from this mistaken barbarous notion. Jacob had therefore unconsciously given him a favourable opinion of the white men, and in Shaka's reasoning, if they spared the lives of their enemies, how much more then ought he to protect them as friendly and unfortunate strangers.

As a proof of Shaka's sentiments and concern for us, I recollect his saying very seriously to me one day, "Jackabo, (the name he always called me,) if it was not for me I fear that there is scarcely an *umfogasann* (a common man, or an expression for the lower order of the natives) but would rejoice of having the opportunity to kill all my white people. Oh!" he continued, "they are a bad people; I am obliged to kill a few to gratify the rest; and if I were not to do it, they would think me an old woman, a coward, and kill me themselves. I have been often told by my *Indaba* (Council) to kill you wild beasts of *Moolongas*. How happy King George must be, as king of the white men, to me. I see and feel that you are a good and a superior people; a strange, a wonderful people. If I understood writing, I would write to King George, and tell him all that I feel, and what I think of the *Moolongas*."

Jacob had besides obtaining Shaka's friendship, received many head of cattle, and Shaka having changed his name to *Slamla Manzie*, (Swim the Sea,) or Great Swimmer, made him a petty chief, and the head of a considerable village, through which Captain King passed on his journey to Shaka.

Captain King took occasion to represent to Shaka the loss of his vessel, and of his intentions to set to work with his people and build another, soliciting at the same time his permission and assistance in the work, by allowing him to hire people to haul timber to the yard, &c. Shaka immediately gave his consent, and said, "I will send for *Motoban*, who is the chief of the people about Natal, and I will tell him that you are building an uncombic for me, to negotiate with my friend King George, and that I require him to send you all his people to bring the largest trees in the wood to your workshop for my uncombic, at any time that you may send and let him know you want them."

It was evident our party had made a favourable impression on the savage monarch, and from the moment of their intimating the intention of building a vessel, he continued to evince a lively interest in the work, and from that moment he determined on and planned the embassy to the Cape colony, which was ultimately effected by our taking to Port Elizabeth *Satoby* and suite, which, as will appear in the progress of these recollections, through the parsimony or indifference of the Colonial Government was a shameful failure.

Shaka seemed to entertain an absorbing interest in this mission; and appeared anxious and solicitous to have some certain and tangible proof from the British government of its friendly alliance; and I feel

assured he would have made a sacrifice of any minor consideration for this. His penetration convinced him of the vast superiority of the white man's mode of warfare in the use of fire-arms, and though his military genius had effected great improvement in the Caffrarian mode practised by his predecessors, he saw with all his improvements its disparity when brought in contrast with the musket. One day in haranguing his warriors in presence of Captain King and the sailors, on the subject of a contest with the white men, his warriors affected to despise the izee bann (musket), stating that when they heard it go off they could fall flat on the ground, and the missile would fly harmlessly over their heads; "and before they could load again," said they, "we should be upon them, and cut them to pieces." However on a bayonet being fixed on our people's carbines, they confessed that it now presented a more formidable implement of war. To test their boasting of courage to face the white men's izee banns, Shaka had privately arranged that three of our men should be posted behind a group of the most daring and loud declaimers of fire-arms, and at a signal given by the king the pieces were fired immediately behind their ears. The surprise and fear occasioned by the report caused the magnanimous warriors to fall prostrate on the ground, and terrified as they were they presented the immovable appearance of men actually shot, nor were they on their feet again until another party of attendants on the king, aware of the ruse, fell upon them with bludgeons to chastise them for their vaunting and cowardice.

The many sanguinary conflicts carried on between the Colonists and the Caffres on the frontiers, in which the latter were constantly and signally defeated, had no doubt been described to Shaka by Jacob, and perhaps exaggerated. The thought that his countrymen had often been mown down by European artillery like grass before the scythe, had no doubt induced Shaka to seek a secure and friendly understanding with the Cape colony. He wisely and truly foresaw that the time was not far distant when they would visit his country with their powerful and formidable engines of destruction. The cruel and bloody aggressions of the Boors on the Caffres, under cover either of defence or recovery of plunder, but really from malice and hatred, have engendered feelings of hatred and retaliation in the breasts of the simple and untutored natives, and has led to barbarities reciprocal and terrific, and raised feelings in the minds of the Caffres that will in all probability be long remembered and go down to posterity. At any rate, many years of kind treatment will be required to blot out the atrocities perpetrated by people professing the doctrines of Christianity, that are not paralleled in the records of the most barbarous nations.

It is worthy the attention, and the strictest surveillance of the British Government, to prevent the same abuses from being introduced into Natal, and no aggression or infringement of the native rights and interest in the soil should be tolerated; otherwise the same feelings will be engendered, which will lead to perpetual strife, and scenes of rapine and murder will follow in endless succession, until the whole of

the Aborigines become exterminated. The subtle arguments that have been adduced by civilised plunderers in defence of their aggressions and expulsions of the Aborigines from the land of their forefathers, have, it is to be regretted, hitherto proved a specious cloak for carrying on these cruel and unjust practices. The argument that obtains in defence of these intrusions on the homes of the natives is held to be this, that as they employ little or no labour on the land, they have no property therein; therefore as labour constitutes the first and only unalienable right to the soil, and the natives not having invested this capital or right in the land, but leaving it in a measure a barren unproductive wilderness, we had a right to step in at our pleasure, and by investing the capital of our labour in this unproductive soil, drive out the original idle proprietors.

This argument, looking at it from any side, and with all its logical conclusions, is, after all, neither more or less than might against right. It is very certain had we not the power of assuming all the argument on our own side, and of putting it in force on the other, it would wear a very different aspect, suppose these barbarians in their turn were in a position not only to argue, but physically to dispute or retaliate on these civilised robbers.

It would be an easy matter to show that the soil produced in abundance all that their necessities demanded, and to which they and their forefathers had been accustomed; and while the mountain forest was their preserve, and the valley and the savannahs their grazing fields, the intrusions of a stranger into the former is as the poacher on the manor of a nobleman, and claiming the latter as identical with robbing the farmer of his right to the use of his field. As before stated, the woods and pasturage supply to the full extent the wants of the whole mass of people; the cultivated fields of the most civilised country do little more. The artificial wants of the one have created an additional demand on them for labour, to extort from the soil to supply them; the other wants being little more than nature demands, are supplied profusely by her hand.

After little more than a week's stay at Shaka's residence, Captain King and his party obtained his permission to return to Natal, desiring him on his arrival to send on the rest of his ship's crew, that the king might see and know them, and not to lose any time in commencing the building of the uncombie (vessel). The pompous manner in which he always behaved towards our party while in the presence of his chief captains and warriors, to our amusement was altogether thrown aside in the retirement of his residence, where he conversed familiarly with Captain King through Jacob the interpreter, sent for the present, condescending to thank the captain for it. While minutely examining the texture of a blanket, he held it to his face, and expressed his admiration of its warmth and softness. A looking-glass among the articles presented appeared to please him very much, and he asked many shrewd questions as to the material from which it was manufactured, and appeared greatly surprised when informed of the simple article

from which he was told it was produced. While closely surveying his person in this mirror for the first time in his life, he detected some grey hairs in his beard, which caused him great uneasiness, indicating he was getting old. He anxiously inquired of Captain King if the Moolongas had any medicine that could prevent such effects of increasing years. The captain replied in the affirmative, that the Moolongas could do such things, which pleased his majesty so much that he declared when his vessel was finished he should send it to his friend King George for the valuable preparation.

Our party were well supplied with food daily by the king's attendants, consisting principally of boiled and roast beef, of rich and excellent quality, with occasionally huge calabashes of curdled milk, accompanied by boiled Indian corn as a substitute for bread; whilst every evening a large earthen vessel, containing from three to four gallons of beer, was sent them from the king's private brewery. This latter beverage is, when carefully made, exceedingly pleasant and agreeable. It is prepared from malt of the Guinea corn. The grain is first steeped in water, then laid out on mats in the sun, and kept constantly turned; it is then laid aside until it germinates, when it is prepared for brewing in the usual way, but in place of hops a species of herb is used by them, which gives it a somewhat intoxicating quality when drunk to excess. Besides this abundant supply of provision, when our captain and his crew had taken their leave of his majesty, they had not proceeded far on their journey homeward when overtaken by a servant of the king, driving before him some fifteen head of cattle, part of which consisted of five good milch cows with young calves. The man drove the cattle at a quick pace about fifty yards in advance of our party, and squatting himself down on the ground, said in a loud tone of voice, "See the Inkoma (cattle) the Kanggesevie (Great as the World), my master, King of the Zoolas gives, that you may neither hunger nor thirst in the country of our Great King." Having said this, he commenced begging on his own account in the most imploring manner a few beads from the king's wild beasts, a term which the Zoola warriors called us by way of compliment. Captain King presented him with a few, with which he was greatly delighted, and he immediately returned, leaving however two of his party to drive and tend the cattle on the journey to Natal. These two lads, on arriving at our quarters, appeared determined on remaining with me. Fearing that the king's displeasure might be incurred by not sending them back, we used every means to prevail on them to leave us, but to no effect; they were determined to stay by us, and did so until we left Port Natal.

(To be continued.)

REMARKS ON THE PRINCIPAL PORTS AND ANCHORING PLACES ALONG
THE COAST OF THE DOMINICAN REPUBLIC.—By Sir Robert H.
Schomburgh, Ph. D., &c. &c.

(Continued from page 232)

BOCA DE LA ROMANA. The River Romana affords within a short distance from its mouth one of the best sheltered ports on the south coast of the island. The entrance is narrow, (it being not quite a cable's length from point to point,) and 34 fathoms from the lee point there is a small shoal, with only $3\frac{1}{2}$ to 4 feet water on its shallowest part.

On entering the river, which must be with a leading breeze, and having reduced your soundings to 9 or 10 fathoms, keep the two *inner* points of the river (the first or western of which is then about 600 fathoms, the second or eastern 800 fathoms distant, bearing N. $17\frac{1}{2}^{\circ}$ W.) about $1\frac{1}{2}$ degree open of each other; the two inner points being *in one* is a mark for the shoal. Continue that course until you are abreast of the weather point, remembering that there is a reef a little to the east of that point. Having entered the river, you will observe two rocks, from 6 to 10 feet above water, on your starboard. Keep the lee bank a little closer than the weather bank, and proceed up the river until you near the inner lee point. Keeping now the northern rock you noticed on entering the river on your starboard, looking over your stern in one with the weather point at the mouth, come to anchor in 5 fathoms. You will then notice two rocks a little south of the inner lee point, around one of which you may make fast,* and if you do not wish the vessel to swing to the tides, do the same round a rock on the eastern bank. Small vessels anchor round the inner lee point, in 10 or 11 feet water. A short distance to the north of this anchorage is a shallow with only six feet water.

I need scarcely observe, the river being so narrow, and not permitting any room for working a ship, the vessel ought to take her departure only with a land breeze sufficiently strong to give her head way. The two dangers against which she has to guard, are the sunken rock off the lee point, and the weather reef. The River Romana has broken through the hills of coralline limestone; they frequently approach the shore in perpendicular walls. Small sailing vessels may ascend for nearly two miles from the mouth, but they require a pilot. Boats frequently get as high up as the Derumbaderos, and even to the Rapid for fresh water. There are no difficulties for boats until coming to the little island, where a shelf of rocks shallows the river to $2\frac{1}{2}$ feet during its mean stand, and to only 1 foot on approaching the rapid. The river falls here over a shelf of rocks so that the boat may almost lie under it, and permit the water to run into the casks.

The small village La Romana lies on the hills above the river on its right or western bank; the ascent is steep, and very inconvenient.

* I have given to these rocks the name of the Mooring Rocks.

The Commandant has his residence on the left bank, opposite the village. The position of this place was according to my observations in lat. $18^{\circ} 27' 32''$ N., and long. $68^{\circ} 58' 37''$ W.*; from which determination I have deduced the position of the left or weather point of the mouth of the river La Romana, as in lat. $18^{\circ} 25' 10''$ N., and long. $68^{\circ} 58' 20''$ W., but as the distance from my point of observation to the mouth of the river has not been trigonometrically ascertained, this determination may deviate somewhat from the truth.

The island of SANTA CATALINA, or merely CATALINA, lies about two miles off the southern coast, between the mouths of the rivers Cumayasa and La Romana. The channel between the main of the principal island and the islet extends East and West, and affords a passage to the largest vessel by keeping the mainland close on board. There is a good anchorage in $3\frac{1}{2}$ fathoms on the north-western part of Catalina, near a bay, where the vessel is protected by the two jutting points of the island. The north-western point has a reef, on which the water breaks to warn against the danger.

BOCA DE CUMAYASA. I have not examined the mouth of this river, which it is well known affords as good an anchorage as La Romana, with the preference that the entrance is not endangered by a shoal. Mr. Lundstrom, Master of the Swedish barque *Jenny Lind*, has communicated to me the sketch to the entrance, with the following particulars:—"The anchorage for vessels that require more than 18 feet, is about one and a half cable's length from the entrance, on the river's eastern bank. There is a rock above water, near which the vessel may anchor. The bank of the river forms on the left, or eastern side, two small coves, and has much more the appearance of an inlet of the sea than the mouth of a river.† Large vessels may anchor in 4 fathoms, a little south of the small cove.

"On ascending the river, a large mud flat extends from the first point on its left or eastern bank. There is a channel close on the right bank, with only from 6 to 8 feet water. Small craft that draw no more than 6 feet pass over it, and may ascend to the rock of San Pedro, about $1\frac{1}{4}$ miles from the entrance. Higher up there are three islands, beyond which the river gets quite narrow, and is only passable for boats up to the Derumbadero of San Juan, three miles and a half from the entrance."

Fresh water is somewhat higher up than San Juan, where the river forms a basin called Agua Dulce, but the boats cannot approach within a couple hundred of yards.

THE RIVER SOCO. Although one of the largest that flows from the the mountains in the eastern part southward to the sea, is unfortunately impeded by a bar and narrowed in by sandbanks, covered with drift wood, so that only boats can enter to the fine basin that extends beyond the bar. Vessels of 300 tons have to anchor in 5 fathoms, distant about 3 miles from the shore, the mouth of the river bearing

* The Aneroid gave me for the height of the place above the river 180 feet.

† This supposition is perfectly correct, from what I have seen of Cumayasa at a distance of three miles from its mouth.

N.b.E. or N.N.E.; smaller ones may lie in 3 or 4 fathoms. The anchorage is naturally open to the winds, and receives scarcely any protection from Point Mortero, which bears from the mouth of the river S.b.E.

The embarcadero or loading place is about a cable's length from the mouth, on the river's right or western bank, and has deep water close in. According to my observations the house of Dona Felipe Morales is in lat. $18^{\circ} 27' 46''$ N., and long. $69^{\circ} 12' 44''$ W. The mouth of the river bears from here S.b.E., distant about two cables' length.

THE PORT OF MACORIS. On coming in sight of the bay which the River Macoris forms at its mouth, one is struck with that fine expanse of water which it seems nature intended for a harbour. A nearer glance and the lead proves that such a supposition is delusive; the bay, with the exception of the channel which the river has pathed itself, is a mud flat. An islet, with a reef extending north-eastward, protects the anchorage. The channel affords here only 18 feet water, and shoals to 16 and 14 feet as soon as the south passage point is abreast. Between this point and the north passage point, lies, about half a cable's length from the former, a dangerous shoal, with only from 6 to 7 feet water on it. The British barque *Edward* struck here in May, 1851, and received so much injury that she was condemned on her arrival at the port of Santo Domingo. The mark for this shoal is the north passage point on with the second cocoa-nut tree, near the Commandant's house.

If the draft of your vessel permits it, and you have cleared the outer reef on entering the harbour, keep your course for Mr. Peck's house at the north-western bight of the bay, until you have fairly opened the small sandy beach Playa Peter. The soundings give you then 12 feet. Steer for the Playa until you are abreast of the north passage point, keeping the shore on board, and let go in $11\frac{1}{2}$ feet water. This anchorage can only convene small vessels, as at a short distance to the north-west from the north passage point the water shoals to $7\frac{1}{2}$ and 6 feet. The rise of the tide is scarcely two feet. Schooners and sloops requiring no more than 10 feet water may anchor in front of the village, and ascend the river for some distance. The anchorage can only be left with a good land breeze, and it ought to be noted that the current sets towards the shoal. The south passage point and Playa Muerto being in one, it is a mark, on leaving the bay, that you are free of the *Edward's* shoal, and you may now take a south-eastern course until the reef of the Isleta is astern.

There are two small villages on the shores of the bay. The larger lies on the left or eastern shore, and bears in common parlance the name of Mosquito y Sol; the first from the large number of mosquitoes which in consequence of the adjacent mangrove or manglebush frequent the place, the latter from its exposed situation to a tropical sun. This village belongs to the district of Seybo, and surpasses in the number of houses and inhabitants La Punta, the rival village on the projecting right or western point of the river, which belongs to the jurisdiction of Los Llanos. The situation of the latter is much healthier, and the

prospect more open, but it has the drawback that even small sloops cannot come close to it in consequence of the mud flat. My observations give me for the projecting point of La Punta lat. $18^{\circ} 27' 0''$ N.; long. $69^{\circ} 19' 17''$ W.; according to which Punta Macoris would be in lat. $18^{\circ} 25' 50''$ N., and long. $69^{\circ} 19' 25''$ W. There is no fresh water in either village that can be recommended, except it be procured by ascending the river for about two miles.

GUAYACANES. About 8 or 9 miles to the west of Macoris is the anchorage of Guayacanes; it is an open roadstead, with a reef inside of it. The anchorage is from 1 mile to $1\frac{1}{4}$ mile off the land, in 8 to 9 fathoms, entirely exposed, but the bottom is sandy and holds well. The boats in order to take off the cargo have to pass the reef. There are a few inhabitants settled at the beach.

JUAN D'OLIO. Is equally exposed as the former, and the anchorage is about the same distance from the land. There are likewise some houses on the shore.

MAGDALENA. Forms the easternmost, and Caucedo the westernmost point of the Bay of Andres. It is an open and bad anchorage, and vessels prefer to lie in Agua del Rey, four miles further inside the bay, sending their boats to Magdalena for the wood they have to take off there.

AGUA DEL REY, on the eastern shore of the Bay of Andres, affords the best anchorage within that expanse of water. Vessels of 300 tons may lie in 5 fathoms, being protected against the east and south-east wind by Magdalena Point. The beach is good for loading; it must, however, be noted that the swell sets in with great force, in consequence of the bay being so large and open to the sea.

PLAYA DE ANDRES. The anchorage is from two to three miles from the land; there is a large reef, with breakers inside, which affords a passage 9 feet in depth. The Playa de Andres is famed for the prodigious and almost incredible number of pigeons that between the months of May and October come to roost there; their numbers are so large that they may be knocked down with sticks.

PUNTA CAUCEDO. There is a Derumbadero near Punta Caucedo, only approachable for boats; large vessels must lie off and on to take in cargo from here.

LA CALETA, to the north-west of Punta Caucedo, although small is a very good port, where the vessel at anchor is protected against south-easterly winds. There are no dangers, and the vessel may select her anchorage from 3 to 7 fathoms. The expanse of the bay is small, and affords only place to a few ships; the landing is good.

This anchorage has been considered dangerous to the city during war, as an army might be easily landed there; it was formerly protected by a fort. The best defence is, however, the distance from the city, and the rocky and almost impassable roads for an armed force that lead to it.

The next port is that of the city of Santo Domingo, of which a description has already been given. To the west of the city is

BOCA DE ZAINA. The anchorage is entirely exposed and foul; the

vessels are obliged to lie off at a great distance, and the swell being at all times very heavy, calms and northerly winds afford the only period when loads can be taken off. It ought not to be included into charter parties. It is worthy of remark that Vice Admiral Pen landed here the troops under Venables in 1655, the men-of-war disembarking the army while under sail.

BOCA NIGUA. Although vessels take frequently a part of their cargo in at this place, it is considered to be one of the most difficult loading places on the south coast of Santo Domingo. The anchorage seems to be merely on a bank, with a difference in soundings of 12 or 13 fathoms by the vessel swinging to the tides or currents. A strong breeze and current forces the sea with such violence into the anchorage, that it rises from 12 to 15 feet. It is only safe to load here when the wind is from the north. The banks on shore are so steep, that such wood as *lignumvitæ* can be taken at once in the boat from the rocks above. A gale from any other point than north, would inevitably cause the loss of a vessel lying for anchor at Boca Nigua. The miasma of the river are considered very unhealthy; indeed it is only with reluctance resorted to as a loading place. There is a small village a short distance from the mouth, and fresh water may be procured a quarter of a mile up the river; the water is not considered healthy.

BOCA DE NAJALLO. The bight which the river forms at its mouth is somewhat more than a mile in extent, but the anchorage is as objectionable as that of Boca Nigua, with the difference that the landing is better than at the former. The vessel lies about three quarters of a mile from the land.

PALENQUE. This is the next port to the west. It would be a most desirable anchorage, did the port afford more space; the vessels lie in 4 fathoms water, gravelly bottom, and well sheltered; the water is so deep that close to the beach there are 3 fathoms. A south wind would prevent a vessel from leaving the port, but she can get out with the usual trade winds. A reef which stretches from the windward point S.E. and N.W., ought to be guarded against.

BOCA DE NIZAO. To the west of Punta Nizao is an open roadstead, where vessels very frequently take wood on board. The ground shallows gradually, and vessels of from 250 to 300 tons have to lie in from 7 to 9 fathoms water, at a distance of $1\frac{1}{2}$ to 2 miles from the mouth of the river. Smaller vessels may anchor in 4 fathoms, but it must be recollected that the sea breaks often a great distance from the shore.

This anchorage is no more dangerous than other open roadsteads along the coast; indeed more vessels load here than at Bani and the other southern anchoring places.

The tide runs frequently with a strength of from 4 to 5 knots, and renders the loading of the vessels somewhat tedious. It is next to an impossibility for a boat to enter the river; the current sweeps out with a very great force. On proceeding therefore from on board to the place where the rafts of wood are to be made up, it is better to land the people at Palenque, and to let them walk over land to Nizao.

With regard to these local arrangements, however, and the manner in which the raft of wood is to be got on board, it is best to trust to the orders of the pilot, and to the labourers acquainted with the management.

The water of the river is good, and may be procured fresh a quarter of a mile from the mouth. There is at a short distance from the shore a small village.

PUERTO VIEJO. About four miles west from the mouth of Nizao is a better loading place. Like the former it is only an open roadstead; the anchorage is in 7 fathoms, distant about one mile and a half from the shore.

PUNTA CATALINA is not much frequented as a loading place. There is no anchorage on the east part, but on the western small vessels may anchor in 3½ fathoms. To the south of Punta Catalina, distant one mile, is a shoal with only 12 feet water over it, which ought to be guarded against when beating up the coast. Punta Palenque forms the eastern point, and Punta Catalina the western of a large bight which contains Boca Nizao and Puerto Viejo as loading places in that extent of the coast.

SAVANA. About 3 to 4 miles west of Punta Catalina is Savana, where large vessels may anchor with safety in from 5 to 6 fathoms; the anchorage is good, but to the windward only protected by Point Catalina, which bears about E.S.E.

PAYA is an open roadstead, shallowing very gradually, so that a vessel of 200 to 300 tons has to lie at a distance of from 2½ to 3 miles. It is much frequented as a loading place.

AQUA DE LA ESTANCIA. It is the anchoring place of the village Bani, and is like the former an open roadstead. The vessels have to lie at anchor at the same distance, but it is good holding ground, consisting of mud and weeds, with sand.

ESTANCIA COLORADA. Somewhat further to the westward is La Estancia Colorada, to which the same remarks refer that have been made with regard to the previous place.

LA SALINA. The soundings are from 15 to 18 fathoms, at a distance of a cable's length from the shore. Two mountain cabbage trees kept in a line with a large seaside grape tree, bearing then between E. and E.b.N., are a mark for a good anchorage. Small vessels anchor in 5 fathoms, with a hauser ashore, for fear the anchors might not hold. The depth increases so suddenly, that with 5 fathoms forward, the vessel will probably have from 18 to 20 fathoms over the stern.

LA CALDERA. This is one of the finest ports on the south coast; a vessel may here anchor in from 15 to 3 fathoms of water, as it best may suit her.

PLAYA VIEJA. Outside of La Caldera, about N.b.E. from La Salina, is Playa Vieja, affording a good anchorage under the hills of Ocoa. The bottom is so clear that it may be seen in 6 fathoms of water. Three or four hedges of mango trees, that are visible at a great distance, are a good mark for this anchorage.

OCOA. This beautiful bay affords an excellent and well protected

port near the mouth of the river of that name. You may anchor close in on either side of the river, but the northern is more preferable. It received in ancient times the name of Puerto Hermoso from the Spaniards, and Columbus found here shelter with his small squadron during the hurricane on the 1st of July, 1502, when Ovando refused him to enter the port of Santo Domingo. A whole fleet may anchor here in safety, and during the war at the commencement of the century, it was much resorted to by ships. Vice Admiral Sir J. T. Duckworth, with the fleet under his command, partly captured, partly destroyed here on the 6th of February, 1806, five sail of the line under the French Contre Admiral Lesseigues.

CARACOLAS. At the bight of the bay of Ocoa; you have to anchor at the distance of $1\frac{1}{2}$ mile from the shore, in 5 or 6 fathoms of water. The landing is good, but the large bay is sometimes subjected to a heavy swell when the breeze is southerly.

AZUA, OR TORTUGUERO. The sea sets into this anchorage with great force. When the breeze arises the vessels labour much, and the boats seldom can go off with wood to the ship after 11 o'clock in the morning. There is no room for working a vessel in the bay. On the western point is a reef, and near the east point is broken ground. Vessels leave the bay with the land breeze. Tortuguero is the port of Azua, and is considered to be a tolerably good anchoring place.

PUERTO VIEJO DE AZUA. This is an excellent port for small vessels, where they lie quite land locked. Unfortunately it has only from 12 to 15 feet water at the entrance, but for such vessels as require no greater depth, it is one of the safest ports in the Republic. The entrance is very narrow, and there is a reef on the north point. Large vessels lie before the entrance, in from 9 to 3 fathoms, as circumstances may require.

The first town by the name of Azua was in the neighbourhood of this port. The Adelantado Don Diego Columbus founded it in 1504, and added to its Indian name, Azua, that of Compostela, after the Commander Gallego, of the Order of Santiago de la Compostela, who had a habitation here. The town was afterwards removed to its present situation, in consequence of old Azua having been destroyed by an earthquake.

THE BAY OF NEYBA, OR JULIANA, extends from Punta Martin Garcia to Punta Truxillo, $9\frac{1}{2}$ miles, and has a depth of $8\frac{1}{2}$ miles; the largest vessels of war may anchor in the bay, along its eastern coast. It contains the anchorages of Rancho del Cura and Bahia Alejandro on the eastern, and the port of Baraona on the western coast. The river Neyba, or Yaque, enters the bay N. $84\frac{1}{2}$ W., 10 miles from Punta Martin Garcia. The ground shallows to 11 feet, and has a bar with less water, which prevents small sailing vessels entering the river. Its course has been very changeable, and formerly it entered the bay further southward in several arms.

RANCHO DEL CURA. At the distance of one mile from Punta Martin Garcia, in the fine bay of Neyba, and a little to the north of some red cliffs, is a very good anchorage under the above name. You lie two

cables' length from the shore in 5 fathoms, protected by Punta Martin Garcia from the east winds. To the north of the anchorage are some white cliffs, almost equidistant from the anchorage and the red cliffs.

BAHIA ALEJANDRO. The anchorage is very exposed, and there is a reef inside. I have not visited it personally, but I learn that it is no desirable place for loading a vessel.

BARAONA, OR BARAHONA. This harbour offers a very good anchorage, but the vessels ought to await a pilot to lead them through the passage between the reefs. On entering the bay of Neyba, and being abreast of the red cliffs, hold a W.S.W. course for the entrance; the water is bold, close into the reef. At four cables' length from the reef you have no bottom with 120 fathoms, and it suddenly shallows to 5 fathoms and 10 feet. When you are within two miles of the reef, you will discern the village very plainly, and you will note above it two ridges of hills, one overtopping the other; each ridge has a saddle or hammock, in a direction of nearly W.S.W. with the village; keep these two saddles in one. Coming close to the entrance, your soundings being probably 10 fathoms, you will note on the square of the little village a house, larger and more prominent than the others, with a palm tree before it, standing likewise on the square. Bring that palm tree in one line with the northern gable end of the house, or with the gate that leads to the yard, bearing then S. 69½ W., and let go your anchor. After having cleared the weather reef in 5 or 4 fathoms there is a good anchorage in 7 to 8 fathoms, the little islet bearing west; and sometimes vessels anchor much closer in shore, in 22 feet, but some sunken rocks, called the fishing rocks, may prove of danger in getting the vessel under way. The reefs possess several passages for schooners, and smaller vessels. According to my determination the village of Baraona is in lat. 18° 12' 2" N., and long. 71° 5' 45" W.

BABURUCO. This place ought to be avoided, although vessels have loaded there at various times. The British brig *Honor*, of London, was entirely lost here in March, 1852. At a naval court held in the city of Santo Domingo, to examine into the causes that led to this loss, it was clearly ascertained that Baburuco was not a proper shipping place for large vessels, and that masters should be careful in accepting any charter in which that place is included. There is scarcely sufficient room for a vessel to lie at anchor, and with the wind blowing on shore, there is not sufficient opening to tack out. Moreover a very heavy sea sets into the anchorage. The vessels are anchored in from 12 to 17 fathoms, at a distance of one mile and a half from the shore, with a reef towards the south of the anchorage, and one to the north. The shore is uninhabited.

MALA PASA. About three miles S.W. of Baburuco is Mala Pasa. It may be easily recognised by its steep white cliffs. It is less qualified for an anchorage than Baburuco; the same refers to Paradise and Petite Banane.

RIOCITO is about five miles from Mala Pasa. The water is so deep that the vessel is obliged to anchor close in, which renders her situation dangerous; the anchorage is moreover exposed to every wind, and all

the sweepings of the sea. Vessels have loaded here to my knowledge during fair weather, but it cannot be recommended as a loading place. After Riocito follows Punta de Carlos, and

PETIT TROU, OR AJUGERO CHICO. A long reef, about three miles in extent, encompasses this anchorage. This barrier has two passages; the windward passage is about two cables' length in width, with several sunken rocks, one of which has only 10½ feet water, but there is deeper water on both sides; this entrance is called the reef passage. The lower entrance, or sea passage, has 18 to 20 feet, but the room within, when having once cleared the passage, is so narrow and impeded by sunken rocks, that no vessel could beat up to the proper anchorage; it is therefore only of use for vessels that stand out to sea. A vessel bound for Petit Trou ought not to draw more than ten feet and a half. In approaching the reef some of the sails should be taken in, to prevent the vessel going too quick through the water. The time for passing through the passage ought to be between 11 o'clock in the morning and 1 o'clock in the afternoon, when the sun is high, and shows the rocks under the water more clearly. The pilot stands on the bowsprit, and gives directions how to steer the vessel through the rocks (some of which are only covered with 6 and 7 feet water) to the anchorage. It is therefore requisite to have a clever and quick person at the helm.*

The ground for anchoring is not very good. Captain Sleeboom told me that the anchor could only hold when lying against a rock, while others have assured me that they prefer to let the anchor drop in white water, a sign of sandy bottom. There is scarcely a berth to be found where a vessel with 70 fathoms chain can swing round, without striking a rock; it is therefore advisable to moor the craft. The bottom shallows gradually, and at a distance of 1½ mile from the land there are only 3 fathoms water. The breeze blows fresh from the north-east, and the weather is uncertain and squally. Captain Sleeboom, of the Hamburg brig *Wilhelmine*, who was lying there for some time, informed me that the north-easterly breeze sets in about 2 o'clock in the morning, and continues to blow from that quarter until half-past 7 or 8 o'clock P.M., when it veers more to the eastward, and blows from E.b.S. until midnight. During increasing moon the current sets regularly for twelve hours with the ebb to the east, with a velocity from three quarters to one knot per hour. The flood rises at Petit Trou above three feet. Mr. Sleeboom observed that during a decreasing moon the flood sets uninterruptedly towards the west, and that there is no ebb at all. It runs then with a velocity of from one to one and a quarter knot.

In spite of these drawbacks vessels load frequently at Petit Trou, and a person acquainted with the dangers he has to meet, will take accordingly the requisite precautions if that place should be included

* The British brig *Caledonia*, of Guernsey, drawing twelve feet water, struck on a rock while entering the passage, and was entirely lost. At the examination of the pilot it became evident that either the grossest ignorance or his dishonesty had caused the loss of that vessel.

in his charter party. A careful master will lie to when he has the slightest mistrust in his pilot, and sound the passage, placing moreover a buoy on the 10½ feet rock, which presents the greatest danger to a vessel on entering. I have already observed that the sea passage affords more water and less danger. It is nevertheless necessary to be cautious when standing out to sea, as there are sunken rocks in the course before the reef is cleared.

Petit Trou is the most western loading place that on the south coast of the Republic is at present resorted to. The war between the Dominican Republic and the Haytian Empire, does not render it prudent to approach the frontier closer until peace be restored.

(To be continued.)

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from page 245.)

Sunday, July 28th.—This has been a most suffocating day; the wind blew hot as from a furnace, although the thermometer was not higher than 91°. The barometer falls steadily, and it is quite evident a typhoon is not far off.

On the morning of the 29th every craft that could swim shifted over to the Cowloon side, and the Harbour Master signalled to the shipping to make everything snug: bar. 29.38. Struck lower yards and topmasts, and let go the other anchor, veering to a cable on best bower. At 4 P.M. we had heavy gusts from the northward, with a peculiar lurid appearance over the mountains behind Cowloon. At sunset the typhoon was blowing a gale, the squalls increasing in intensity until midnight, when they began to take off, the wind veering to the eastward. From this period the barometer began to rise, and the gale gradually subsided, till on the 1st of August we had the S.W. monsoon again. Excepting to the miserable sheds containing the naval stores at West Point, no damage was done, and after this blow the weather became much cooler, the thermometer descending to 84°.

Our refit progresses slowly. The caulking is being performed by contract, and even the Chinese, hard working fellows as they are, relax their toil in the tremendous sun. The decks having been payed with Mr. Jeffrey's glue, require nothing done to them; this admirable composition has thus stood a severe test well. The engineers may have a holiday, there are no defects in their department; what few repairs have been required were executed at sea, when the ship was under sail. Here is one of the advantages that a screw vessel has over a paddle wheel, which must necessarily bring most of her engine-room defects into port. It must not be forgotten also, that since leaving this place on the 10th of April, we have run 4,235 miles, of which 755 were done under steam, and yet we have returned with the coal

bunkers half full. I wish this fact could be communicated to those who seem bent on opposing, by every means in their power, the general adoption of the screw propeller; it might tend materially to modify an opinion which time must some day infallibly explode. For my part I cannot restrain a conviction that the days of the paddle wheel, as applied to ocean navigation, are already numbered, and that but for the enormous subsidies paid by Government to the great steam packet companies, which have only acted as a direct premium upon error and extravagance, the large boats now running would never have been built. Perhaps the screw may not yet be able to compete successfully on rivers and short voyages, where great speed is the principal object, and only passengers are carried; but it must be remembered we have not had ten years' experience of this motive power yet, while our experience of the paddle wheel extends to more than thirty. For war purposes there can be no question which is the best, and as a perfect screw vessel ought also to be a perfect sailing vessel, I can see no reason why from henceforth every man-of-war should not be constructed to carry engines, being launched with the aperture for the propeller in the dead wood "filled in" until required.

Our magazine has for some time past been reported very damp, most probably occasioned by the heat emitted from the condenser attached to the distilling apparatus, which is placed in the forehold, and only separated from the magazine by a bulkhead. On landing the powder for examination the greater part of it was found caked, but it did not appear to have lost any of its strength when tested in the Epreuve, after having been dried in the sun and granulated afresh.

The Peninsular and Oriental Company's steamer *Pekin* arrived on the 8th with the mail in forty-five days from England, the shortest time ever known; London dates to June 24th. On the 26th I embarked General Staveley and family, and took them round the island to Chuck-chew, a depot for invalids, pleasantly situated, and enjoying the full benefit of this monsoon. Here the General hopes to recruit his shattered health, and I trust will be successful; but the place bears a bad character. Montgomery Martin says, vol. ii., p. 328: "During the year 1845 Chuck-chew, which is almost entirely composed of rotten granite, proved as unhealthy as Victoria; the mortality there of the 18th Royal Irish, between March and December of that year, was nearly twenty-three per cent., and they were then removed from that wretched spot and placed on board the ship *Sir R. Sale*, in the harbour of Hong Kong." Now with due deference to this authority, I suspect the "wretched spot" had very little to do with the sickness of the regiment; indeed I protest against the sweeping denunciation of Hong Kong generally that has been indulged in by this writer. I must venture to question the correctness of his statements that

"The Chinese deem it a dangerous experiment to prolong their abode in the island beyond a certain time; they have ever viewed Hong Kong as injurious to health and fatal to life." That "The Europeans who survive a brief residence in this climate generally get

a lassitude of frame, and an irritability of fibre, which destroy the springs of existence." That "A malign influence operates on the system in a most distressing manner, which is not removed by a return to Europe; on the contrary, the sufferers frequently die in England shortly after their arrival there."—Vol. ii., p. 325!!!

All this I consider pure invention; but I do most certainly believe that exposure to the sun, over fatigue, and want of attention to clothing and diet, unquestionably bring on those complaints which have proved so fatal at Hong Kong. Attentive observation of the present state of the colony confirms me in my opinion, that with proper precautions the health of Europeans may be effectually preserved here, even at this deadly (?) season. There are no complaints from the civilians of the community; they enjoy perfect immunity from sickness. Why then should the garrison suffer so severely? or rather, why should one portion of it be more than decimated, when another has scarcely a man in hospital? They both inhale the same atmosphere, and there is no difference in their diet. Is it because in the one case the Queen's regulations, which are totally unsuited to this climate, as regards uniform, are strictly enforced? in the other, that broad brimmed pith hats, covered with calico, are substituted for chacos and forage caps; a loose handkerchief round the throat for the leather stock; and in spite of its unmilitary appearance, every man is obliged to carry a good thick umbrella.

At this season the simple duty of standing sentry, buttoned up to the throat, with a heavy infantry musket and cross belts, is enough to try the strongest constitution; but although a bayonet, or even ramrod, would be sufficient for all purposes, there is no relaxation, and sentries are daily carried off in a dying state to the hospital. With regard to diet, it cannot be denied that soldiers are liable to commit excesses, and it is rather unfair to charge to locality or climate the effects of Samshoo, which is acknowledged to be the most deadly in its effects of all known intoxicating drinks.

But may not, after all, want of occupation be at the root of the evil? The vacant mind, the listlessness induced by idleness, it is well known, predispose to disease; while under the most adverse circumstances, who has not heard at some time or other the remark, "that there is not time to be ill!" That man is to be pitied, be his rank and station what it may, who has no resources within himself at Hong Kong; and therefore during the suspension of drills, and much of the usual military routine, there is every reason why some other employment should be created for the troops, whether cultivation of their mental energies, the learning of some handicraft, or whatever can best be contrived for head or hands to do.

These remarks are equally applicable to the sister service. Even the ordinary routine of duty suitable for a temperate climate cannot be carried out on board at this season without risk, and fatiguing drills are out of the question. Under Providence, and by attending strictly to the sanitary regulations recommended by our zealous surgeon, Dr. Pottinger, who had four years' previous experience of this

station in the *Druid*, the health of the ship's company was never better than at this moment; there is not a man on the sick list, and the average number for the last six weeks has been only 2·47 per cent. I am however obliged to leave two men behind at the hospital, who thought proper to abuse the indulgence granted them, and remain ashore all day, wandering about, in a drunken state, exposed to the sun.*

August 27th.—Started at daylight under steam for the Canton river, and took the passage through the picturesque Capsing-mun. Off Urmstone Bay a breeze sprang up, and I was very glad to take advantage of it, and put the fires out, for the engine-room was 118°, stoke-hole 142°. No European constitution could withstand this heat long, but I have applied in vain to be allowed a few coloured stokers, whose services I consider as necessary to a steamer on this station as Kroomen are on the coast of Africa.

Off Lankeet we met a large ship under American colours, in tow of a steamer. She proved to be the *Oriental*, a magnificent clipper, chartered by English houses at Canton with the first teas of the season for London, at £6 per ton, the average freight our vessels are getting being £3 10s. This is direct evidence that the repeal of the Navigation Laws is beginning to operate, and our shipowners and shipbuilders will have to bestir themselves, and supersede some of the wretched tubs now employed in the China trade, unless they intend to be kept in the back ground.

Anchored for the night in five fathoms, and the next morning, after practising with the great guns at a target until the sun became too powerful, proceeded up the river, carrying the tide up from the Bogue Forts nearly to the second bar, where I anchored again.

The heat was overpowering to-day, ther. 91°: perhaps the reflection from the muddy river has something to do with it. One of the sail-makers, although working under the awning, was struck down, and all hands were dead beat, their strength completely prostrated.

The brig *Estarte*, a beautiful vessel, built by White, of Cowes, passed us to seaward, in tow of a steamer, this evening; she is also loaded with teas for London. The race between her and the *Oriental* will be an exciting one, and heavy bets are said to be depending on it, but I fear there is little chance of her winning.

The more I reflect upon the ultimate consequences of the change in our commercial policy, the more I feel convinced that the competition invited by it will result in the enlargement of our trade, the extension of our shipping, and the prosperity of all, far and near, dependent on our commerce.

* Twenty-five men had permission to go on shore every evening, from 6 P.M. until 5 A.M., during our visit at Hong Kong, and only three abused the indulgence by breaking their leave. Two out of the three (the two above-mentioned) paid the penalty of their folly; they died on board the *Alligator* (hospital ship) of what Dr. Bankier called pure Hong Kong fever; brought on by their wanton excess.

August 29th.—At daylight laid out targets, and had an hour's practice with small arms. At noon weighed with the tide, and backed and filled up the river, anchoring at 5 P.M. in the crowded reach at Whampoa in 4 fathoms, close to the Consular Agent's chop; moored with 30 fathoms each way, and put the swivel on.

Sept. 1st.—Mr. Alexander Bird is H.M.'s Consular Agent here, and seems a painstaking man. He has evidently no sinecure, for scarcely a day passes without some dispute between shipmasters and their crews, upon which he has to adjudicate; there are generally faults on both sides, and an angel would scarcely give satisfaction.

There is a fine show of shipping here just now; in Blenheim Reach a magnificent old 1,400 ton ship, called the *Charles Forbes*, painted like a two-decker, appears to claim superiority over all the other craft, and fires a gun at daylight, sunset, and 9 P.M. Next to her, in appearance if not in size, come the *Sea Witch* and *Samuel Russell*, American clipper ships, which have astonished the world by their performances; the latter had tailed on a mud bank below the second bar, and was taken into dock at Messrs. Cowper's yard to be examined. Anything more beautiful than her form it is impossible to imagine, but so weakly constructed, being without diagonal fastenings of any kind, that although she was flying light when she took the ground, her back was evidently broken.

This is a strange place. On Dane's Island there is a collection of small buildings, called Bamboo Town, principally shops, in which articles of Chinese manufacture are sold. Almost every trade has its representative; and the tailors, shoemakers, painters, &c., are not inferior to those of Hong Kong. The few Europeans whom the prospect of gaining an independence has attracted here, live afloat in queer looking craft called "chops," generally old merchant ships. One is a chapel, or Bethel, established by the Americans, who in these matters have set a good example to us. The resident minister, Mr. Loomis, came on board, and in the most liberal manner offered us the use of a reading room, and small library attached, during our stay here.

On the 5th I received a note from Troubridge, requesting me to examine the junk passage up to Canton, and if I considered it practicable for a ship of the *Reynard's* size, to take her up by it, and relieve the *Phlegethon*, which was much in want of a refit. Accordingly on Saturday the 7th, the second day of the moon and a very high tide, I started at 2 P.M., under steam, and with the assistance of a clever river pilot, lent me by Mr. Forbes the American Consul, the ship was carried safely through the junk channel, and passing in front of the Factories arrived before four o'clock at the junction of the Macao Passage, where she was moored in four and a half fathoms, on each of the dangerous rocks above the Dutch Folly. Niblett, the Commander of the *Phlegethon*, had a boat stationed with a flag to guide us through. These were almost the only dangers I cared much about, for the barrier appeared easy enough. We carried two and a quarter fathoms in the shallowest part of the river, and, in short, the only difficulty was in threading our way through the numerous junks

that are anchored, without any regard to order, in the river. With the quarter boats down, and the davits fore and aft, we barely shaved clear of some of them.

In a very interesting work published last year on "China and the Chinese, by Sirr," are the following remarks:—

"Of all the extraordinary scenes that can be witnessed, nothing can be more surprising or astounding to an European, than the appearance of the Canton River; for let him have travelled far and wide, nought can give an idea of the scene but ocular demonstration." This is no exaggeration: the bustle of this river certainly exceeds any thing I have yet seen in China: sixty thousand boats are said to be registered, and the floating population falls little short of two hundred thousand! Our arrival had caused no small sensation among these people; they had no idea so large a vessel could have passed up the junk channel; the crowded state of which, together with the shoalness of the water, having been hitherto considered an effectual barrier to ships of the *Reynard's* tonnage, being also the first screw vessel ever seen here; she was in consequence an object of much curiosity, and all day long *san-pans*, with inquisitive faces, were continually pulling round her.

I landed at the Factories, and, on the invitation of Dr. Bowring, took up my quarters at the Consulate, thankful to have a place to lay my head, for it was impossible to remain on board; the deck of the steerage is being painted, and the Mids' chests are all on the quarter deck; the gun room is also painting, and the Officers mess abaft the mizen mast on one side, and the Mids on the other: every one sleeps on deck, for if it were practicable to get to the cabins under these circumstances, the musquitoes at night effectually prevent a wink of sleep below. My cabin is used by the Officers as a "cabinet de lecture," for even with double awnings spread it is utterly impossible to read or write in comfort any where else; then the guns are being scraped and painted; altogether I have never seen any thing like the state of confusion we are in: but it wont last long.

Dr. Bowring congratulated me, and seemed much pleased with my success in bringing the ship up the junk channel, which certainly is so far satisfactory, as it shows that should a necessity arise, a much more formidable vessel than any that has hitherto been stationed off the Factories could be brought to overawe Canton. He is a bustling man; we were up before daylight every morning, and he was kind enough to walk with me as far as we could go, before the sun got too high, in almost every direction, excepting within the walls of the city, from which, notwithstanding our treaty, we are still excluded.

The suburbs of Canton struck me as being cleaner than those of any city I have yet visited in China. There is, comparatively, an absence of those deposits and villainous smells that every where else offend the senses; the principal streets are well swept; some of the shops are very handsome, and the display of goods in them of the most valuable kinds, especially silk, is an undoubted evidence of wealth. Europeans generally confine themselves to the streets in the immediate neighbourhood of the Factories, called Old and New China Streets;

here every description of Chinese manufacture may be purchased without the trouble of going farther, at the risk of being insulted and mobbed; but prices rule a shade higher: arcades would be a more appropriate name for these streets, for at this season they are covered in with matting to exclude the sun's rays. Great preparations were making here to celebrate one of the great annual religious feasts, and when completed, the *coup d'œil* was striking and unique; handsome cut glass chandeliers, which would not have disgraced a salon in Paris, were suspended in rows, about eight feet from the ground, the whole length of the streets; on either hand were disposed ornamented pots and vases, containing plants trained into all manner of fantastical shapes; here a stag or a stork, there a royal tiger, intermingled with dwarf forest trees and flowering shrubs: about thirty feet apart, suspended at the same height as the chandeliers, and extending right across, were groups of wax figures in frames, most beautifully executed, representing incidents in the domestic manners and customs of the country, moved by clock work. At each end a stage had been built, resplendent with tinsel, and gorgeously painted in all the colours of the rainbow; here sing-songs and dramatic representations were continually performing. Of course all business was at a standstill during the week the orgies lasted; the wealthy shopkeepers sat in their best clothes, and received their friends, who flocked to the spectacle, warmly pressing their European visitors to partake of their tea, &c. I had some difficulty in forcing my way through the motley crowd, in which all the beggars of Canton appeared to be collected; and was not sorry to make my escape from such a melange of wealth and squalid poverty.

The Factory at Canton is little better than a prison; the hong, facing the bustling river, are pleasant residences; those in the rear gloomy and dismal, and scarcely habitable at this season owing to the heat. The garden in front is laid out with great taste, and well kept; it is the only ground the residents have for recreation and exercise, for the country, owing to the bad disposition of the inhabitants, is hardly safe for Europeans to venture in.

I paid a visit to the great Buddhist Temple on the Island of Houan, and its sacred swine, and witnessed a religious service, which was inexpressibly disgusting; the flowing robes of the priests, the intonation of the service, made in an unknown tongue, the bowing and genuflexion, and counting of beads, the huge images and lighted candles, bells and incense, forcibly reminded me of the Roman Catholic ceremonial; indeed the remarkable similarity of details between Buddhism and Popery must strike every one, even a Romanist priest. Sir John Davis tells us that—"The Chinese at Canton give the name of the Virgin to their Buddhist idol Kwan-yin; and in the same way apply the name of Kwan-yin to the Romish idols of the Virgin. To every saint who has a church at Macao they contrive to give a name founded on some supposed analogy to their idols: thus St. Anthony they call 'the Fire God;' but there is nothing in the Catholic worship at that place, or

in the character of the priests, that is calculated to give the Chinese a very exalted idea of this corruption of Christianity. In the former, they witness graven and molten images, processions, tinkling of bells, candles and incense, exactly resembling their own religious rites: in the latter, a number of ignorant and idle monks, professing celibacy, but with indifferent moral characters, shaving their heads, and counting beads, very much after the fashion of the Buddhist priests."

A trip up the river, with Mr. T. Meadows, the intelligent interpreter to the Consulate, as far as the "Shick-mun," a pretty place, about twelve miles above Canton, occupied one day; the country people here, where we landed, were very civil, and I trust their disposition to insult strangers has been exaggerated.

On the 17th the *Phlegethon* returned to resume her station, and brought Capt. Troubridge, who proposed returning to Hong Kong with me. It was, however, otherwise ordained; he imprudently exposed himself to the broiling sun, and, more imprudently still, on returning to Mr. John Dent's, at whose hospitable house he had taken up his quarters, got into a *cold* bath; the result was a brain fever, which in ten days cut off a fine young man in the prime of life!

Finding he was unable to accompany me, on Thursday the 19th I left Canton at 9 30 A.M., with Dr. Bowring on board, taking the Macao Passage. Niblett undertook to pilot us through the Barrier, which was constructed by the Chinese during the war, for the purpose of blocking our ships out of this splendid reach. It was dead low water when we started, and we steamed at half speed, sometimes in our own depth, as far as the barrier. Here we met the flood tide coming up with a rush through the narrow opening between the stakes, making it difficult to keep the ship's head straight. At 12 45 stopped in the Blenheim Reach, off Whampoa, to communicate with the *Serpent*, and at 1 P.M. started again. The wind was fair, and with studding sails set, we rattled down to the Bogue, passed rapidly by Annung-hay, and the long line of forts, and were soon at the entrance of the Cap-sing-mun. Here I committed to the deep the body of our blacksmith, (once the finest looking man in the ship,) who departed this life last night, worn out by a liver complaint, which doubtless has been aggravated by the dreadful hot weather of the last two months.

At 9 P.M. the anchor was dropped in Victoria Harbour, in eleven hours and a half from the time of leaving Canton, including the delay at Whampoa, and steaming half speed at least two hours. The distance, according to Lieut. Fox, via the Junk Channel, is ninety-eight miles; by the Macao Passage, therefore, four or five more must be added.

(To be continued.)

THE VIGIA, N.W. OF CAPE FINISTERRE.

In the course of our experience in conducting this journal, we have found that the class of rocks called *Vigias* are the most troublesome things in Hydrography. Assuming all the importance of real dangers, to those who heed them they cause generally unnecessary anxiety, while those who disregard them would not be held blameless in the event of any mishap from an imaginary one proving to be a real rock. They shift their places, and cannot be fixed to any particular one, and are handed down to us by our forefathers in navigation with as much care as if our very safety depended on having our charts well filled with them. We have assisted in annihilating some of these, in converting them into trees, blocks of ice, or the effects of currents or bad reckoning, as they have occasionally started up here and there, to secure certain considerations about insurance. And here is another belonging to the ancient mariners revived by a Russian ship of war, to the N.W. of Cape Finisterre

The first account of it which we received is in the following extract of a letter from Admiral Mathieu, the French Hydrographer, to Admiral Sir Francis Beaufort, which says:—

“You have doubtless been apprised of the rock which Capt. Bessaralsky, commanding the Russian corvette *La Dwina*, has reported N.b.W. (true), distant 105 miles from Cape Finisterre. Purdy’s chart, published in 1827, shows a *vigia* in that vicinity, without giving his authority for it, the latitude being the same as that given by the Captain of *La Dwina*, but there is a considerable difference in longitude.

“Hitherto we have considered Purdy’s *vigia* as doubtful, for it seems very extraordinary that a rock situated in a part of the ocean so much frequented even by millions of ships, should have only just been discovered. However, the particulars into which the Captain of *La Dwina* enters are so positive, that one cannot explain any uncertainty on a circumstance of so much importance. To ascertain the reality of this danger or not is of the highest importance to navigation, and the Minister of Marine has directed one of our steamers, the *Newton*, stationed at Lisbon, to explore the locality with that object. I have sent M. L’Ingenieur Vincendon Dumoulin, who is on board, instructions accordingly, with full particulars of it, and I will inform you of the result of his interesting examination.”

This was the first intimation we received of this rediscovery, and on referring to Purdy’s chart we found the *vigia* in question. Seeking, however, the authority for it, we were disappointed, but were obligingly supplied by Mr. Laurie with a copy of the following letter, addressed to him by his friend the writer, an officer of the *Dwina*, the vessel which has rediscovered the *vigia* in question. It runs briefly thus:—

“On board the *Dwina*, 30th January (11th February) 1853,

“Harbour of Port Praya, Cape de Verd Islands.

“Dear Sir,—I think it necessary to inform you that we left Spithead the 6th (18th) January, and made for the doubtful rock in the Bay, or close to the Bay of Biscay, which rock is put down on your charts in lat. 44° 43' N., and long. 11° 22' W. from Greenwich.

“The 14th (26th) January the fore top look-out descried breakers right ahead, and we discovered it to be the said rock; he is on a level with the water. Our observations gave us lat. 44° 43' 6" N., and long. 9° 37' 28" W. from Greenwich, and the sea was perfectly white with foam for about two hundred fathoms.

Your’s,

“E. GROTF, R. I. N.

“R. H. Laurie, Esq., 53, Fleet Street.”

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The account given by Captain Bessaralsky would appear, from Admiral Mathieu's letter, to afford more information concerning this danger than the foregoing, but as it appears that the French steamer *Newton* has been directed to examine the locality, with the view of settling the question, we may for the present suspend our conclusions, more especially as the French Admiral has most considerately promised Sir Francis Beaufort the result of the inquiry.

We cannot however resist the opportunity of expressing our concurrence with Admiral Mathieu, that it does seem extraordinary indeed that in a part of the ocean so much frequented as that in question, a real danger should have only just now been actually discovered; and we have added the names (accidentally at hand) of a few of H.M.'s ships to the close of this paper that have passed over it, or very nearly so. But although they had the same good fortune as the Russian corvette in escaping it, they had not the advantage which she appears to have had of seeing it.

In communicating to the Editor the above extract from the French Admiral's letter, Sir Francis mentioned a circumstance which had occurred to himself, and is, therefore, worth preserving here, as a good instance of the deceptions to which the anxious eyes of seamen are daily exposed. We have therefore transcribed it, as nearly as we can remember, in his own words, as follows:—

"One fine afternoon in 1807 as we were running into the Plata with studding sails set, a rock was reported by the look-out man aloft, and the officer of the watch lost no time in mounting to the foreyard with a glass and confirming the report; but being satisfied of the utter improbability of a rock so apparent to every eye being in a track that was beaten every day by some of our numerous squadron in the river, I steered directly for it.

"While approaching it, every glass and every eye were fixed upon the apparent danger; and though the water was very smooth, yet the little sea then running was observed to roll gently up its side, and after breaking over its dark outline, showed long weeds and barnacles adhering to its surface. Some faces looked rather gloomy, and one or two half-whispered hints had been hazarded about wanton and useless temerity, when the sudden operation of topping-up the lower studding sail boom, being followed with a slight flap of the sail, at once unravelled the whole mystery—by awakening the Sleeping Whale."

The above is quite to the point. But here is another kind of rock, from Captain Evans, an experienced naval officer:—

"5, New Street, Spring Gardens, London,

"May 11th, 1853.

"Dear Sir,—With respect to the rock which you pointed out to me this morning, I may mention a circumstance that occurred on my passage from the East Indies, when I was Acting Master of the *Owen Glendower* frigate.

"When in lat. $46\frac{1}{2}^{\circ}$ N., long. $17\frac{1}{2}^{\circ}$ W., on the 9th of January, 1822, a rock was reported by the man at the masthead, on the lee bow, about a mile distant. On examining the spot indicated by the look out, breakers were clearly discernible, and the ship was steered right for them, and only rounded-to when we were as close to them as it was prudent to go. No doubt existed in the minds of the officers or ship's company that we had made a most important discovery. We were close to the breakers, and the apparent rock was covered with barnacles and seaweed, surrounded by fish, and the sea breaking over it. A boat was lowered, and I went in her with lead lines, and on getting alongside of what to that moment I had not the slightest doubt was a rock, I discovered on striking it with the boat hook that it was an enormous square log of mahogany! After much difficulty we hoisted the log on board, and on sawing it through found it was perfectly useless, owing to the honeycombed state of its interior, from which a vast multitude of worms were taken, thus showing the length of time it had been floating about. Here then is a strong case, which you may

perhaps think worthy of notice in your valuable and extensively circulated journal, showing the necessity of strictly examining all objects having the appearance of rocks in the ocean, before asserting positively that such dangers exist.

Yours, &c,

"G. EVANS, Captain, R.N.

"To the Editor of the *Nautical Magazine*."

Here then we have a veritable *vigila*, and it would be curious indeed should the Russian discovery turn out to be something similar. In conclusion, the following is a list of ships that have escaped it:—

Rhadamanthus -	October	-	1852	Linnæus	-	October	-	1849	
Express	-	August	-	1849	Express	-	August	-	1850
—————	-	June	-	—————	Rochester	-	September	-	1850
—————	-	September	-	1848	Birkenhead	-	October	-	1850
Bulldog	-	Oct. & Dec.	-	—————	—————	-	January	-	1851
Daphne	-	December	-	1846	Cumberland	-	April	-	1851
Cormorant	-	July	-	1843	Sampson	-	February	-	1852
Daphne	-	October	-	1842	Winchester	-	May	-	—————
—————	-	December	-	1846	Terrible	-	September	-	1852
Portland	-	November	-	1850					

REPORT ON MANNING THE ROYAL NAVY.

Sir,

Admiralty, 14th February, 1853.

1. We have the honour to acquaint you, for the information of the Lords Commissioners of the Admiralty, that in pursuance of their Lordships' instructions signified to Admiral Sir William Parker by their Secretary's letter of the 26th July last, to assemble in committee for the purpose of considering the present system of Manning the Navy, we met on the 17th of August following, and proceeded forthwith to inquire into the following subjects, to which our attention was directed:—

Subjects referred to the consideration of the Committee.

- 1st. The entry and training of boys and seamen, and the periods of service for which they are engaged.
- 2nd. Whether such periods of service could be advantageously extended; and the regulations which it would be advisable in such case to adopt.
- 3rd. The practicability of permanently retaining the services of boys and seamen, as is the case with the Royal Marines, so as to ensure the means of rapidly manning Her Majesty's ships when required for service.
- 4th. Whether a period of service abroad might be followed by a period of service at home, in the coast guard, dockyard, or home ports.
- 5th. Whether a reserve of seamen might not be organized to remain in England, reference being had to the scheme recently laid before Parliament for that purpose.
- 6th. What measures could be adopted at the present time in order to secure the services of a large body of seamen for the defence and general service of the country, in a case of an emergency.
- 7th. The questions of pay and prize money, and especially the clause of the Act 5 & 6 Will. IV. c. 24, relating to bounty.
- 8th. All regulations at present in force relative to petty officers and seamen-gunners.
- 9th. The award of good-conduct badges and of pensions.
- 10th. The entry of seamen into the coast guard and dockyards.
- 11th and lastly. The admission of seamen into Greenwich Hospital, and their support therein.

Evidence taken.

2. Before coming to any conclusions on subjects embracing so wide a range, all of an important, and some of them of a momentous character, we perused carefully the several letters and other documents which had from time to time been laid before their Lordships on these subjects, and which were transmitted for our information; and we further availed ourselves of their Lordships' authority to call for and examine such persons and papers as appeared to us best calculated to assist our judgment in deciding upon the various points enumerated.

3. We have accordingly examined several public functionaries, officers, and seamen of the royal navy, shipowners, and others connected with the mercantile marine, (a list of whose names is attached hereto); and from these sources we have derived much valuable information, which is appended in a documentary form to this report.

4. We gladly avail ourselves of this opportunity of thankfully acknowledging the courtesy and attention with which they have severally responded to our inquiries; and we are specially indebted to the Admirals of the Fleet, Sir Byam Martin and Sir George Cockburn, for the valuable observations with which they have favoured us.

Revision of present system of Manning the Navy.

5. The general character of the evidence thus brought before us, confirmatory as it is of our own experience, has led us forcibly to the conclusion that the present system of entering seamen in Her Majesty's navy for short terms of servitude, and then discharging them, is highly detrimental to its interests and efficiency, and requires an entire revision. The system itself seems to be coeval with the first formation of a Royal Navy; and it would appear that great delay and inconvenience to the public service have at all times been experienced under its operation; but these pernicious consequences have become more apparent in proportion to the rapidity of combination and action required in modern times, and the necessity for fitting out expeditiously Her Majesty's ships; they have therefore attracted in a corresponding degree a larger share of the attention of our principal statesmen and experienced naval officers, without, however, leading to any definite result. The impolicy of the system becomes more obvious when viewed in relation to the constitution of the army and royal marines. If the practice now in force in the Navy were adopted in those services, and the men were disbanded every third or fourth year, the injurious results of such a proceeding would soon be evident; and yet the seamen of the present day require and receive even higher training than soldiers; their duties cannot be learned in so short a time, nor can it be questioned that their retention in the service, when so trained, is at least of equal importance to the country.

6. In proportion therefore to the labour and expense which latterly have been unremittingly bestowed upon the training of seamen, are the disadvantages resulting from the practice of their triennial discharge; and although successive Boards of Admiralty have adopted various judicious regulations, with the hope of increasing their attachment to the service, and inducing them to continue in it, such regulations have, to a considerable extent, failed in accomplishing the desired ends; the difficulties, therefore, of manning efficiently Her Majesty's ships, even during a period of peace, remain undiminished.

Entry of Men and Boys for longer periods.

Whilst the public service has thus suffered, the seamen themselves, when discharged, have occasionally been subjected to much hardship and distress in being unable to procure early re-admission into the navy; and failing also in obtaining employment in the mercantile marine of their own country, they have

been compelled to seek it under foreign flags. These evils would, in our opinion, be effectually remedied, so far as the peace establishment of the Navy is concerned, if both men and boys were entered for longer periods. We consider, moreover, that by extending the term of service an increased number of men would attain a much higher degree of proficiency in seamanship, gunnery, and other exercises in the use of arms, and enable the Government to act with greater vigour and promptitude at the outbreak of war. In the event of a large armament becoming necessary, a portion of the men thus trained might be advantageously distributed amongst the additional ships required for service, as the nucleus of crews to be completed from the merchant navy and other sources.

[We have but room now for their Lordships' recommendation to the Queen in Council, proposing to ourselves to complete this report in future numbers.]—ED.

At the Court at BUCKINGHAM PALACE, the 1st day of April, 1853.

PRESENT,

The Queen's most Excellent Majesty in Council.

Whereas there was this day read at the Board a Memorial from the Right Honourable the Lords Commissioners of the Admiralty, dated the 31st of March 1853, in the words following, viz. :—

"We beg leave most humbly to represent to your Majesty that we have had under our consideration the important subject of the Manning of the Royal Navy.

"The difficulties attaching to the present system of manning your Majesty's ships have engaged the attention of different Boards of Admiralty, and various regulations have from time to time been adopted with the objects of improving the condition of the seamen, and of inducing them voluntarily to enter for longer periods of continuous service. Hitherto, however, so far as the latter object is concerned, no satisfactory results have been produced.

"The difficulties are inherent in the system itself, which consists in entering men for particular ships selected by themselves, nominally for five years, but practically, according to immemorial usage, for the period during which a ship is commissioned, averaging from three to four years, and then, after much expense, time, and labour bestowed in training them, they are disbanded. A certain portion of the men thus discharged never return to the Navy; some carry the fruits of their training to foreign flags; the larger number return at periods dictated by their own inclination or convenience, and not by any regard to the wants of the service. This desultory mode of proceeding is a cause of great embarrassment and expense in conducting the ordinary duties of the naval service. It creates uncertainty as to the period when ships may be expected to be ready for sea; and the evil becomes one of great magnitude, and a serious danger, when political considerations suddenly demand the rapid equipment of your Majesty's ships.

"These circumstances induced the late Board of Admiralty to appoint a committee of naval officers to inquire into the expediency and practicability of engaging men and boys for longer terms of continuous service. The committee, having fully investigated the subject, and taken such evidence thereon as they deemed proper, arrived unanimously at the conclusion that it was expedient to place your Majesty's Navy on a more permanent basis, upon a similar principle to that established in the army and marines, and that solid advantages both to the Crown and to the seamen would result therefrom. We submit for your Majesty's consideration a copy of the report in question.

"We fully concur in the view above expressed, and we are of opinion that it is essential to give to the Royal Navy a permanent constitution, and in order that it may be brought to a higher point of organization, efficiency, and disci-

pline, and thus be enabled, at critical junctures, to fulfil the expectations of your Majesty and the country. With this object we propose to bring under your Majesty's gracious consideration such measures as, after full consideration, we confidently believe it is the real interest of the country to carry into immediate effect.

Boys.

"We humbly submit that all boys who hereafter enter the Navy be required to engage for a period of ten years continuous and general service from the age of eighteen, in addition to whatever periods may be necessary until they attain that age; and that when advanced to any of the under-mentioned ratings they be allowed the rates of pay specified against each, in addition to the present rates of pay of the Royal Navy.

"Second Class Ordinary Seaman	-	-	1d. a Day.
Ordinary Seaman	-	-	2d. "
Petty Officer and Able Seaman	-	-	3d. "

"We further submit, that the above increased rates of pay be likewise granted to men who hereafter enter your Majesty's Navy for the first time, and who volunteer for ten years continuous and general service; and also to seamen who have served or who are now serving in the Royal Navy, and who volunteer to re-enter or to continue therein, under the conditions of continuous and general service, certain portions of their previous service, as may be hereafter determined, being allowed to count towards such ten years.

"In carrying out the foregoing proposition we recommend that the change from the present to the proposed system should be effected wholly by voluntary means. With this view we submit that men be permitted, as heretofore, to volunteer for the customary period of service, and for particular ships; but by the future entry of boys for longer terms of continuous and general service, and by holding out the inducement of increased pay to men who volunteer to serve under the like conditions, we contemplate that a gradual and beneficial change will be introduced in the existing system of manning your Majesty's ships.

Leading Seamen.

"As an inducement to seamen to render themselves proficient in all branches of their duties we propose that a class of leading seamen be established, with 2d. a day in addition to any other pay to which they may be entitled; a portion of the carpenter's crew to be composed of shipwrights, who should also be granted 2d. a day additional. The proportionate number of leading men and shipwrights to be borne in your Majesty's ships we submit should be left to our discretion.

Purchase of Discharge.

"Men and boys to be permitted to purchase their discharge upon a principle and a graduated scale, similar to that in force in the army and royal marines.

Landmen.

"The pay and duties of second class ordinary seamen and landmen being identical, we recommend that the latter rating be abolished.

Petty Officers.

"We consider that it would be beneficial to your Majesty's service to establish a class of chief petty officers, to consist of the undermentioned:—

Master-at-Arms,	Chief Quartermaster,
Chief Gunner's Mate,	Chief Carpenter's Mate,
Chief Boatswain's Mate,	Seamen's Schoolmaster,
Chief Captain of the Forecastle,	Ship's Steward,
Admiral's Coxswain,	Ship's Cook;

and that the Chief Gunner's Mate, the Chief Captain of the Forecastle, and the Chief Quartermaster should be allowed 3*d.* a day each in addition to any pay to which they may be otherwise entitled. Men holding the position of chief petty officers to be borne in such rates of ships as we may deem proper.

"We beg leave to subjoin a table showing the classes and denominations of petty officers, seamen, and others borne in your Majesty's ships, and the order in which we submit they should for the future take rank; those ratings being distinguished where command should not be assumed in the event of the charge of your Majesty's ships devolving on petty officers.

"As an encouragement to deserving petty officers we propose that an increase should be made, as follows, in the number who are eligible to be recommended for good conduct gratuities when ships are paid off.

Rates.	Petty Officers, 1st Class, £7		Petty Officers, 2nd Class, £5	
	Present No.	Proposed No.	Present No.	Proposed No.
1st and 2nd - - - -	4	6	3	4
3rd - - - - -	4	5	3	4
4th - - - - -	3	5	2	3
5th - - - - -	2	4	1	2
6th - - - - -	2	4	1	2
Steamers, 1st and 2nd Class -	2	4	1	2
Steamers, 3rd Class - - -	1	3	1	1
Sloops - - - - -	1	3	1	1
Small Vessels - - - - -	1	1	1	1

"The long service medal gratuities to second class petty officers to be increased from £7 to £10. An increase to this amount has been granted to the army, in similar cases, by your Majesty's warrant of the 19th December, 1845.

"Men who have completed twenty years service to be awarded, when pensioned, the increased allowance for time served as petty officers to which non-commissioned officers of the royal marines (who enlisted after the 1st August 1847) are entitled under the authority of your Majesty's Order in Council of the 15th January 1849, provided that such seamen shall have entered and served for one continuous period of not less than ten years.

"All men who enter for continuous and general service to be allowed to count time for pension from the age of eighteen (as in the army and royal marines) instead of from the age of twenty, as is at present the case in the naval service.

"We propose that pensions be hereafter awarded to continuous and general service men after twenty years service instead of twenty-one, as at present; a discretionary power to be vested in the Board of Admiralty as regards the application of this, and the foregoing rule, to men who have served or who are serving in the Navy under the present system.

Seamen Pensioners.

"In the event of an armament being required we consider it important that this department should have the command of the services of a certain number of trained seamen, in addition to those borne on the peace establishment. For this purpose we humbly recommend that seamen who have served ten years in the Navy, reckoning from the age of eighteen, be eligible, at our discretion, to

be granted pensions of 6*d.* a day each, and men with fifteen years service pensions of 8*d.* a day each. The allowance for time served as petty officer, and the amount thereof according to the present or proposed new scale, being awarded as we may deem fit to men with ten or fifteen years service; both classes to be held liable, under the conditions contained in the Thirteenth clause of the Pension Regulations (dated the 1st January 1849) to give further service, if called upon, in the event of an armament or of war; it being however distinctly understood that no man shall be entitled to claim the above short term pensions as a matter of right. The number of men in the receipt of such pensions to be limited, for the present, to a maximum of 10,000. At a future time, when the efficacy and policy of the measure shall have been tested by experience, it may be thought prudent to increase their numbers, but the decision will be open to the deliberation and judgment of your Majesty's Government, and be subject to your Majesty's approval.

"We further recommend that men and boys who shall hereafter enter the service for the first time, and who shall be granted pensions for twenty or twenty-one years service, be also held liable, under the thirteenth clause of the said pension regulations, to give further service, if required, to meet the exigencies of an armament or of war.

"We do not propose to grant short term pensions at present, but to reserve to the Board of Admiralty a discretionary power for this purpose whenever the state of the force in commission shall lead them to think that such step may be taken with advantage.

Seamen Gunners.

"We are of opinion that the system under which seamen-gunners are now entered for your Majesty's service should be modified. These men engage at present for a term of five years service, during which period they are entitled to an additional pay of 1*d.* a day; if they volunteer for another period of five years, they receive 2*d.* a day; and for a further quinquennial term 3*d.* a day. We propose, that for the future seamen-gunners be divided into two classes: those of the first class to be entitled to an additional pay of 2*d.* a day, and the second class to an additional pay of 1*d.* a day; the pay in question to be granted according to their qualifications, and irrespective of length of service. The first class to be eligible to be promoted to the situation of gunners mates and gunners; the second class should be held qualified to perform the duty of captains of guns. The foregoing proposition to be applicable, at our discretion, to men already in the service, or who may hereafter enter therein.

Gunners, Boatswains, and Carpenters.

"The importance of the duties performed by the warrant officers of the fleet cannot be exaggerated; the situations held by them are the highest to which the seamen and petty officers of the fleet can at present expect to attain, and it is important in a corresponding degree that they should be sought after, and filled by the most active and deserving men. Considering also that the warrant officers widows pension was withdrawn without any equivalent, we have no hesitation in recommending to your Majesty that the pay of the warrant officers should be increased as follows, it being distinctly understood that such increase is awarded partly for the special purpose of enabling them to make provision, by insurance, for their widows:—

Sea Pay.

	Per Day.		Per Annum.		Increase.	
	<i>s.</i>	<i>d.</i>	£	<i>s.</i> <i>d.</i>	£	<i>s.</i> <i>d.</i>
First Class -	6	7	120	2 11	25	17 1
Second Class -	5	8	103	8 4	28	18 0
Third Class -	4	9	86	13 9	22	16 3

Harbour Pay.

		Per Day.		Per Annum.		
		s.	d.	£	s. d.	
First Class	-	1st Rate	- - 5 7	- -	101 17 11	
		This pay to be eventually that of the First Class.				
		2nd Rate	- - 5 2	- -	94 5 10	
		3rd Rate	- - 4 9	- -	86 13 9	
Second Class	-	4th Rate	- - 4 4	- -	79 1 8	
		This pay to be eventually that of the Second Class.				
		5th Rate	- - 3 11	- -	71 9 7	
Third Class	-	6th Rate	- - 3 6	- -	63 17 6	
		This pay to be eventually that of the Third Class.				

Pensions.

"In the cases of warrant officers of long service and of exemplary character and conduct, we recommend that two years harbour service should, in awarding pensions, be considered as equal to one year's service, in lieu of the proportion of three to one as at present.

"Your Majesty having been graciously pleased to direct that non-commissioned officers of the army and royal marines who distinguish themselves by gallant conduct be eligible to be promoted to the rank of commissioned officers, and that all persons so promoted be granted, respectively, a sum of £100 as an outfit, we are of opinion that it would operate as an encouragement to a highly deserving class of officers if the same boon were extended to gunners, boat-swains, and carpenters; we therefore submit, that warrant officers of the Royal Navy of exemplary conduct, who have distinguished themselves by acts of gallantry and daring in the service, be considered eligible to hold commissions in your Majesty's fleet, in such rank or position as we may deem them entitled to receive and competent to fill, after undergoing such examination as we may think fit; and that all warrant officers so promoted be granted, respectively, the sum of £100 as an outfit.

Coastguard.

"Having reference to the increased responsibility attaching to the situations of commissioned and chief boatmen, we recommend that time served in the former capacity should count as first class, and in the latter as second class petty officers time, upon the present scale in awarding pensions; and whereas coastguard men from the naval service are now entitled to higher gratuities than seamen, it appears desirable that the former should be placed on the same footing as the latter.

Estimate of Expense.

"We beg leave to transmit herewith an estimate from the Accountant General of the Navy, showing the total expense that will eventually be incurred by the proposed increase of pay to the warrant officers, petty officers, and seamen of the fleet. The sum that will be required for the ensuing financial year will not probably exceed £55,000, and it is estimated that the surplus under Vote No. 1 of the Naval Estimates will be sufficient at the close of the next financial year to meet this additional expense. A large portion of the increased pay is contingent on the voluntary adoption by the seamen of the altered terms of entry and of service.

"Considering the national importance of the objects to be attained by the proposed measures, and the increased maritime strength which will be gained, when they shall have proved successful, we humbly trust they will meet your Majesty's gracious approval, and be sanctioned by your Order in Council.

"We beg leave to add that the Lords Commissioners of your Majesty's

Treasury have, by their Secretary's letter of the 29th instant, signified their cordial concurrence in the foregoing propositions."

Her Majesty, having taken the said Memorial into consideration, was pleased, by and with the advice of her Privy Council, to approve thereof; and the Right Honourable the Lords Commissioners of the Admiralty are to give the necessary directions herein accordingly.

(Signed)

C. GREVILLE.

CLASSES and DENOMINATIONS of Petty Officers, Seamen, and others
in Her Majesty's Ships.

Chief Petty Officer.

* Master at Arms.	Chief Quartermaster.
Chief Gunner's Mate.	Chief Carpenter's Mate.
Chief Boatswain's Mate.	* Seamen's Schoolmaster.
Chief Captain of the Forecastle.	* Ship's Steward.
Admiral's Coxswain.	* Ship's Cook.

1st Class Working Petty Officers.

Ship's Corporal.	Captain of the Afterguard.
Gunner's Mate.	Captain of the Hold.
Boatswain's Mate.	Sailmaker.
Captain's Coxswain.	Ropemaker.
Captain of the Forecastle.	Carpenter's Mate.
Quartermaster.	Caulker.
Coxswain of the Launch.	* Blacksmith.
Captain of the Main Top.	* Leading Stoker.
Captain of the Fore Top.	

2nd Class Working Petty Officers.

Coxswain of the Barge.	2nd Captain of the Fore Top.
Coxswain of the Pinnace.	Yeoman of the Signals.
Captain of the Mast.	2nd Captain of the Afterguard.
2nd Captain of the Forecastle.	Captain of the Mizzen Top.
2nd Captain of the Main Top.	Sailmaker's Mate.
Coxswain of the Cutter.	Able Seamen.
* Cooper.	* Bandsmen.
* Armourer.	* Tailor.
* Caulker's Mate.	* Butcher.
* Painter.	* 2nd Head Krooman.
* Musician.	* Captain's Steward.
* Head Krooman.	* Captain's Cook.
Leading Seamen.	* Ward or Gun-room Steward.
Yeoman of Storerooms.	* Ward or Gun-room Cook.
Yeoman of Tiers.	* Subordinate Officer's Steward.
2nd Captain of the Hold.	* Subordinate Officer's Cook.
* Sick Berth Attendant.	* Ship's Steward's Assistant.
Shipwright.	Ordinary Seamen.
Sailmaker's Crew.	* Cook's Mate.
Blacksmith's Mate.	* Barber.
Armourer's Crew.	2nd Class Ordinary Seamen and
* Stoker and Coal Trimmer.	Kroomen.
* Carpenter's Crew.	Boy, 1st Class.
* Cooper's Crew.	Boy, 2nd Class.

Men holding the Ratings marked * are not to take military command.

GREAT EARTHQUAKE IN THE INDIAN ARCHIPELAGO.

The *Singapore Free Press*, of the 4th of February last, quotes from the *Java Bode* the following account of a terrible commotion of nature, which commenced on the 16th, or probably the 26th, of November, and lasted until the 22nd of December last:

On the 16th of November, about 20 minutes to 8 in the morning, a heavy vertical oscillation of the ground was felt at Banda Neira, which soon changed into a rapidly increasing undulation from the N.E. to the S.E., which lasted for more than five minutes. Every one left his house, to remain standing was impossible; people were obliged to take a firm hold of something, or throw themselves on the ground. In the morning a slight shower of rain fell, but otherwise the weather was not unfavourable.

At the first shock nearly all the houses were thrown down or very much shattered. The government buildings, the church, the officers' houses in the encampment, and the warehouses, suffered the greatest injury; the Chinese quarter was a heap of ruins; the native village on the Zonnegat was laid waste. The Pappenberg fell partly in, and two bamboo houses upon it disappeared, and on Great Banda the houses of the park-keepers, their out-houses and smoking-houses for the nutmegs underwent the same fate; everything there was also thrown down or greatly injured; nothing is visible of the village Lonthoir but a heap of ruins. Saru was terribly shattered, while detached pieces of rock lay everywhere scattered around. There were no deaths, however, to lament, and only some few persons were slightly bruised or wounded.

But the misfortune did not stop here. About eight o'clock a disturbance of the sea (*Zee-beving*) occurred, which filled every heart with fear and dismay, and caused every one to fly to the highest ground. In quick succession the bay filled and emptied, and at times it appeared to be only a little river.

The ship *Atiat-al-Rachman*, laden with rice, lying in the roads, twice touched the ground, after, like H.M. brig *De Haai*, which had anchored the day previous, having been driven backwards and forwards a number of times; but this seaquake increased in a frightful manner, and thrice overwhelmed Great Banda and Neira with the largest rollers; on the last place they reached several feet high in the houses, and burst the doors open. These huge waves formed in the Zonnegat and in the channel of Lonthoir, and ran so high that they beat over Fort Nassau, and reached the foot of the hill on which Fort Belgica is built, carrying everything with them in their reflux, but at the same time leaving behind a quantity of fishes. The prahus in the roads were driven amongst and against each other, and carried to and from the shore. They foundered, or drove in the Zonnegat, where they struck on the shore; only a few could save themselves by flight. These prahus belonged to the Saru and Key Islands and Ceram, and a part of their crews finding themselves on shore, sought shelter in one of the sheds on the old pier; but they could not withstand the force of the rollers, and in a moment they were torn out of their place of shelter and driven seawards, there miserably to perish. It is estimated that sixty men lost their lives in this way.

Miserable was the condition of the inhabitants, who saw the waves twenty-six feet high, rolling so irresistibly towards them, threatening to engulf them; the ground continually rocking under their feet; the atmosphere echoing with loud reports like cannon shots, filling their hearts with fear, and this all-destructive, indescribable state of things, lasted not merely for five minutes, an hour, a day, but for successive days; for these frightful natural phenomena only ceased on the 22nd December, while all that time scarcely an hour passed that the ground did not heave and shake, now in the heaviest manner, and then lighter, but always so that distrust and fear remained imprinted in the hearts

of the inhabitants, who, partly or wholly ruined, without habitations, sheltering in light bamboo huts, look forward to the gloomiest future, and will perhaps never be able to recover the blow which they have received.

During these earth and sea quakes, which last, however, did not extend beyond the north side of Niera, and to the south side of Great Bandas, Gunung Api was quiescent, and no alteration was observed in the smoke proceeding from it.

The accounts from the island Rosengein and Ai were more tragical, and the destruction there not less great. The spice parks Kelie and Noorwegen on Great Banda, the last which remained standing, also at length fell in, and at present there are not more than two habitable houses in Neira. The residency house has suffered much. Rock and earth slips from the Papenberg occurred there for a length of time.

The same disastrous accounts had been received from Ceram. An earth and sea quake had also occurred there on the 26th November, and caused great damage. The heavy rollers of the sea had swept away the houses on the beach, and thrown more than a hundred prahus on shore, of which a number had been destroyed, while many persons fell victims to this terrible commotion of nature.

From Amboyna we also learn that on the morning of the 26th November, about half past eight, the earthquake was felt in a direction from N.E. to W.S.W., with a duration of about five minutes. This was preceded on the 19th by some slight shocks. The disturbance of the sea also took place, but not to such a destructive and heavy extent as at Banda, although on the same day. Very little damage was caused. The accounts from the islands near Amboyna are not so favourable. Nearly all experienced the extraordinary commotion both of sea and land. The houses at Saparua and many native boats were seriously injured, and very heavy loss has been caused.

At Ternate, as well as Bachian, two heavy shocks of earthquake were felt on the 26th November at eight in the morning, and at the last place they were repeated for some days afterwards, but without doing any damage at either place. The weather was generally calm, and although the mountain of Ternate did not give out more smoke than usual, a subterranean noise was heard in it, but not very loud.

The earthquake which occurred at Batavia and Buitenzorg on the night of the 20th December, was also felt in the residences of Krawang, Magelang, Bantam Banyumas, Tagal, and Pekalongan, and in the Lampong districts. Cholera had broken out at Padang, and a number of persons had died.

NAUTICAL NOTICES.

WATER AND ANCHORAGE AT CAPE SAN LUCAS BAY.

In compliance with Admiral Moorsby's orders I visited San Lucas Bay; and, having completed water there, I fully agree with the recommendation given to it by Commander Aldham as a place of resort in the fine season. We obtained 100 tons of water in three days, by rafting our casks, containing ten tons; which, however, had to be rolled over deep sand, with some labour, to Mr. Ritchie's well, 240 yards from the sea beach. I have no doubt that the expense of laying down a pipe to the beach would soon be repaid him, if a small charge were made for the water, which at present he allows to be drawn from his well free of expense, and then watering would be very quick and easy.

The beef was very good, but vegetables have at present to be brought from San José, seventeen miles.

During our stay, from the 7th to the 10th of December, we had what is considered the usual weather during the fine season, moderate land and sea breezes, going round the entire compass each twenty-four hours, perfectly smooth water, offering not the slightest difficulty to boats landing at any time. The large and excellent plan of the bay by Sir Edward Belcher, supplied among the charts, is all that is required. The nearer the ship anchors to the shore the better, or about a cable's length from it may be best, in ten or twelve fathoms, opposite the house of Mr. Ritchie, the only one indeed there is at present, the proximity to the shore making it easy to tow off the casks during the day with the prevailing wind.

Small vessels have passed the bad season in San Lucas Bay by mooring close to the shore at the bottom of the Bay, and possibly even a large ship might be carefully moored, in a sheltered position from the violent S.E. gales, which blow at times, but the bottom is foul and very uneven in that part of the Bay, besides which, a ship, caught at the usual anchorage, would find it impossible to get to sea, and would be in a very unsafe position.

The land should always be made well to the eastward of Cape San Lucas, and care should be taken against the ship being set to the southward or south westward, if obliged to lie to for daylight.

In Findlay's Sailing Directions, lately supplied, the water is said to be impregnated with some matter which causes it soon to become putrid on board, but I find what we have has improved after being in our tanks seven weeks.

NOTICE TO MARINERS.

FIXED LIGHT ON ISABEL POINT, BRAZOS SANTIAGO, TEXAS.—Her Majesty's Government has been officially informed, that a Fixed Light is now established on Isabel Point, at the entrance of the Brazos Santiago, in $26^{\circ} 7' N.$, and $97^{\circ} 16' W.$ of Greenwich.

The Tower is painted White, and the Dome and Lantern Black.

From the deck of a steam vessel it may be seen at the distance of 11 miles from the bar, and when it bears W.b.N. (magnetic) it may be safely approached on that bearing into 8 fathoms water. It is visible 15 miles in any direction from seaward; but the nature of the coast renders it necessary to be cautious in running for it on any other than the above bearing.

A moveable Beacon Light, intended to mark the entrance of the Harbour, will be exhibited at the South Point of Padre Island, and will be visible at the distance of 10 miles from the bar in clear weather. It is a moveable framework, painted black, plainly visible by day, and stands in $26^{\circ} 6' N.$, and $97^{\circ} 12' W.$

REVOLVING LIGHT AT MATAGORDA, TEXAS.—Her Majesty's Government has been officially informed, that a Revolving Light is established on the East Point of Matagorda Island, at the entrance to Matagorda Bay, in nearly $28^{\circ} 19' 30'' N.$, and $96^{\circ} 22' 30'' W.$ of Greenwich, or $3\frac{1}{4}$ miles from the usual channel over the bar.

The Tower is painted White, and the Light, which revolves in $2\frac{1}{4}$ minutes, being 72 feet above the level of the sea, is, in clear weather, visible about 12 miles.

Vessels bound into Matagorda Bay, but having to wait for a pilot, should come to in 7 fathoms, with the light bearing W.N.W.

LIGHTS ON THE NORTH COAST OF SICILY.—The Neapolitan Government has given notice of the following changes in the three Lights on the North Coast of Sicily :—

1. At Palermo. The Fixed Light on the Pier Head is now varied by Flashes every two minutes. It is 92 feet above the mean level of the sea.

2. On Cape Milazzo. The former Revolving Light is now a Fixed Light. Its height is 288 feet above the mean level of the sea.

3. The Fixed Light on Cape Faro is now varied by Flashes every three minutes. It is 72 feet above the mean level of the sea.

LIGHTS ON THE COAST OF SPAIN.—Her Majesty's Government has been officially informed of the establishment of three new Lights on the Coast of Spain, of which the following are the particulars :

1. Revolving Light on Cape Finisterre, (Coast of Galicia, Atlantic.) On the 1st of June next a Revolving Light will be shown on the South Point of Cape Finisterre, in $42^{\circ} 52' 45''$ N., and $9^{\circ} 20' 14''$ W. of Greenwich. This Light will appear every half minute, at an elevation of 474 feet above the mean level of the sea, and may be seen at the distance of about 24 miles in clear weather.

2. Red Fixed Light on the Sisargas Islets, (Coast of Galicia, Atlantic.) On the 29th of July next a Fixed Red Light will appear on the northernmost projecting peak of Isla Mayor, which is the largest of the Sisargas Islets. The Tower stands in $43^{\circ} 21' 50''$ N., and $8^{\circ} 55' 9''$ W. of Greenwich; and the Light being of the fourth order, but having an elevation of 363 feet, will be visible at the distance of $3\frac{1}{2}$ leagues.

3. Flashing Light on Cape Creux, (Coast of Catalonia, Mediterranean.) On the 20th July next a Light, varied by Flashes every three minutes, will be established on Cape Creux, on the site of an ancient tower which has been removed, in $42^{\circ} 18' 45''$ N., and $3^{\circ} 14' 21''$ E. of Greenwich. Its distance from the sea shore due East of it, is 550 yards: and 903 yards from that shore, on the same bearing, lies the small island called Masa de Oro. The distance of the Light from the sea to the northward is 516 yards, and 535 yards from the southern shore.

The Light will stand 289 feet above the level of the sea, and may be seen 5 leagues. It is the last or easternmost light on the Coast of Spain.

LIGHTS AT MANILA.—A Government notice appears in a Singapore paper, of a Light having been established on the Island of Corregidor, and another on Caballo Islet near it, on the 1st of February last. A long statement of compass bearings appears in the notice, which it would be of little use to repeat until the Spanish authorities produce a correct chart of Manila Bay and its entrance. But we may add the few particulars which follow.

“The Light on Corregidor is a Revolving Light, appearing every alternate minute, in $14^{\circ} 23' 5''$ N., and $120^{\circ} 33' 0''$ E.; it is 699 feet above the level of the sea, and visible at the distance of 40 miles.

The Light on Caballo Islet is a Fixed Light, the bearing and distance of which from that on Corregidor we do not find in the notice before us. It is 450 feet above the level of the sea, but being a weak light cannot be seen beyond a distance of nine miles, and is screened so as to be invisible from any part of the Bay. The purpose of this light is to prevent ships from the danger of falling between Corregidor and Caballo Islet.

We shall look for the Government account of this Light, and hope for a good plan of the Bay on which to lay it down.

SUNKEN ROCK AT AMOY.—Her Majesty's steamer *Rattler*, which left this harbour for Shanghai, calling at Amoy with instructions for the *Salamander* to

proceed northward, on leaving the harbour of Amoy struck upon a rock not laid down in any chart, and received such injuries that she was unable to proceed on her voyage, and we understand it is the intention of Capt. Mellersh to beach her at Tae-tau, so as to ascertain the extent of the injuries she has received. The following note, giving the position of the rock, is from Captain Sir William Hoste, of H.M.S. *Spartan* :—

“*To the Editor of the China Mail.*

“H.M.S. *Spartan*, Hong Kong, March 25, 1853.

“SIR,—I shall feel obliged by your publishing, for the information of mariners, notice of a sunken rock upon which H.M.’s steam sloop *Rattler* struck whilst proceeding out of Amoy Harbour, and which is not laid down in the Admiralty charts. Position of rock by four cross bearings :—Joss-house, S. 37 E. ; flagstaff on Signal-hill, N. 46 E. ; north end of Kulangsue, N. 52 W. ; south end of Kulangsue, S. 52 W. It is quite a pinnacle, with only 2½ feet on it at low water, the top being of such small dimensions that the lead rolled off it into 6½ fathoms on the side towards Amoy, whilst on the side towards Kulangsue there are 8 fathoms within 15 feet of the rock.

“I have the honour to be, Sir, your most obedient servant,

“W. HOSTE, Captain and Senior Officer in China.”

DANGEROUS SHOAL IN THE PACIFIC.—The new shoal which is now in process of formation by marine volcanic agencies, bears south-west from St. Clement Island, about 35 miles, and is within eight miles of the coral reef indicated by the United States coast survey, but not down on the ordinary charts. As nearly as ascertained it is about half a mile in extent, lying directly in the track of the Panama steamers, and was seen by Captain Cropper, of the *Cortes*, and Mr. Healy, his first officer, as well as by the Commander of the *Pacific*. Captain Cropper witnessed the following phenomenon :—The sea around the shoal was as smooth as a floor, when suddenly a heavy column of water was projected into the air some twenty feet, appearing to be thrown up from a common centre, and, although white with foam, having no appearance such as ordinary breakers present. In an instant it subsided, and the water became as smooth as it was before. This was repeated several times, and leaves no room to doubt of the existence of a submarine volcano there. According to the observation made on board the steamer *Pacific*, the latitude of this new shoal is 32° 30' N., longitude 119° 8' W.—*Panama Herald*.

ST. CYRUS CHURCH, NEAR MONTROSE.—We understand that this church is being taken down, for the purpose of being rebuilt on the same site. We believe that it has not hitherto been used as a sailing mark, but in case it should have been known as one, the Rector has given notice of the above, and that the new church will have a higher steeple, and be finished in October next.

ARCTIC SHIPS.—We read in that valuable paper the *Shipping Gazette*, that the *Phanix*, Captain Inglefield, put into Queenstown, Ireland, on the 21st of May, on her way to Beechey Island, accompanied by the *Diligence* and *Breadalbane* transports, taking out stores and provisions for Sir Edward Belcher's ships. As Captain Inglefield is directed to return home by the end of the summer, we may now soon look for some very important information by him from Sir Edward Belcher, that will not only enlighten us with regard to that officer's discoveries up Wellington Channel, and his winter proceedings, but also as to the possibility of Sir John Franklin having taken that route to Behring Strait. Would that we might hear something also of the *Enterprise*

and *Investigator*, which ships entered the ice by Behring Strait, the latter in the summer of 1850, and the former in that of 1851, since which dates nothing has been heard of them. We are glad to learn that in the event of Sir Edward Belcher being disappointed in his exertions, (a result which has been anticipated,) and finding it necessary to abandon his search, full and complete provision will be left for these ships.

EDWARDS' PRESERVED POTATO. All who have used this excellent preserved vegetable speak in the highest terms of it as an article of diet, and especially its peculiar antiscorbutic qualities. When Sir James Ross came home in 1849 he deposited a large quantity of it at Whaler Point, which, happily for Captain Kennedy, was found untouched in 1852, and restored him and his party from a state of suffering by scurvy to health after a few days use of it.

HONG KONG TO NEW YORK. Mean of three passages made by the clippers *Swordfish*, in 89 days, *Staghound*, 92 days, and *Sea Serpent*, in 88 days, is about 90 days.

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill.

ENGLAND, South Coast, Poole Harbour, Captain Sheringham, R.N., 1852	-	-	-	2	6
SCOTLAND, West Coast, Kyles of Bute, Captain Robinson, R.N., 1846	-	-	-	1	6
WEST INDIES, Virgin Island, St. Thomas Harbour, Lieut. Lawrance, R.N., 1851	-	-	-	2	6
Ditto Greytown, corrected 1853	-	-	-	0	6
AUSTRALIA, Botany Bay and Port Hacking, Captains O. Stanley and Stokes, 1851	-	-	-	1	0
Ditto Jervis and Bateman Bays, Captain Stokes and Mr. Beecroft, R.N.	-	-	-	1	0
NEW ZEALAND, Nelson Harbour, Captain Stokes, R.N., 1850	-	-	-	1	6
Ditto Banks Peninsula, Captain Stokes, R.N., 1850	-	-	-	1	6
ARCTIC SEA, Sheet 1, Baffin Bay, 1853	-	-	-	2	0
Baffin Bay Directions, 1853	-	-	-	0	6

EDWARD DUNSTERVILLE, Master, R.N.

Hydrographic Office, Admiralty, May 23rd, 1853.

ERRATA.

We are requested to insert the following corrections relative to Mr. Forbes' Paper on the New Rig.

Page 1, line 9 from bottom, for "parallel," read "parrelled;" the parrell need not be explained to our nautical readers.

Page 2, line 7 from bottom, for "day foam," read "tay foong."

Page 3, for "longer," read "larger."

 " for "swing," read "sway."

 " for "binding," read "bending."

THE
NAUTICAL MAGAZINE

AND

Nabal Chronicle.

JULY, 1853.

GUAYAQUIL AS A PORT FOR REPAIRS.

The Guayaquil is a noble river, with eighteen feet rise and fall, and the banks at the town so steep that at low water spring tides a vessel a yard or two off will have from twelve to eighteen feet water, according to her position. In the dry season there are neither squalls nor rain. Thus far its natural advantages.

But, on the other hand, Guayaquil has neither dock nor slip, so that to do anything to a vessel's bottom she must be hove out; to do which requires falls and blocks, and there is but one set, so, should they be in use, the vessel must wait her turn.

There are no establishments in which rope or canvass are kept on hand. There is not a ship chandler's store in the whole place; there are few or no spars kept on hand, for the carpenters are mostly poor men who cannot afford to keep a stock.

On the arrival of a ship at Guayaquil, wanting repairs, if she wants spars a bargain must be struck with one of the spar cutters for those required. He starts to the forest for them. It will perhaps take two or three months before the trees are cut and at Guayaquil fit for working, especially if a large mast be required. Should the vessel want rope above three inches or sails, they must be sent for to Callao or Valparaiso. Copper, pitch, nails, &c., can be got and the work

done reasonably enough; but for anything beyond a few sheets of copper or caulking the Master must arm himself with patience.

The Government authorities sometimes throw difficulty in the way, perhaps properly, for they do that as little as they can. The law says if government work is to be done it must be done before anything else; and sometimes when your vessel is hove out, you have to ease her up, the captain of the port having taken the workmen for a government vessel. Submit you must, and the less you say the better; I have known them to be taken off a vessel's bottom when half an hour's work would have finished her: the vessel obliged to be eased up, and it was six weeks before the carpenters could be had to complete their job. I had occasion to get a bowsprit; there was no spar in the place that would make me one and I must have waited three months, until one was cut in the forest, but fortunately a Peruvian ship of 900 tons wanted a foremast, and the sound part of her foremast made a bowsprit for my vessel. But I also wanted a jibboom, for which I waited two months and paid 108 dollars, and this sum was considered very reasonable indeed.

Wages for caulkers are fourteen rials a day; those for carpenters ten to fourteen; which, I am given to understand, is cheap compared with other ports of the coast. Ship's sea provisions are difficult to be had; as before observed, there is no ship chandler's store, nor any person who keeps a stock of those articles.

Sailors also are very scarce, few caring to leave the coast, especially should you be going round the Horn and to England; as, having run from other ships, they know that their wages are forfeited to the owners of those vessels on arrival, and perhaps imprisonment awaits them.

The Government is very liberal; everything wanted for a ship is supplied at one per cent duty should it happen to be in bond; but there are no drawbacks, if once the duty is paid it must remain.

In addition to Mr. Peacock's sailing directions, as published in the *Nautical Magazine*, as there are no bouys on the Mola Bank or Payana Shoals, and the light on Santa Clara is not displayed, I would recommend every vessel if possible to make the Island of Santa Clara before dark; if the Island is not made, to keep the lead going and not shoal the water to less than eleven fathoms until the Payana Shoals are past. When you have hard bottom on the south side, with nine or ten fathoms, you are close to the Payana Shoals, after passing which run up in five and a half or six fathoms, soft bottom, bearing in mind when you have hard bottom seven or eight fathoms the next cast may put you on the Mola Bank!

In beating down at night you may stand towards the main into four or four and a half fathoms, and towards the Mola Bank until you get hard bottom, which will be in seven or eight fathoms, then go round or you are on shore. As long as the bottom is soft you are in the fair channel. Both night and day, up and down, the quality of the bottom is your best guide, not the depth of water; in soft bottom you are quite safe, with hard bottom too close to the shoals.

Commercial Regulations for the Port of Guayaquil.

All vessels ought to call at Puna for a pilot and there receive a custom-house officer who accompanies them up the river as far as the town, where he is changed.

At Guayaquil you anchor outside the line of shipping until visited by the Captain of the port, the health and custom-house boats. After receiving pratique the Captain of the port directs where the vessel is to be moored; which is done with thirty fathoms on each anchor, one up and the other down the river, the tides running very strong, especially at the full and change of the moon. As vessels dredge down the river, or in shifting berth, if the cables of the other ships were across it could not be done.

You present to the Collector of the custom-house two copies of your manifest and two copies of your list of stores, also a list of your crew to the Captain of the port, who, with the Doctor, musters and inspects them. The Collector of Customs signs and keeps your manifest and store list. You present the Collector of the custom-house with the same papers in Spanish a day or two after. The Collector leaves two custom-house officers on board, and you commence discharging the instant you are ready: there is no delay on the custom-house part.

The method of discharging is by balsas or floats. These are logs of wood lashed together, with a house in the centre, capable of containing about thirty tons of goods. These balsas come off to you at slack water and leave at the next slack water after you have loaded them.

A custom-house officer accompanies each balsa, and the goods are out of your charge from the moment they are in the balsa. The balsas are paid for by the owners of the goods, the custom being to have everything taken from the ship's tackles; and in loading cocoa or any cargo requiring a balsa to bring it, the same is paid for by the parties sending goods, who also send men to place it on the ship's deck.

These balsas are generally the residence of a whole family, including pigs, poultry, &c.; they are managed by two men, or a man and a boy, who seldom mistake hitting the vessel.

The port charges are very moderate, viz:—

	dollars.	rials.
For the vessel, per ton	0	2
„ cleaning the river	4	0
„ light of Santa Clara (seldom lighted)	16	4
„ Captain of Port, fees	10	0

The total charges on a brig of 264 tons register was 203 dollars, which, at the exchange of 3s. 6d. a dollar, is £35 10s. 6d.: that charge included shifting the vessel in the river three times, and a gratuity to the pilot who took the ship out.

The pilot charges may be put down at from two dollars to two dollars four riials per foot, according to the distance, but two dollars four riials is most ample.

The merchants' charges are five per cent on disbursements of the ship, four per cent on sales, two and a half per cent on guarantee, two and a half per cent to the auctioneer. Some houses charge fifty dollars for clearing the ship at the custom-house, which charge is usually mentioned before hand if intended to be made.

The general exports are cocoa, which is usually stowed in bulk, Peruvian bark, sarsaparilla, and Indian-rubber; a little sugar is sometimes sent to Valparaiso.

REMARKS ON THE PRINCIPAL PORTS AND ANCHORING PLACES ALONG THE COAST OF THE DOMINICAN REPUBLIC.—By *Sir Robert H. Schomburgh, Ph. D., &c. &c.*

(Concluded from page 313)

Ports and Anchoring Places to the North of Punta Engaño.

The following anchoring places, Cabeza de Toro, Bábaro, Los Ran- chitos, and Arena Gorda, come nearly all under one and the same category with regard to their practicability as loading places. During the summer months, when the trade wind is to the south of east, and calms are prevailing, there is no danger to be apprehended, and vessels expedite their loading in as short a time as anywhere on the coast; but during the winter months, when north-easterly winds are frequent, the vessel is not only endangered but the loading is rendered difficult, as days and days may elapse before a boat can pass from the anchorage to the land. Nevertheless, a vast deal of wood is loaded at the north-eastern anchoring places, and the Master who has accepted a charter-party in which one or the other of the above named places is included ought to be provided with good chains.*

The first rocky point to the north of Punta Engano is LOS ALGODONES, which does not afford any anchorage; probably in consequence of the configuration of the land and contending tides; the water is always here turbulent, and the white foam or froth has been compared to the appearance of cotton.

CABEZA DE TORO. The quantities of wood in the neighbourhood of this anchoring place cause it to be frequently visited by vessels. The reef affords two passages; the one to the leeward, called LA NAYBE, is even passable for schooners that draw no more than ten or twelve feet. Large vessels anchor outside the reef, in from ten to twelve fathoms water: sandy and rocky bottom.

BABARO, about six miles from Cabeza de Toro, is considered a better

* The brig *Patriot*, of Yarmouth, N.S., lost, in January and February, 1850, her anchors and chains at Cabeza de Toro, and had to return twice for new chains. The same happened to the brig *Isabella*, of Belfast, in March, 1851; and the brig *Victory*, of Liverpool, N.S., was entirely lost, on the 9th February, 1849, on that coast.

anchoring place than the former; the sea is somewhat calmer and the reef approaches more the land. Vessels lie in ten to twelve fathoms, distant one and a half to two miles from the land. The beach is sandy and the loading may be effected rapidly when there is no north-easterly breeze or heavy ground swell.

About nine miles north-easterly from Bábaro are

LOS RANCHITOS. The reef has two passages with about four to five feet water. Vessels lie outside in eleven or twelve fathoms of water, distant one and a half to two miles from the land. It is a sandy beach and a good loading place.

ARENA GORDA, about two miles from the former, has three passages through the reef, which a small sloop with five feet water can safely pass to the anchorage within; vessels of large burden lie from one and a half to two miles, according to their size, in ten to twelve fathoms water.

MACAO. All the remarks respecting Bábaro, Cabeza de Toro, &c., refer equally to Mácao. The anchorage is here still further off the shore than at Bábaro, and the place is much more exposed to the winds and sweepings of the sea. When I visited Macao there was no boat to enable me to procure soundings. I learned, however, that the vessels anchor about half a mile north of the reef, which, it seemed to me, stretched from Cabezote Barlovento in a line towards El Infiernito, and send their boats for the wood to the bight of the bay and to the mouth of the Anamuya. The two rocks high out of the water, called the Cabezotes, are excellent landmarks, and afford along them good boat passages. The passage for the bight of the bay, where there are some ranchos for the shelter of the labourers, is between Punta Macao and the Cabezote Barlovento; and that for the mouth of the Anamuya close to the Cabezote Sotavento, likewise called El Infiernito. At the mouth of the Anamuya is a bed of excellent oysters. The nearest habitation was, at the period of my visit, (in 1850,) at Calado Salado, distant about two miles from Macao.

The position of Punta Macao, deduced from observations which I took near the Ranchos, is in lat. $18^{\circ} 48' 0''$ N., and long. $68^{\circ} 29' 50''$ W.

There is anchoring place between Punta Macao and Cape San Rafael.* The latter cannot be mistaken. Nearly two miles inland from the Cape is a round hill, which, at the distance, has the appearance of being isolated; it is, however, connected with the southern shore of the bay of Samana by low land.

PORT JICACO or ENGLISH HARBOUR. Previous to my entering into a more detailed description of the Bay of Samana, I will allude to Port Jicaco or English Harbour, (Puerto de los Ingleses,) lying about eleven miles W.b.S. from Cape San Rafael. Here several vessels have recently taken wood on board. A rock, which rises above the reef that stretches from Punta Jicaco towards the Cays, is seen at a distance of two leagues, and serves as a mark to point out the passages

* Lieut. Raper, R.N., gives, in his table of Maritime Positions, (1849,) for Cape San Rafael, lat. $19^{\circ} 1' 0''$ N., long. $68^{\circ} 55' 0''$ W.

Barlo and Sotavento. At the same time a high double peaked mountain will be observed inland, bearing S.b.W.; keep the hummock between the two peaks as your mark, and come to anchor in five and a half to six fathoms, distant a quarter of a mile from the land. The anchorage within the reef is safe, and has the advantage that the vessel can leave with the trade wind, selecting the lee pass for her passage when standing out to sea.

It is not probable that a vessel would anchor at English Harbour without a pilot on board: should stress of weather oblige her to do so, great precaution must be taken when approaching the reef. The French man-of-war *Scipion* was lost here in 1782.

Round Point Mangle are Los Uberos Altos. When passing from Savana de la Mar to Hobero in 1851, the coast from Punta del Capitan to Punta de Mangle seemed to me more or less dangerous, and the only good port in that distance English Harbour. I had no opportunity to sound it but I took observations at the house of Senor Reyes, on the right bank of La Yeguada, which gave me for the lat. $18^{\circ} 58' 50''$ N., and long. $69^{\circ} 3' 37''$ W. The mouth of La Yeguada or Hobero is about half a mile south from here.

THE BAY or GULF OF SAMANA. This beautiful bay, which early attracted the attention of Christopher Columbus, opens between Cape San Rafael and Cape Samana*, and extends east and west nearly thirty miles, its breadth being between eight and twelve miles. At its western bight, a short distance from the southern shore of Samana, the Yuna, the largest river of the Dominican Republic, flows into the bay. There is, unfortunately, a sandy bar before it which at present prevents any larger craft than boats to enter the river. This bar has only three and four feet water, but having passed this impediment the river deepens, and boats that draw five feet may ascend to within a few miles of Cotuy.

At a distance of ten miles to the west of Cape San Rafael commences, near Punta Jicáco, a reef which extends, more or less interrupted in its continuity and in the shape of a half moon, north-westward to the small Cays Pascal, Alevantado, and Arena, better known under the name of the Banister† Cays, or, likewise, Los Cayos Alevantados; and from thence first south-westward, and afterwards S.E.b.S., towards Punta del Capitan, the western point of the Puerto de los Colorados of the old Spanish charts. Punta del Capitan is about seven nautical miles to the east of Savana de la Mar.

This formidable obstacle, which in some parts of its structure has

* Lieut. Raper, R. V., gives, in his Table of Maritime Positions, (published in 1849,) Cape San Rafael, lat. $19^{\circ} 1' N.$, long. $68^{\circ} 55' W.$, Cape Samana, lat. $19^{\circ} 18' N.$, long. $69^{\circ} 8' W.$: the distance between the two points would be therefore twenty-one miles, Cape Samana bearing N.W. $\frac{3}{4}$ N. from Cape San Rafael.

† These Cays have received their name from the celebrated English freebooter who defended himself here successfully against two English frigates, in 1690. Banister landed the guns from his vessel and placed them on one of the Cays, from whence he drove off the men-of-war, killing 120 men of their crews.

the appearance of a barrier reef, protects this basin against the heavy sea which otherwise every gale from the north and east would send into the bay; it breaks even every sea wave that a fresh breeze sends in. But it has, likewise, its disadvantages: the passage for vessels is narrowed in to a mile between Punta Cacao and Cayo Pascual (to the north-west of which, distant six cables from the north point, there is moreover a shoal with twenty-four feet of water on its lowest part) and opposes difficulties to a vessel of a large size that wishes to leave with the ordinary sea breeze. It is, therefore, advisable to stand out to sea with the land breeze.

The bay of Samana, within the reefs, affords sea room to the largest fleet. Besides the principal bay it has several lateral anchoring places, among which the Bahia de San Lorenzo or de las Perlas, on the southern shore, ten miles to the west of Savana de la Mar, is principally to be mentioned.

On entering the bay of Samana and coming abreast of Punta Cacao, which has a fort on its projecting point, give about an equal distance to the most northern of the Cays, called Pascual, and the point with the fort; you will then have from eighteen to twenty fathoms. A little to the south-east of the projecting point to the west of Cacao is the islet Bonhomme; here the bottom shallows to five and six fathoms. Having cleared this shallow and rocky ground, you deepen the water to fifteen fathoms and open the Carenero Chiquito, which, within, affords an excellent anchorage: but it is preferable to tow the vessel to her anchorage should the wind be unfavourable. On entering, keep the shore about a cable's length on your starboard, and let go your anchor when the little Cay Carenero Chiquito at Punta del Lirio bears W.S.W., distant two cables' length.

The dangers of the reef which extends to the south-west of Carenero Chiquito, and narrows in the passage to this anchorage, are clearly visible. There is a passage between the Cay and the reef.

The Port of Santa Barbara, the little town of Samana, is about two miles W.N.W. from Punta del Lirio. Your course after having cleared the Cays Levantado is N.W.b.W. $\frac{1}{2}$ W., with fifteen to seventeen fathoms water. The entrance is between Punta Gorda, known by some fortifications on its point, and the Cay Paloma, the most south-eastern of the three that lie before the harbour. A reef stretches, in a triangular shape, from Cay Paloma, with its point towards Punta Gomera, to the larger Cay, called Carenero Grande. From Punta Gomera, on the opposite side, extends a reef nearly half a cable's length to the south-west. Between these two reefs, affording merely a pass of two cables' length, the vessel has to enter, selecting for her course about the middle of the channel, but somewhat closer to Punta Gomera than to Carenero Grande. Having doubled Punta Gomera, you will observe the small rivulet Aguada and, a short distance beyond it, a point with Fort Santa Barbara; continue your course, keeping the shore a cable's length on your starboard, and let go your anchor in six or five fathoms, mud, when the little town bears nearly north.

You may likewise anchor between Punta Gomera and fort Santa Barbara, off the little river Aguada, in six fathoms, mud.

The small town of Samana lies partly on the bay partly on the acclivity of the hill. It consists of a few habitations of every description, from the small hut to the house built of boards and covered with shingles. The church is dedicated to Santa Barbara; the Wesleyan Missionary Society of London have here a chapel and a residence for the Missionary who visits occasionally Samana from Puerto Plata. According to a census, taken in 1851, the whole population of Samana consisted of 1,721 souls, among whom there were 300 Americans emigrants of colour and their progeny. The rest are Dominicans of French and Spanish descent.

Samana possesses a custom-house for entrance and clearance. It has a Commandant and a regular garrison, as the Dominican Government have converted it into a kind of penal settlement.

Yams, batates, and other ground provisions may be procured at a very moderate price when in season; fresh meat is only to be had once a week. The place stands in weekly post communication with the city of Santo Domingo.

The anchorage off the little town does not leave any thing to desire; a vessel may be here repaired or careened with every facility; but the situation with a view to health is ill selected. Punta de los Corosos offers a much finer site and a healthier air than the present town. This point, which was known in former charts as Punta de los Martiniquenos has, moreover, fine springs and an extensive anchorage to the east.

It is requisite for a vessel that wishes to anchor in any of the smaller bays to take a pilot from Samana. Some English vessels have recently loaded on the north side of Samana, which does not offer in the whole extent of its coast, from Cape Samana to the east point of the bay of Yaqueon, (Jackson,) a single safe anchorage.

These bays and beaches are, commencing from Cape Samana turning northward, Las Galeras, where small vessels may load if the weather is good, Rincon, Puerto Escondido, Boca de San Juan,* Hermitano, Limon, Punta de los Pescadores, (where, in calm weather, small vessels may anchor,) Boca del Estillero and de Lateriana, and Punta de Moretes. Yaqueon (Jackson) is the only good port in that direction, being somewhat protected by the Cay that lies before it. Near the western point of Jackson is the Boca del Gran Estero, which formerly communicated with the river Yuna near its outlet into the bay of Samana. This communication was, towards the end of the last century, resorted to by the inhabitants of Samana to avoid the coasting round Cape Samana in their trading voyages to Puerto Plata, Monte Christi, and Cape Francais. The canal is now entirely blocked up; however, there can be no doubt that it might be opened again with little expense. This communication between the bay of Samana and

* The Brazil Packet, of 172 tons, (since lost,) has loaded here.

the sea, on the north, has probably caused the peninsula to be represented by Charleroi as an island.

The north coast from Samana westward towards Puerto Plata is almost a desert and only at great distances, as under, inhabited by people.

MATANZAS is a good port, but not resorted to; indeed the only place, following the coast from Samana, passing old Cape Francois and Punta Macoris, to Puerto Plata, where vessels anchor and load at present, is the port of

CABARET, formed by the Points Cabaret, to the windward, and Goleta, to the lee; the two points being a mile and a third apart. It has a formidable reef, which stretches from Goleta Point south-eastward towards Cabaret Point. Outside, or to the north of this reef, is a sandy shoal, with only 17, 18, 19 feet water, and a ledge of rocks with only 10 feet, between which and the outer reefs the vessel has to pass to her anchorage. There are two passes between the rocks in the offing: the one is called the lee pass, the other the windward pass. The lee pass is considered to be thirty fathoms wide, clean, with five to six fathoms water. Vessels anchor from one to two cables' length from the shore, in four or five fathoms water. The anchorage is, however, foul, and good care should be taken to select a proper berth for the ship; the tide rises three feet. On standing out to sea, a buoy is always laid upon the lee edge of the middle rock for vessels that are deeply laden. Cabaret has been of late much resorted to as a loading place; and, to my knowledge, a vessel of 400 tons has taken a cargo on board there. The British brig *Brazil Packet* was lost, while at anchor, in August 1851, during a severe gale.

Some endeavours have been made to include the mouth of the Yasica among the loading places on the north coast. This river enters into the sea about three miles and a half S. 55° W. from Cabaret Point. The position is entirely exposed; and a British vessel, the *Speed*, which had entered into a charterparty that included Yasica, protested against loading there, and procured certificates that the Yasica was not a fit place for vessels to take in a load. It must be likewise observed that at certain seasons the miasma on its mouth is highly detrimental to the health of the ship's crew. The wood is usually taken from the Yasica overland to Cabaret.

SOSUA and BRIGANTINE. The other ports and loading places between Cabaret and Puerto Plata are Sosua and Brigantine. They are seldom resorted to. I have not been able to procure any information how far they are accessible.

The only custom-house where a vessel can enter for loading on the north side is

PUERTO PLATA. This port is narrow and fills up very rapidly, rendering the discharging and loading of vessels very tedious. It is not possible to come closer to the land, with the launch, than a cable's length when the water is low.

Vessels bound for Puerto Plata endeavour usually to make old Cape
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Français, keeping a W.N.W. course until the summit of Mount Isabel de Torres bears S.b.W.½W., distant four miles. They then steer for the entrance, keeping the rocky weather point, on the summit of which is a fort, in one line with the summit of Mount Isabel, until they lessen their soundings to 11, 10, 9; a rock above water, distant five cables, will then bear N.W.; let your course then be S.W.½S., passing between the two reefs, and let go when you have lessened your depth to four fathoms, soft mud, if your vessel requires such a depth, or to two and a half fathoms if of smaller size. With the latter soundings you are three cables from the shore. The Admiralty have published a plan of Porto Plata from the survey of Captain Richard Owen, R.N., commanding H.M. sloop *Blossom*, in 1830.

The town of Puerto Plata contains about three hundred houses and two thousand inhabitants. The trade is very considerable, principally in tobacco, and a number of foreign merchants are here established. The greatest part of the tobacco which is exported is cultivated in the valleys of the rivers Yuna and Yaque, that flow on the southern side of the mountain chain which traverses the country from Monte Christi to Samana. The produce has to be transported over the high mountain chain, on the backs of beasts of burden, at so great an expense that the freight from the place of cultivation to Puerto Plata sometimes approaches in amount the value of the tobacco. It is, therefore, in agitation to transfer the trade to Monte Christi, which may be reached from Santiago with carts at a lower freight, although the distance is greater.

The anchoring places between Puerto Plata and Punta Isabela are SOUFLE and PUERTO CABALLO. I have learned that the latter is a good port although small and affords much better protection than either Puerto Plata or Isabela. The entrance of Puerto Caballo is narrow, but it expands within to a fine basin. Columbus visited this port in 1493, and gave it the name of Puerto de Gracia.

ISABELA is an open roadstead with shallow ground to a great extent from the shore. Vessels have to lie at the distance of a mile and a half from the shore, the mouth of the river bearing south-east. They are somewhat protected by the northern point against easterly winds, but not against the northern gale; besides this, there is a reef and some sunken rocks in the anchorage.

Columbus built here, near the north-western point, the first town in the New World, and gave to it the name of Isabela. There are still some ruins of the castle and some of the houses to be seen. The cupidity of the neighbouring inhabitants has not respected these venerable vestiges; the walls have been broken down, and the materials carried to Puerto Plata and other places to erect houses with them.

The shores from Isabela westward to La Grange are girted with reefs and are not visited. The Grange is a remarkable coffer-shaped mountain about eight hundred feet in height and isolated. It is an excellent land mark, not only for vessels that wish to anchor at Monte Christi, but likewise for such as are bound through the windward

passage, or to Cuba by the Turks' Islands and Silver Cay passages. According to my observations, the north-western high point of La Grange is in lat. $19^{\circ} 54' 15''$ N., long. $71^{\circ} 37' 48''$ W.

JICAQUITO. To the east of La Grange, lies, between it and Punta de la Fregata, a splendid bay called Jicaquito, of which my friend Mr. Heneken, who lately explored it, writes me that it is spacious and that the reef serves to protect it effectually from the ocean swell; and, with a telegraph upon the Grange, it may communicate with other heights along the prominent points of the coast, even beyond Sumana.

A great mangrove swamp extends between the Grange and Monte Christi, but, according to the sketch which Mr. Heneken has transmitted to me, a canal communicates between Jicaquito Bay and Monte Christi, which, he says, is clean with a hard sandy bottom and a depth of from two to four fathoms. The rise and fall of the tide is three feet.

It is much to be regretted that Mr. Heneken had not the means of sounding this bay; however the attention is herewith drawn to it, and, as it is under contemplation of some of the Puerto Plata merchants to establish themselves there, Jicaquito Bay may prove perhaps on closer examination a better port than Monte Christi.

MONTE CHRISTI was discovered by Columbus the 4th January 1493, who gave that name to the high hill called La Grange, of which I have spoken, and which forms the eastern point of the harbour. The western point, distant nearly seven miles from the former (about 6950 fathoms), is called Sandy Point (Pointe des Dunes), and the bay is nearly a mile and a half (1490 fathoms) deep. Doubling the Grange, at a distance of about one mile (950 fathoms), is the islet of Monte Christi, not quite four cables' length from the shore. The channel possesses 5, 4, 2½ fathoms, but on the southern point of the Cay, about 2½ cables' length from it, a vessel may anchor in 6, 7, 8 fathoms, protected against the breezes and the swell of the sea. The ground shallows rapidly and renders the discharging and taking on board of cargoes nearly as difficult as in Puerto Plata.

To the S.S.E. of the anchorage is, close to the shore, a battery, from which it is 1852 yards to Fort San Francisco, which overtops the small town of Monte Christi. It was, during the middle of the last century, a flourishing place; and even during the American war of independence its trade was very considerable. At present it is in ruins and nearly abandoned. The project of some of the Puerto Plata merchants to make it their shipping place may revive the trade. A great drawback is the scarcity of fresh water, which can only be procured at a distance of ten miles. The river Yaque, which Columbus called the Rio del Oro, disembogued formerly into the Bay of Monte Christi at a short distance to the south of the town, but it changed its course in the commencement of this century, and falls now in the Bay of Manzanilla, about ten miles to the south of Monte Christi. A larger population and European ingenuity would remedy this great want without resorting to such a great distance for the supply of water.

BAY OF MANZANILLA. This splendid bay is about four miles to

the south of Pointe des Dunes, and offers one of the securest and best ports in the Island of Santo Domingo. It is open to the west, and well protected against the heavy swell by the small Cays called the Seven Brothers. The river Yaque enters it on its eastern part; and on the southern is the Massacre or Dajabon River, which, in former years constituted the boundary between the Spanish and French Colonies, and is claimed as such by the Dominican Republic. There are no dangers in that splendid bay. The Barrel of Beef is an Islet above water, and there are four fathoms of water within a cable's length of it. The tongue of land named Punta Manzanilla, or Punta Jicaco in former charts, sunk in the earthquake of the 7th of May, 1842. The anchorage to the west of it has suffered no change: here you may lie at your option in 7, 8, 9, 10 fathoms, mud. The Admiralty have published a plan of this splendid port, which, for a space of four miles, affords good and secure anchorage.

In consequence of the hostilities that exist between the Dominican Republic and the Empire of Hayti, this bay is not resorted to; but, its advantages being so great in every point of view, it is much to be regretted that the merchants of Puerto Plata do not select it for their entrepot.

The foregoing remarks on the dangers of the Dominican Coast have been made with impartiality. These dangers are not greater than are met with on many other coasts, and are of less significance than at the Bay of Honduras, where a norther arises without previous warning, and settles the doom of many vessels engaged in taking off the cargoes of mahogany. A danger properly known may be avoided by watchfulness and the requisite caution. Difficulties of a greater magnitude than those which threaten the vessel at Santo Domingo, would not prevent the enterprising spirit of our Mercantile Marine to refrain from loading there if necessity should require it. It is the want of a good survey and the knowledge of the danger the Master has to encounter which act injuriously; and I have found it by no means an agreeable occupation to arrange disputes, in my official capacity that had arisen between the Master and the Freighter, when the former assured me he had been entirely ignorant of the difficulties he had met with, and, had he been aware of it, he would never have accepted such a charter.

It has principally been my aim in this article to guard the Master of a vessel against the dangers he has to encounter, and not to prevent him from loading at such and such a place on the Dominican Coast. I am aware that vessels have loaded at all the places I have here enumerated, and that others will probably load there again. If, with the knowledge I have imparted, the Master nevertheless accepts a charter-party, he cannot plead that he was unacquainted with the nature of the coast where he was to take in his cargo.

It would be better for the shipping and mercantile interest that such places as the Port of Santo Domingo, Caldera, Ocoa, and Baraona, to the west; Cumayasa and Romana, to the east, were only resorted to by ocean vessels: and that the freighters would employ droghers to

bring the cargoes from other places to the above ports where large vessels lie safely at anchor. The Insurance Companies might then reduce their premium upon wood shipped from the Coast of Santo Domingo, and the shipper would gain, by a less rate of insurance, the extra freight he has to pay to the drogher.

LOSS OF THE BRIG MARY AT NATAL, WITH EARLY RECOLLECTIONS
OF THAT SETTLEMENT.

(Continued from page 303.)

Being now all collected together, we diligently set to work erecting our houses at Townsend, and making the necessary preparation for building a vessel. Numbers of the natives now began to collect about our little settlement, and evinced great astonishment at the rapid progress we made in our operations, and at the ease and expedition with which we felled the largest trees, and reduced them to the size and shape required. The native artizans display much mechanical skill and ingenuity in the manufacture of various articles in wood and iron, producing many curious and even elegant articles of use, when the simple nature of the tools employed in their manufacture are considered. These chiefly consist of iron hoes, assagais (spears), and elaborately carved wooden bowls and spoons; also ivory rings, worn as ornaments on their arms, and snuff spoons. These manufactures, though generally well executed, employ much time, patience, and labour, and indicate much mechanical genius. They must also possess a knowledge of smelting metals, as their persons were frequently seen adorned with brass and iron balls of native manufacture, evidently cast in moulds. For this purpose they employ stone crucibles, and a very simple contrivance for bellows, composed of two leathern bags; at the bottom of each is inserted a tube, generally a bullock's horn, while the bags are raised and depressed by hand, causing a strong current of air to be forced through the horns, by which means a very powerful heat is kept up in their rude furnace, which is simply a hole made in the ground and filled with charcoal.

Many of the natives now frequently visited us, and would collect in groups on the beach opposite our stranded vessel, which each high tide had successively surged nearer the shore, until she was now within twenty yards of low water mark. They seemed to look on her huge mass with apparent awe and wonder; many and amusing were their speculations about her hull. Some said it was not the work of men's hands, but a sillwana (wild beast) that lived in the ocean, considering us a species of amphibious animals that lived within it. At first they imagined our clothes grew on our backs, that our flesh was soft and pulpy like that of an oyster or shell-fish, until they had convinced themselves by pinching it between their fingers and thumb that it was flesh and blood like their own, differing only in

colour. Their attention was particularly excited by the figure-head of the wreck, a well finished female bust painted in colours. Their wonder and astonishment on seeing it was great, particularly of those who had the courage to venture on board to survey it more closely; but we could not on any account prevail on one of them to touch it, nor could we at first persuade them of its being made from a piece of wood, such as grew in their own forests. They have not the remotest idea of painting or sculpture beyond that of staining their wooden vessels black or red with a species of vegetable dye. Seeing that the figure-head of the *Mary* excited such a lively interest in the natives, Captain King resolved to have it carefully unshipped, securely packed, and forwarded as a present to his Majesty, to give him some idea of the *beauty of our fair sex*, as he had made some curious inquiries as to the character and condition of our countrywomen.

Many of the Mattabanas people voluntarily came and assisted in the thatching of our houses, and at this work proved very expert and able assistants; and when we manifested our appreciation of their services by distributing among them some beads and trinkets, they were delighted and redoubled their energy. By this valuable assistance we were enabled to complete our little village much sooner than we expected. It consisted of one large building, about twenty-five feet long by fifteen broad, divided into several compartments for dormitories, two smaller buildings, and two native huts.; the two smaller buildings in the European style being set apart for storing the sails and cordage saved from the wreck. These having already sustained considerable damage from washing in the surf and exposure to the weather, had become objects of our solicitude and preservation, as the only material with which to fit out our new vessel, should we be so fortunate as to see this accomplished. Two native huts were erected for the accommodation of the natives who had attached themselves to our service, in preference (as I have before mentioned) to returning to their native masters, and for the lodging of messengers or visitors from the King.

Our habitations thus completed, it only remained to remove our effects from the tents at Sandy Point; but as this work had to be done by our boats, these on being launched were found to be so leaky that considerable delay was occasioned until they could be caulked and otherwise repaired so as to be in a fit condition for the transport of our stores across the channel of the harbour.

The general appearance of the natives on this part of the coast of Eastern Africa is so favourable, and particularly of the Zoolas, who are a well made, robust, muscular, and powerful race of men, perfectly devoid of the characteristic features that distinguish the African negro, that really with the exception of the colour of the skin they might justly rank with the most perfect European. Their well proportioned figures and prepossessing features, with the high expansive forehead, denote much physical as well as intellectual capacity. They are capable of enduring great fatigue and privation; while the young lead an active, temperate, even life, their physical capacity becomes

fully developed, and it is seldom or never that any deformity is to be met with. Bold and manly in their bearing, and evincing much candour and openness in their countenance and deportment in their social relations, there is also much kindness, affection, and generosity in their character, and even gratitude to those from whom they have received kindness or attention, and they seldom fail to return it when the opportunity offers for doing so.

Faithful and obedient to his superior, the Zoola manifests no cringing servility in his manner, maintaining a bold and manly independence even in the presence of an enraged chief, awaiting the sentence of death from his lips. He will maintain a dignified and manly bearing with an apparent fearlessness of confronting death, that claims admiration, and is seldom to be witnessed in other than the true Zoola character. When accused the Zoola will boldly defend himself with an animated manly eloquence, devoid of all cringing or humiliating supplications for mercy; for these are deemed cowardly, and unbecoming to a Zoola soldier. But the most peculiar trait in the Zoola is a passionate fondness for cattle, and in blending together the herdsman and warrior. His riches consist in the number of his flock; and his whole ambition and energies are turned to the study of its increase and preservation. No miser is more wedded to his gold, or derives more pleasure from contemplating his hoarded store, than the Zoola when he is surveying his flock as it passes before him, or is quietly contemplating the animals as they browse on the choicest pasturage. Whilst he is in possession of a flock the Zoola has all his wants supplied and all his heart desires, as from them he derives his food and clothing, and indeed every comfort and luxury that he knows or wishes for. When not attending his chief in war, most of his leisure hours are passed in herding his flock. There is nothing degrading to the character of the greatest chief to be thus employed, and no matter however numerous his possessions may be, each one of his flock is as well known to him as his children. So familiar is he with every little mark and spot on the skin, or the turn and bend of the horns, that one out of a thousand or two would be immediately missed. This says much for their power of observation; and it is a standing measure of the great wealth and affluence of a chief when it can be said of him that he does not know all his own cattle.

Every man being both herdsman and warrior, is trained to the use of the spear and shield from his youth. They lead an indolent kind of life, particularly during the summer months, when the weather is generally very hot; and they sleep away their time in listless apathy while the females perform all the drudgery, being literally the hewers of wood and drawers of water. In time of peace the men employ themselves either in herding the cattle or journeying to the king to present themselves at head quarters, their principal object being to feast on the royal bounty, when tired of the milk and vegetable diet at their homes; for it is a rare occurrence that a Zoola can find it in his heart to kill one of his own flock, however he may be pressed by the wants of himself and family. The soldier has thus the privilege

of removing at pleasure to head quarters, where he is fed as long as he chooses to remain, his only employment being feasting, dancing, or sham fighting. It is the duty of a certain class of officers to report to the head Captain, or his Majesty, the number of warriors in attendance at the Ize kashla, (King's residence,) and a proportionate number of oxen are slaughtered daily for their maintenance.

It, however, occasionally happens that his Majesty, when tired of the pomp and parade of military display, and to enjoy his ease and quiet, is desirous of reducing the number of his warriors in attendance. In no case, however, does he issue any public orders to this effect, but adopts a very effectual means of ridding himself of the burthen of superfluous numbers, either by reducing or entirely stopping the supplies, so that the garrison becomes shortly starved out, and whole companies of these attendants are soon seen wending their way homewards. In the course of my long residence with the King, I have had frequent opportunities of seeing these clearings out of the garrison; and many distressing scenes occasioned by hunger have come under my observation among some who have persevered in staying with the anxious hope of reaping a harvest when the King (as they said) opened his heart.

Though the Zoola country abounds with game of almost every description, hunting forms no part of the native pursuits, either as a source of pleasure or profit. This can only be accounted for by the aversion which the Zoola has for all animal food, excepting that of oxen. In this respect he differs from all other Caffre tribes around him; the pursuit of game with a great number of those tribes being not only followed as an amusement, but as a means of subsistence.

The King occasionally indulges in hunting the elephant and the hyena, with which the country about Natal is much infested. On one of these occasions I had an opportunity of being present, and came off with a very narrow escape of my life. An ailing ox had been slaughtered, and left in the thicket of a ravine close by the royal village as a bait to attract these midnight prowlers. This is speedily known to the natives by the loud chattering and laughing of the animals when they meet with food, which never fails to attract to the spot a large concourse. But often also the tiger and panther is drawn to it; the latter often appropriating to himself the booty to which the hyena's merriment attracted him. The resemblance to the human voice in the time of merriment of this animal's noise over its prey, and particularly when eating, has indeed justly obtained for it the name of the laughing hyena. But the affair to which I alluded was this. Knowing the preparations that had been made for the evening's sport, I determined to avail myself of the opportunity to witness it. The night was calm and serene, not a breath of wind moved the still leaves of the forest, while a bright full moon reigned in the cloudless sky, and nature seemed hushed to a death-like repose. Everything seemed propitious for the huntsmen, and I was impatiently waiting and listening for the order to move. About midnight I had just fallen into a doze, and a confused dream of wolves and Caffre warriors had taken possession of

my thoughts, when I was suddenly awoke by one of my native companions telling me he thought the parties were on the move toward our ravine. Up I started, soon rubbed the sleep from my eyes, and seizing a stout club and a couple of assagais, followed by my two companions sallied forth in the direction of the sport. Here and there I could perceive dark moving masses stealing noiselessly along, and though consisting of upwards of a thousand to fifteen hundred Zoolas, they moved on with the silence of shadows, producing an effect on my mind in the stillness of the night that I can never forget. It was a time when the falling or rustling of a leaf might have been heard on every side. On approaching the ravine the laughing and chattering of the hyena became more audible, on which my native companions fell back, and entreated me to do the same; but I was too much engrossed with the scene and bent on seeing the sport, and to throw the assagai myself, to listen to their salutary advice. So on I went, and took up my position on an eminence looking down on the ravine whence the noise proceeded. Here and there around me, at yet considerable distances, I could observe approaching masses of the natives. But soon I heard a bark of consternation from the ravine; the approaching squadrons on the windward side had been scented by the wily hyena, and the change of their tone, with an occasional dead pause, intimated their sense of an approaching enemy. I was all excitement and anxiety to see the game started, and little dreaming of the perilous position in which I had placed myself, when the loud yell of the Zoola war-whoop displayed the object of my solicitude and the danger of my position. A stricken hyena came bounding past me so close as almost to brush me with his tail, the eyes starting from his head like balls of fire, and his tongue nearly dragging on the ground. I had scarcely time to get on my feet and raise my assagai to have a throw at the animal, when a shower of these missiles fell thick as hail around me. The animal was surrounded on every side, and the spot on which I was posted was becoming the centre of the fray, so that I was in as perilous a position as he was. Indeed it was a miraculous interposition of Providence that I escaped unhurt midst the shower of spears that flew over and around me, being of course aimed at the pursued wolf. Fortunately my foot tripped and I fell flat on my face to the ground, by which the missiles passed over me. The result of the hunt, however, was the destruction of three hyenas and several men severely wounded, by being like myself too far in advance of the chase.

The mode of attacking these animals is that of surrounding them, and approaching on them simultaneously in every direction, by which, as may be expected, others suffer from the spears thrown besides the chase. The King enjoys the sport, and generally directs the movements of the hunters, remaining himself a distant spectator with his body guard.

The ingenuity of these people is evident in their villages, although their huts are anything but comfortable. The building and repairing of the hut, and the erection and repairs of the cattle fold, next constitute the employment of the men. The huts are of a compact wicker

work, circular in form, and much in the shape of a beehive, averaging from ten to twenty feet in diameter; the latter being the size more generally of those occupied by chiefs, while the former is the average size. They are very neatly covered with thatch of a long tough grass, and the floor, composed of a mixture of mingled clay and cow dung, is of glossy smoothness, having even a bright polish. The fire is in the centre of the dwelling, on a circular elevation above the surface of the floor, but there is no chimney or any aperture for the smoke to escape, so that it finds its way through the roof and thatch of the huts, or out by the door, which is a small aperture of about eighteen inches, through which one has to crawl on hands and knees. There is generally a dense cloud of smoke floating within a foot or two of the floor, that renders it impossible to sit up, and the only remedy against suffocation is to lay flat on the floor.

The cattle fold is a circular inclosure, varying in size according to the wealth or possessions of the proprietor, as this is not exactly determined altogether by the actual number of cattle belonging to the chief of the village or his dependants, but frequently by the number of its inhabitants, arising from the manner in which the village is constructed. Considerable attention is paid to the warmth and comfort of the herd. The sloping faces of hills, and a dry, porous soil is generally selected for the site of the fold. When this has been determined on, the working commences by sinking a double row of posts into the ground, generally of five to six feet in height; the space between the posts is then compactly filled up with branches and boughs, generally of a species of thorn, forming a close and solid fencework, which when neatly arranged and evenly cropped has a very pretty appearance, very like a natural hedge. Outside of this fence the huts are then built, completing the entire circuit of the cattle fold, while outside of the huts another fence or hedge, similar to the first, is thrown round, by which contrivance the cattle are doubly protected from the attacks of wild beasts, the huts and two fences being their defence. This constitutes the whole external economy of a Zoola village. As it often happens that either by long droughts and the failing of pasturage they have to remove and seek a more fertile spot for the preservation of their flock, this simple mode of erecting their habitations has been found most suitable to their wandering life.

The Zoola is even courteous in his manners, and on meeting his countryman on the road never fails to salute him in a friendly way with "Saga bona wintoo," (I am glad to see you, friend,) and they partake with each other a friendly pinch of snuff, an article which every Zoola adult, male or female, is passionately fond of, and with which they invariably provide themselves for a journey, the box being either carried in the lobe of the ear or suspended round the neck. When meeting his superior or a chief, the Zoola respectfully turns aside, and stands erect like a soldier presenting arms until his superior has passed on. He salutes him with "Etumgan," a word of which the nearest import translated into English would be, "Your servant, master."

Every Zoola when travelling is armed with a miniature shield, and two or more sticks with nobs at the end of the size of a man's fist. These in the hands of the Zoola are formidable weapons. He can throw the short nob stick with such precision as to bring down the smallest bird on the wing, and with it he can defend himself against any assault. They are great adepts at single-stick, and can so admirably defend themselves as to render it almost impossible to get a blow to reach their person. They have often put a stick into my hand and given me permission to hit them as hard as I could, but although having some proficiency I hardly ever succeeded.

As no written records exist among the Zoolas, the history of the past is lost in the mist of ages, or only preserved by a vague, uncertain, and confused tradition, which only leaves us to fill up the blank by conjecture. Their fondness for their herds, and the great anxiety and solicitude evinced for augmenting this stock, together with the respectable feeling with which herding is regarded among them, would argue that they have been long a pastoral race, and that warlike enterprise has only emanated from the ambition of their chiefs; not with the view of enlarging their territory by conquest, but to enrich themselves with the cattle of their neighbours. The several bloody and exterminating wars of Shaka appear to have had no object in view other than to enrich himself with cattle of the conquered tribes; to obtain these was a sufficient incentive to engage in the most daring and arduous enterprise.

The religion of the Zoolas is very vague and unintelligible, and to a traveller passing through the country might seem as if they had no religion, as they generally hold the name of a great chief sacred, and swear by it. But it is now pretty generally known that there are no people, however rude or barbarous, who have not some sort of religious notion or form of worship, combined with a superstitious dread of invisible agency working secret influence on their destiny. A little acquaintance with the Zoolas tends to confirm this truth, and that they are no exception. The most pernicious and baneful superstitions, however, that exist among the Zoolas is their belief in witchcraft, and that human beings, through the agency of inferior animals, can work the most deadly purposes on their fellow creatures. The animal employed by the Umtagatie (Evil One) for these deadly purposes is the Impaka (wild cat). One of these creatures seen by any accident near their dwelling is ominous of some dreadful calamity, and throws the whole village into consternation.

This superstition, which too often causes the effusion of much innocent blood, is fostered by a vile set of wretches called Enguagers, (Prophets, or Soothsayers,) who live by keeping up this monstrous delusion. The Zoola believes that the disembodied spirit of his ancestors, father or grandfather, exercises a secret influence on his destiny. Hence when attacked by disease and long suffering on a sick bed, he freely sacrifices the fattest of his flock to the manes of his ancestors. The animal thus selected as an offering has to go through a special religious form, causing the poor beast a cruel and often protracted

death. The morning or evening is generally the appointed time, as most propitious for the occasion. The animal is then driven immediately opposite the sick man's hut; his nearest of kin then arms himself with a spear, with which he goes up to the animal and plunges it into it near the left shoulder. The blow in this case must on no account be repeated, and the poor beast often undergoes many hours of agony. The person who inflicts the wound then addresses a long prayer or appeal to the spirit in Hades for the recovery of the patient, which is generally continued until the animal expires. It is then cut up, the gall being sent into the patient, a little of which he drinks, and then anoints himself with the remainder; the gall sack is then bound round his wrist as an amulet to prevent the progress of the disease.

The four quarters of the slaughtered beast, together with the hide, hoofs, and horns, are then carefully deposited and shut up in a hut set apart for its reception; and there it is kept for several days, or until it becomes quite putrid and offensive. It is then taken out and eaten by the women, or lower order of the natives; or if too far gone for consumption it is carefully buried.

In going to war, or about undertaking any perilous journey, the Zoolas have recourse to these sacrifices to the spirits of their ancestors. The poorer class who have not cattle to offer, in their emergencies have recourse to chewing a bitter herb, with which they besprinkle their breasts, arms, and legs; offer up petitions, and invoke the spirits to assist them, or to alleviate their sufferings. After having performed all these religious ceremonies, or often repeated them without any good effect, the superstitious natives then attribute the visitation to the workings of the Umtogatie and his Impaka. Recourse is then had to the Eveyonga (Witch Finder) to point out the Umtogatie, when if the patient happens to be a chief or a person of consequence, some innocent person, who is perhaps obnoxious to the Enguager, is singled out as the victim of this diabolical superstition.

Their traditions respecting the creation of the human race are simple and singular. They say, the germ from which proceeded the first human being was deposited in a reed, or hollow cane, that grew on the margin of a clear and beautiful stream, by a large and splendid bird, which having accomplished its mission flew away into the immensity of space, and has never again been seen upon earth. They describe this bird as the largest and most beautiful of the feathered creation, and speak of it with a degree of reverence, blended with a mysterious air, from which one might infer that at some remote period it had been an object of religious worship, but now almost obsolete. However it is supposed this bird will again visit the earth, as the herald of some great phenomena.

Such is the simple tradition now extant as relating to the origin of the human race, but there is no doubt that it has lost much of its original importance. Small as the remains now are, it presents a wide field for conjecture; and whether it may have some remote reference to the finding of the great legislator of the Jews in the bullrushes, or in contemplating the ever mutable state of mundane things, that as

the aggregate result of cause and effect are constantly following some cycle of vast extent, it may reasonably follow that the reactions on human beings are comprehended in the same necessary system, and that all the events and phenomena we witness in the existence and condition of human beings are the successive evolutions of an extended series, which at the return of some vast period repeats its everlasting round through the endless flux of time, to view those vague superstitious notions as the corrupted remains of a higher and more intelligible religion, already highly advanced in some distant age of the world.

The Zoola when advanced in years becomes grave and thoughtful. Indeed in all his actions he seems guided by grave deliberation, and undertakes nothing in a hasty manner, or without giving it serious consideration. The old men take a pleasure in raking up the memory of the past, and of conversing on subjects that engross their attention in their youthful days. From these I obtained many amusing and interesting accounts of the early wars of Shaka, in which my communicants were actors; and traditions that descended to them from their fathers, that by the vicissitudes of time and the revolutions effected by Shaka in the policy and government of the Zoolas, will in all probability be lost to the present generation; while the brilliant warlike exploits of Shaka will absorb or eclipse all their traditions, and will no doubt be their wonder and admiration for ages to come.

[We find the following in the daily prints, respecting some of these Indians, now in London.—ED.]

The Zoola Caffres, now performing at the St. George's Gallery, have had the honour of attending at Buckingham Palace, by royal command. Arrangements were made for the exhibition of the peculiar dances and evolutions of these interesting and extraordinary people in the riding school. The royal party, which consisted of her Majesty and his Royal Highness Prince Albert, her Royal Highness the Duchess of Kent, all the royal children, and the members of the household, appeared greatly interested by the novel character of the exhibition. At the close of the performance, before the retirement of her Majesty, the chief addressed her Majesty in his native language, in a speech of which the following translation was made by the interpreter, Mr. C. H. Caldecott:—"Houn Inkosi Kasi M'Angées (Oh, great Queen of the English!) This day a great honour has been conferred upon the people of Zoola. The nation great in battle, and high above the other nations of our country, have cause to rejoice, inasmuch as a chief of Zoola, with his followers, has been noticed by the great mother of the whites—a people of whom we have heard much, our kings have heard, and much has been said of the great English nation across the waters. But now the hearts of the Zoolas will be gladdened. When Manyos returns to his country, it will be in joy that we have seen and observed, and surprise has been with us: all that we have seen and heard verifies all that has been said of the M'Angeis (the English). May the Inkosi kasi (Queen) of such a nation live long and in happiness. Goopeleaka (we have said—and are satisfied). Great has been our satisfaction in having this day been received by the great mother of the whites. Bi it (your greatness)." On visiting the stables they were very much struck, asked the cost of the state carriages and value of the horses, and returned highly gratified.]

(To be continued.)

ON THE PROPER FORM OF SCREW FOR STEAM VESSELS.

H.M.S. *Styx*, East Indies, April, 1853.

Sir,—The success of Screw Propelling has been much retarded hitherto by a mistaken opinion of most engineers that there was a loss of power incurred by increasing the pitch. Thus in page 93 of *The Marine Steam Engine*, Mr. Main says, "It has been found that the *slip* is less when the angle (POH) is small and the screw revolves at a great speed." In the *Mechanic's Magazine*, Captain Halsted states, that from repeated experiments on the *Dwarf*, it was found, "With almost the precision and certainty of a law, that the screw of comparatively small angle of pitch, small surface, and driven at high velocities, will give a more useful effect, &c., &c., than the screw of coarse pitch."

Since the year 1845, I have endeavoured, in various publications, to prove that there can be no loss of power from increasing the pitch, that in fact all pitches were alike, within certain limits, but that there is less friction, and actually less *slip* with a long pitch than a short one. In the same year I drew up a paper, which I submitted to Sir George Cockburn, in which I proved, by the experiments in the *Rattler*, that a propeller having blades at an angle of 45° gave a more useful effect than any other under trial:—17·4 revolutions of the engine giving a velocity of 8·38 knots; whilst Smith's screw of one foot more diameter required 24·8 revolutions for a velocity of 8·5 knots. With Smith's ten feet screw 105·5 revolutions gave 9·7 knots, and, if we take the powers as the cubes of the velocities, 78·4 revolutions would be required for 8·38 knots. But even Mr. Sunderland's propeller, of eight feet diameter, only required 70 revolutions; which clearly proved its superiority in producing useful effect, for the power exerted by an engine is in proportion to its revolutions,—the steam being kept up at the same pressure in the cylinders as is usual in all trials.

The mistaken deductions which the engineers arrived at from these trials were caused by their supposing that the *apparent slip* of the respective propellers actually represented their comparative useful effects. Thus Smith's propeller was said to have a slip of only 10 or 11 per cent; whilst Sunderland's was rated at 53 per cent, or 9·6 knots per hour!! If a navigator tried to place his ship by an *apparent altitude* we should have no confidence in the result, but it appears that the *Rattler* experiments were conducted on this basis.

In 1850, in the preface to the 2nd edition of my work on the Marine Steam Engine, I strongly urged the advantages of the long pitch, the *Great Britain* having obtained a velocity of 12 knots with only 56 revolutions of a screw having an angle of 28° . When the *Queen of the South* was preparing to steam home with only one arm of her screw, I casually observed that it would be as well, if possible, to increase the pitch; and I now perceive that, since her return, it has

been increased from seventeen to twenty-one feet, by which her velocity was increased to 10·36 knots with less than 60 revolutions.

But the complete triumph of the long pitch has been reserved for the *Fairy* and Griffith's patent propeller. Thus it was found that a 10 feet pitch (exactly the same as the *Great Britain*) gave a velocity of 11·73 with only 30 revolutions, whilst an 8 feet pitch gave 12·38 knots with 37·5 revolutions. Now if 11·73 required 30 revolutions, 12·38 should only have required 35·6. It cannot be objected that the form of the new screw was unfavourable to the low pitch for it actually obtained 0·28 knots more than the polished Admiralty screw, made on the *unerring* principles of the low pitch and high velocity.

It appears most curiously to have been supposed that the large boss of Griffith's screw had something to do with its superior performance, and the newspaper reports that a wooden one of the same dimensions was fitted to the original screw, with the view of testing it, of course without effect. Now that the fallacy of the low pitch is exploded I have no doubt that the screw will become a more efficient propeller, in every way, than the paddle.

One word as to the caloric engine: it is reported that a velocity of six knots was obtained on an expenditure of six tons per day. When H.M.S. *Hydra* was under my command, I arranged so as to cut off steam of 10lbs at $\frac{1}{20}$ stroke; and, although the engines were very old, and had a clearance of *three inches*, the expenditure was reduced to *four and a half* tons per diem, giving a velocity of five knots, and the ship deep in the water. I am therefore certain that the caloric engine will never beat a properly constructed steam engine.

I am, Sir, &c., &c.,

W. E. A. GORDON, Lieutenant, R.N.

[We add the following report of experiments on Griffith's screw.—Ed.]

Portsmouth, Feb. 12th.

The experiments with Messrs. Swayne and Bovill's new propeller (Griffith's patent) have been continued during the week on the *Fairy*, royal yacht, over the measured mile at Stokes Bay, and having terminated to-day we now give the general results obtained out of a great number of runs made with the screw blades at different pitches or angles. These results have elucidated some valuable and important points in screw propelling. The ordinary screw, including those for the *Agamemnon* and *Duke of Wellington*, line of battle ships, had been made up to the present time without any provision for altering the pitch to meet the variations of winds and currents, to which all sea-going vessels are subject. They have thus been deprived of that which now appears the most valuable feature of the screw—viz., the power of adapting it to meet every contingency. So difficult does it appear to be for even the most experienced engineers to determine for different vessels the correct pitch to make the screw, that it is the custom in the navy to construct the second or spare screw, which every vessel carries, of a different pitch to the other; and it seems to be quite a matter of accident whether the one or the other has the right pitch for the ship. This remark applies equally to the screw vessels in the merchant service.

During these experiments on the *Fairy* the pitch of the new propeller was

repeatedly altered to test its effect, and so simple is the arrangement for doing this, that it only occupied three minutes on each occasion.

On reference to the table of experiments, it will be seen that with the new propeller the engineer can control the speed of his engines at pleasure, by increasing or reducing the pitch of the screw, so that, in a fair wind, by increasing the pitch, the full power of the engines, working only at their proper speed, may be exerted in effectively propelling the vessel, instead of consuming fuel in driving round the engines to no purpose; and again, in going head to wind, by diminishing the pitch the engines can be made to give out their utmost duty with a certainty of effectually propelling the vessel; and in cases where it is desired to economise fuel as much as possible, the pitch of the screw may be increased, to reduce the revolutions of the engines to any extent, and the results of the present experiments show this may be done with great advantage, and, no doubt, under canvas would give extraordinary results.

The large central ball of the new propeller gives great additional strength, and affords the opportunity of constructing within it this very strong, and at the same time most simple and effective arrangement for altering the pitch of the blades, and feathering them parallel to the shaft when the ship is under canvas only, to which so much importance has lately been attached in reference to the Australian and East India steamers.

In the event of the fracture of one of the blades of the screw, which not unfrequently occurs, the patent propeller is readily repaired by shipping a new blade, weighing not more than one-sixth of the whole weight; but with the ordinary screws, which are cast in the piece, the breaking of any part is fatal, and involves the necessity of making a new casting; simple as this difference may appear, it is not unimportant in large vessels with brass screws (such as are universally used in the navy) weighing eight to ten tons, and now worth £200 per ton.

Yesterday the last series of experiments were made with Griffith's propeller, when a number of naval officers were on board, including Capt. Crispin, Capt. Stevens, Mr. Baker, inspector of steam machinery afloat, Mr. Hartree, of the firm of Messrs. John Penn and Son, the makers of the engines, Mr. Smith, of screw celebrity, and the new screw was represented by Mr. Bovill and Mr. Griffiths. The vibration arising from the ordinary screw was entirely done away with, to which much importance was attached, as in large vessels this seriously impairs their strength and creates great leakage in the after part.

It will be seen by the tables that when the screw was put at 10 feet pitch the engines could only make 30 revolutions per minute; notwithstanding this great reduction in the power employed, the mean speed of the vessel actually obtained was 11·738 knots, a quarter of a knot less than was obtained with *Fairy's* best screw, 12·100 knots with engines running 38½ revolutions per minute; thus saving in power, wear and tear of machinery, and fuel, about 25 per cent. When it was desired to increase the speed of the vessel the pitch of the new propeller was diminished, the revolutions of the engines regularly increasing with every reduction in the pitch, and at 7 feet pitch the engines made 42 revolutions per minute, and the mean speed of vessel reached 12·631 knots per hour.

In making this comparison between the ordinary screw and the new propeller, it must be borne in mind that the *Fairy* is the best screw steamer afloat, and that her present state of excellence has been obtained after trying, for the last few years, every kind and form of screw, and the one used on this occasion against the new propeller was a fine polished brass one, and considered the perfection of a screw; the new propeller was simply an iron one, and the first attempt made against the *Fairy* screw; considering the results obtained on this occasion by the patent propeller, which must be manifest to every one

acquainted with the subject, there can be no doubt that a still greater speed and perfection will be arrived at.

The *Fairy* went out again this morning with her own screw, we believe at the wish of Messrs. Penn and Mr. Smith, to see if they could not, on a second trial, beat the patent propeller. She has just returned, and we understand they have again failed to come up to the new propeller.

Table of the Trials of the *Fairy* in the Measured Mile in Stokes Bay.

Fairy's Common Propeller.

	Rev. of Engines.	Prss. of Steam	Va-cuum.	Time.	Knots per Hour.	Average of Knots per Hour.	Pitch.	Draft of Water.
		lbs.	inches	m. sec.				
1st run	38½	11	26½	4 49	12·456 }	12·248	8 0	7 feet aft.
2nd run ...	—	—	—	4 59	12·040 }		8 0	
3rd run	—	—	—	4 57	12·121 }	12·000	8 0	5 feet forw.
4th run	38	—	—	5 3	11·880 }		8 0	
5th run	—	—	—	4 49	12·456 }	12·053	8 0	
6th run	38½	—	—	5 9	11·650 }		8 0	
Total mean speed						12·103 knots.		

Griffith's Patent Propeller.

1st run								
With tide..	30	11	26	4 57	12·121 }	11·738	10 0	Ditto
Against tide	30	11	26	5 17	11·356 }			
2nd run								
With tide..	33½	11	26	4 34	13·139 }	12·057	9 0	
Against tide	33	11	26	5 28	10·975 }			
3rd run								
Slack water	37½	11	26	4 51	12·371 }	12·392	8 0	
Slack water	37	11	26	4 50	12·413 }			
4th run								
With tide..	41½	11	26	4 23	13·688 }	12·631	7 0	
Against tide	42½	11	26	5 11	11·575 }			

Daily News, Feb. 14th.

VOYAGE OF H.M.S. "CALYPSO," CAPTAIN WORTH, TO THE PACIFIC.

(Continued from vol. xxi, p. 640)

The Feejee Islands.

The appearance of these islands is generally very beautiful and interesting, being well wooded, with extensive rivers, especially the two large islands of Viti Levu and Vanna Lavu, which are navigable for boats and canoes for a considerable distance, and having also spacious cattle runs on the high lands, with large plains for the cultivation of yams, tarro, &c., and where rice, sugar-cane, and coffee might, doubtless, be cultivated to almost any extent.

Land can easily be obtained by respectable settlers; but, unless such settlers confined themselves to those districts which have embraced Christianity, the people of which regard the persons and property of foreigners as sacred, protection from the Home Government would be necessary.

The scenery of the islands, especially the larger ones, is generally rich, and often sublime, particularly in the interior; little, however, is known respecting the interior, nor would it be safe to penetrate far into it without an armed party. Some of the small islands are also very picturesque and pretty, furnishing every variety of hill and dale in miniature; indeed the Feejee Group may be considered one of the finest in the Pacific, and requires only the pen of an intelligent and scientific traveller and the pencil of an artist to make it apparent.

The group, said to contain a population of 300,000, may be conveniently divided into three parts: namely, the central, windward, and leeward islands.

The central division includes the two large islands of Navete Lavu (large Feejee) and Vanna Lavu (large land), and several adjacent islands, such as Bau, Viwa, Ovolou, and many others.

The islands commencing with Bateke and extending to Turtle Island constitute the windward division; while those called Yasawa, to the westward, form the leeward division. Kaudavu is scarcely included in any of these divisions.

Navete Lavu is decidedly more populous than Vanna Lavu. It is said to be three hundred miles in circumference, and to contain a population of at least 100,000. There are five or six independent districts on this island, scarcely at all connected with Bau, but they are not by any means so powerful as the Bau kingdom; nor are the people equal to the Bau men in intelligence and energy of character.

The principal of these independent districts are Verata, Rake Rake, Ba, Nandanga, and formerly Rewa, which is now at war with Bau, and is likely to be subdued; it will, however, still keep its rank amongst the independent states of Feejee; though, of course, the Bau chiefs will, for a considerable time, have great influence in its councils. This war commenced five years since, when the town of Rewa was burnt and the greater part of its inhabitants slaughtered: many people, on both sides, continue to fall daily, including several principal chiefs.

Vanna Lavu is of about the same extent as Navete Lavu, but does not contain half its population, nor does it appear capable of supporting one so large, neither are its inhabitants equal to those of Navete Lavu in industry or enterprise.

There are probably one hundred other inhabited islands, and as many uninhabited, of various dimensions, from two to sixty miles in circumference.

The windward are not more in number than the leeward islands; but when taken as a whole are much larger, and possess a greater population. Kaudavu is the principal island towards the south, and is well populated, and extremely well situated for the accommodation of shipping. Near it are the following smaller islands, Deavuni,

Yamkuva, Bubia, and Ouo; these form an insignificant group, and are the most southerly of all the islands.

Bengga, Vatulele, and Yauntha are near Navete Lavu. Malolo is the principal of the western group, which form a cluster called Natuya Sawa or Saw Islands. Matherata, Ickombra, and others are near Vanna Lavu.

Those islands connected with Lakemba are, strictly speaking, the windward islands, and are as follows, Vatoa, (or Turtle Island,) Ouo, Ougaa, Vulanga, Namuka, Oneata, Mothe Kambara, Vanna Vatu, Nayau, and some smaller ones, which constitute the kingdom of Tui-Nayau, King of Lakemba.

Thethea, Tuvatha, Munea, and Vanna Butava, form a kind of separate kingdom. The chiefs of Thakaundrove and Lakemba have, however, considerable influence over them.

Tavenue, often called Somo Somo, from the name of its principal town, is the residence of the chiefs of Thakaundrove.

Lanthala, Aggamea, Nitambe, and Rambe are near Vanna Lavu; and, with a number of towns on that island, forms the kingdom of Thakaundrove.

Koro, Nairai, Ovolou, Yauntha, Motureke, and Viwa are subject to Bau.

Bau or Mbau is about two and a half miles in circumference, and is most inconveniently situated for everything but defence. The town is continually in ruins from fire, occasioned sometimes by carelessness and at others by design. It is the largest native town I have seen, and at present may be termed the metropolis of Feejee.

From what has already been stated it will be seen that Feejee is politically divided into a number of states or petty kingdoms, almost every town boasting of its King and Government. A number of these, in some instances ten, in others one hundred and fifty, are united under one Chief, who is not called King of the whole, but "Turanga Lavu" or "Great Chief," that is, he is consecrated King of one place only, but he rules over the whole.

The climate of these islands may be considered good, though the natives cannot be said to be healthy; their habits, however, may, in a great measure, account for it. But few virulent diseases are found, and epidemics, with the exception of influenza, are rare; nor are they subject to malignant fevers.

Storms are not so violent as at the Friendly Islands; and, with the exception of two very destructive ones that occurred in January and April last, the ravages caused by which were equally experienced throughout all the groups of the Samoan, Friendly, and Feejee Islands, none of any consequence have occurred for the last ten years.

The best season for visiting the Feejees is from May to January; the worst months being March and April, and, generally, bad weather may be expected about the time of the equinoxes. In the summer months much rain falls, and is accompanied with close and sultry weather, the thermometer, during the months of January, February, and March, averaging 87° in the shade.

The Fejces are decidedly a commercial people. Amongst themselves they are continually carrying on commercial transactions, and in a manner that proves that the custom of exchanging one kind of property for another is very ancient amongst them; particular districts being noted for the manufacture of some particular goods. For example, the windward islands produce excellent cloth, sennett, kava bowls, &c.; at Nairai, and many other places, superior mats; on Venna Lavu excellent fishing nets; on several parts of Navete Lavu pottery is manufactured in great quantities; each, accordingly, being enabled to supply the wants of his fellow, and each having peculiar wants to be supplied; proving, thereby, that they possess and understand the essentials of a commercial people.

With regard to foreign commerce, there appears to have been but little during the last eight years; about two cargoes of biche de mer have been taken from the islands annually; also large quantities of tortoise-shell, and some few cargoes of oil. A few whalers occasionally have touched at the islands for refreshment, with the usual trade of cottons, muskets, shot, powder, axes, paint, whales' teeth, &c., to barter, but the ferocious and treacherous character of the natives and the difficult navigation present a great barrier to commerce.

Whales are said to abound in this group, but the ground is not good, added to which there is so little searoom, and so few good anchorages, considering the extent of the group, that it is considered too dangerous an experiment to cruise for them.

The great difficulty that settlers have to contend with is the total want of protection. The Bau chiefs could afford it them if they would, but they do not feel disposed to take any step for the prevention of those outrages to which they are continually exposed; if any of their own people suffer injury or insult they resent it at once, and they have an idea that foreign powers should do the same.

Cannibalism prevails everywhere, except in the few places where Christianity has made progress, and it is an undoubted fact that although Christianity may not, as yet, have made that progress amongst them that could be desired, it has had the effect of entirely suppressing this horrid custom in those that have embraced it, nor is there an instance known of a professed Christian having eaten human flesh. I was informed by Mr. Hunt, the chairman of the Wesleyan Mission, that not less than five hundred persons have been eaten, within fifteen miles of his residence, during the last five years.

The Fejceans are undoubtedly amongst the vilest cannibals, many of them acknowledging that they greatly prefer human flesh to any animal food whatever; and it is common amongst them, when they see a fine man, to observe "What fine eating that man would be," in the same manner in which we should speak of a fine ox. It is quite a mistake to suppose they eat human flesh merely to gratify revenge, many of them have but one reason, and that is, "because they greatly prefer it to any other kind of food," others eat it from pride, and others, no doubt, in time of war from revenge. It is positively affirmed by the natives themselves that in some parts of Navete Lavu

the people eat raw human flesh, and even chew it as seamen do tobacco. Sometimes men are cooked whole, and brought to the chief with a wig and his head-dress on, in a sitting posture and a club in his hand. On some occasions they eat their own friends; as a proof of which, a short time since a fine young man was killed, in the war now in progress, his body was secured by his own party, who had a mock funeral and buried him, and at night disinterred and ate him.

The priests of Bau are not allowed to eat human flesh, nor are women, though they often do so by stealth, and the latter take pleasure in greasing the mouths of little children with a portion of it, as a preventive to a disease to which they are subject. Sometimes a man is cut up and cooked by piecemeal, whilst yet alive; and instances have been known of a part of the body being cut off and the person himself being obliged to eat it. Seru (or Thakaubau) caused a man to be cut up piecemeal, roasted the pieces, and ate them in his presence. And the late King of Rewa cut off the arm of one of his female servants and made her eat a portion of it.

It might be judged that little could be said respecting the character of a people so degraded as the Fejeans evidently are. What character can cannibals have, it might be asked, but that of the wild beast? That they are deeply degraded admits of no denial; yet are they not without characteristics of an intellectual and even moral kind. They are, in general, well behaved, some of their chiefs, indeed, are, in their way remarkably so, and the common people are very respectful; all forms of etiquette are strictly observed amongst them. They are even formal in many things, and seldom act contrary to established custom, or the laws of good breeding, so far as they understand them. They are also hospitable, will share what they have with visitors or strangers, and often be very sparing in their own diet to provide more liberally for others. They have also an excellent idea of domestic comfort: in their houses will be seen a good fire place, well supplied with cooking utensils, drinking cups, dishes, trays, &c., and their daily meal served up with great cleanliness and regularity.

The extremes of their character are also very striking, nor will any one depend on them who knows their real nature; they can lay aside honesty and kindness as easily as their dress, and be one moment perfectly frank and courteous, and at another as ferocious as the wild tiger. It is often difficult to conceive that the apparently fine, good-tempered, and generous man one is conversing with, can go home and enjoy a feast of human flesh, or imbrue his hands with pleasure in the blood of defenceless women and children, and yet such is the fact!

It cannot be said that the Fejeans have any form of government, though they have many customs which are considered sacred; but they refer more to social life or forms of etiquette than to politics. The leading chief for the time being is the fountain of law, and as for its execution it is generally left to the injured party. If persons suffer in their persons or property they often take the law into their own hands, and seek redress in any way they judge best. It would, they consider, be inconsistent with the dignity of a chief to inflict any

punishment short of death, and a Fejee chief seldom lowers his dignity; the slightest offences are often punished by death, and in many instances real crimes are only laughed at. Such is the law of savages who are only governed by passion, caprice, and self-interest.

The different orders of society are better understood amongst them than would be supposed; their Kings are consecrated to their office with considerable ceremony; almost every town has its King, though he is not always the ruling chief. At Bau, for instance, Seru is the ruling chief, though his father Tauou is the real King of Bau; yet another person, belonging to a distinct family, has the *title* of King of Bau. Taura is King of Kamba, a place belonging to Bau, and also King of Levuka, a town in the island of Lakemba. There are many inferior chiefs who may be considered as constituting the next rank, then the messengers or representatives of chiefs, then the priests, and lastly the common people, of whom there are various grades; some are gardeners to the Bau chiefs, and in every way their servants, others serve them on particular occasions, others are still more independent and merely pay tribute. Every town, however, subject to Bau has a chief, &c., of its own, and formerly every town was independent.

A person named Charley Sauvage did much in teaching the chiefs how to enlarge their authority, and to bring those districts that were conquered into entire subjection: he was a Swede, and was wrecked in a Spanish vessel off Nairai; he became a great chief in Bau, and greatly extended the influence of that now powerful place. This man was eventually killed in an affray with the natives; since then Bau has been gradually rising in importance, and may be considered the first place in the group in every respect.

Amongst other extraordinary customs observed by the Fejeans is that of burning the body, shaving the head, and cutting off their little fingers, as expressions of sorrow and mourning for the dead; and it is rare to see a native that is not thus mutilated. The finger is usually cut off with an axe, and burning grass applied to the wound.

On the death of a chief they oil his body and blacken it, then dress him in a new mat, put a club in his hand, and present him with whales' teeth, the souls of which they believe accompany him, the body of the whale's teeth remaining with the priest. The death of a chief is the season for rejoicing for twenty nights, the chief mourners shutting themselves up for one hundred nights.

Strangling women on the death of a husband is also a Fejee custom; as, also, strangling or burying alive of parents by their children, when, from age or infirmity, they are considered as having lived sufficiently long. It was reported to me by one of the missionaries that he was present when a mother was oiled and dressed for her funeral, sitting in the middle of a large piece of native cloth, (or *tapa*,) which was to form her shroud, her children crying and clinging to her, the house crowded with her friends, looking on with perfect unconcern, the woman herself refusing, most strenuously, to yield to his beseech-

ings to forego the shocking death she was thus voluntarily seeking, and who worked herself into a state of excitement, approaching to frenzy, through the fear of disappointment, threatening to be her own executioner if her friends would not show their love for her and put her out of the way. My informant was unsuccessful in his endeavours to save her, and, though cursed and threatened by those present, remained till the fatal cord was applied, and he witnessed her dying struggles.

It is a common occurrence for people to be buried alive, especially the infirm or sick; indeed it is but seldom that they die a natural death, being either strangled by their own desire or by the kindness (!) of their friends. Some are buried alive, others are shut up in some wretched hut and left to starve, or thrown into a river and left to be devoured by sharks.

Infanticide is practised to a great extent by producing abortion; and no woman is allowed to enter the mbrues, or gods'-houses.

From the missionaries (Wesleyan) I learnt that the mission commenced in 1835, and that their number in this group is nine, and distributed amongst the following islands: Viwa, Lakemba, Ouo, and Vanna Lavu, the latter having on it two stations. As assistants to them are sixty native preachers and one hundred and five teachers, divided between Ba, Rake Rake, and Nakorotumbe, all important districts on the coast of Viti Lavu. The small islands of Ouo, Vatoa, or Turtle Island, Namuka, and Oneatu are entirely Christian. I likewise learnt from Mr. Hunt that the total number of attendants upon public worship amount to 3280; and that there are 47 day schools, which receive 2064 scholars of both sexes; with 34 chapels, and 22 other places appointed for preaching.

(To be continued.)

WATER AT COEPANG: TIMOR.

The following are extracts of letters from the Commander-in-Chief's office to the Admiralty, on the sickness in ships carrying troops, attributed to water obtained at Coepang. The first relates to the freight ship *India*, which arrived at Hong Kong on the 20th of March, from Cork. The report from the Staff Surgeon, Dr. Macandrew, says:—

It appears that ten persons died during the voyage, viz.:—two privates and one woman from consumption; one sergeant and one private from fever; two men from acute dysentery; one private from disease of the heart; one child from marasmus; and one from bowel complaint.

On inspecting the *India*, on the day of her arrival, I found nine men in the last stage of acute dysentery, one man in a dying state from consumption, and a patient suffering from chest affection. The sick were immediately removed to hospital; where, up to this date, six out of the nine have died, as well as the man with consumption.

To account for the cases of dysentery, which occurred during the last month of the voyage, it is necessary to state that the best route from Europe to China, during the last and two first months of the year, is by the Ombay passage. This passage has on one side the Island of Ombay, and on the other the Island of Timor, at the southern and western points of which is the Bay of Copang.

It appears that the *India* anchored in this bay, and obtained a supply of water equal to three days consumption, which was immediately issued to the troops; and to which the soldiers attribute the bowel complaint, which began to prevail in the ship a few days afterwards.

I was anxious to procure a small quantity of the water (for analysis) to which so much sickness has been attributed; but, when the *India* arrived here, it had all been expended. I regret this the more in consequence of it having been reported to me that several ships with Chinese coolies on board, proceeding to California, having obtained a supply of water at Copang, suffered severely afterwards from dysentery; and that on board one ship more than two hundred persons died from this disease. There may be some exaggeration in the number of deaths here given, but it shows the desirableness of prohibiting ships with troops touching at any of the Islands in the Eastern Archipelago for water, unless from absolute necessity;—which did not exist in the case of the *India*. In one man only was there any appearance of scurvy when the detachment arrived.

The preceding detail is, in some degree, incomplete in consequence of the Medical Officer* in charge of the troops having, in a fit of insanity, attempted to destroy himself, eight days after his arrival in Hong Kong; and from whom, in his present state, no further information could possibly be expected.

The next, from Lieut.-Colonel Raitt, appears to confirm the foregoing. He says:—

Having seen a paragraph in the *Morning Herald*, of the 16th May last, stating that a detachment of the 59th Regiment, proceeding to China, had put into Copang, in the Island of Timor, and that subsequently to their touching at that Port seven of the men had died of dysentery, apparently caused by the water taken in there, I am induced to write to you, for the information of his Lordship, the Commander-in-Chief, that in the year 1844, I proceeded, in command of a division of the 80th Regiment, from Sydney to Calcutta. That, in consequence of the water supplied in Sydney being so bad, (from the state of the casks,) we were compelled to touch at Copang for an additional supply; and that, after leaving that place, several of the soldiers and crew of the vessel, were attacked with dysentery. Fortunately we only lost one soldier and one of the crew on the passage.

The Medical Officer, the late Assistant-Surgeon McNish, of the 80th Regiment, was of opinion that the water was the primary cause of this disease breaking out in the ship.

After our arrival in Calcutta, I heard that some of the 28th Regiment, who had preceded the 80th from Sydney to Calcutta, had been similarly attacked after touching at Copang.

It is very well known that Coepang is one of the most unhealthy places in the whole Indian Archipelago, although most conveniently situated for supplies to ships, and therefore requiring the utmost care in those who go there. And on looking into the subject, we find that complaints of the Coepang water are of long standing. The French

* It is satisfactory to know that this officer recovered his senses before the report left Hong Kong; but was still in a very precarious state.—Ed.

Admiral Baudin lost seven men from the same cause, and buried his gardener there. Flinders was more fortunate, and King did not escape the unhealthiness of the place, as will appear by the following extract from his work, relating to the subject before us. He says:—

“The first object was to commence our watering, but the operation was tedious and attended with much delay, since it was necessary to send the casks above the second bridge, which crosses the river at the upper end of the town, at about half a mile from the entrance, where we had first to wait for low tide before the water was fresh enough to be used, and then for half flood before the boat could get out of the river to go on board with her load. One turn therefore was as much as could be made during the day, for it was requisite to use this precaution in filling our casks, in order to ensure their contents being untainted by the salt water. Soon after leaving Timor the crew were attacked by dysentery, brought on by change of diet; and at one time the disease wore a very alarming appearance.”*—p. 142.

Such precautions as those alluded to are of course essential in obtaining water from a tidal river, where the greatest care is required to avoid the stream which is in the least degree tainted by the salt water. This is well known to seamen, and naval officers are generally careful to do so. For the real character of the Coepang water, however, we have referred to Captain Stokes, who visited the place in command of the *Beagle*, when surveying the coast of Australia, and he sends us the following reply:—

14, Westbourne Terrace, Hyde Park.

In answer to your letter inquiring about the water at Coepang, I can only account for the bad reports you have received of the water at that place, by supposing the casks to have been filled within tidal influence in the river that runs into the south corner of the small sandy bay in which Coepang is situated; and though small, is the most convenient anchorage on the west side of Timor. In the *Beagle* we watered from this stream (or in Coepang) in the months of July and September, with baricas, having the Timorese to fill and carry them to the boats, which saved our people from exposure to a climate at all times I believe unhealthy. Either small casks or baricas must be used, as the *good water is above the fall*, and whence large casks cannot be rafted, but may be filled lower down the stream.

I again repeat, that Coepang roads will be found the most convenient stopping place for ships seeking water and other supplies, on the western side of Timor.

Always your's faithfully,

I. L. STOKES.

On the whole we are inclined to believe that Captain Stokes has pointed out the real cause of these complaints. The island is briefly but well described by old Dampier, who passed two months in the vicinity of Coepang. He tells us that such a chain of mountains extends throughout the middle of the island, that “no water can run far, but as the springs break out on one side or other of the hills, they make their nearest course to the sea”;† and one of which appears to be that of Coepang. It appears also that the trouble of taking it there from

* “Narrative of a Survey of the Intertropical and Western Coasts of Australia, &c.” By Captain P. P. King, R.N., F.R.S., &c.

† Dampier: vol. iii, p. 167.

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above the fall, where the tide cannot reach, is absolutely necessary, a precaution which has been successfully adopted; and until we know that this plan was followed by the *India*, as well as other ships that have suffered from it, we cannot join in condemning the *fresh* water of Coepang, unhealthy as the climate may be.

In our volume for 1845 a correspondent informs us that "the best water is not at the town, but a little above a Missionary's whitewashed house, standing alone, along shore on your larboard hand." And he adds, "Send your boats the first thing in the morning, before the land breeze comes down strong, and you have a fair wind back."

This, however, although pointing out another source from which water may be obtained at Coepang, does not bear on the question before us, and in no way affects the opinion we have formed of the water obtained in the manner pointed out both by Captain King and Captain Stokes.

BOTTLE PAPERS.*

(Continued from page 155.)

SHIP WALPOLE.—Track No. 26 a.

By the attention of the French Government in transmitting to the Admiralty a bottle paper which was picked up off the Seven Islands, coast of France, we are enabled to record it.

"Ship *Walpole*, from London to New York, Nov. 1, 1846, lat. 48° 55' long. 17° 48'. Reverse—Francis Winsor, Mate; written at 12 o'clock at night in the dark."

SHIP MARMION.—Track No. 26 b.

TRURO, Jan. 29.—On the 25th inst. a bottle was found by Lieut. Hussey, R.N., of the Coast Guard, on Perran Beach, (on the north coast of Cornwall,) containing the following extract from the log of the ship *Marmion*, from New York for Liverpool, hove overboard Aug. 16, 1850, at 2 P.M., to ascertain the drift thereof. Lat. 49° 8' N., long. 18° 51' W.; W.S.W.

(Signed)

THOS. F. FREEMAN, Master.	} Cabin Passengers.
GEO. P. HARKNESS, First Mate.	
THOMAS BLACK,	
ROBT. HAYNES, JUN.	
JOHN LEACH,	

TROOP SHIP KENT.—Track No. 27.

Foreign Office, January 4th, 1837.

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

I am, &c.,

J. BACKHOUSE.

* For Chart of Tracks see number for November 1852.

British Consulate, Boulogne, Dec. 24th, 1836.

SIR,—I beg leave to transmit to you the enclosed copy of a writing found in a bottle which was picked up near to Cape Blanc Nez, a few miles to the eastward of Boulogne, on the 20th instant, and as the insertion of it in the public prints is requested, and may be of service to nautical men, I have forwarded it to you for that purpose, should you deem it expedient.

I have the honour, &c.,
W. HAMILTON.

“Troop-ship *Kent*, with detachments of the Royal Artillery, Royals, and 68th regiment on board, bound for Quebec, all well.

“This bottle is thrown overboard for the purpose of ascertaining the direction of the current for the benefit of all sea-going men, the ship having been, for several days past, found considerably to the southward of her reckoning, and it is particularly requested that the finder of this, in whatever quarter of the world, will cause the same to be inserted in the newspapers.

W. L.

“Ship *Kent*, lat. 50° 20' N.
August 29th, 1836, long. 19° 0' W.”

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

Boulogne, Dec. 23rd, 1836.

W. HAMILTON.

H.B.M. Consul at Boulogne.

BARQUE NIGER.—Track No. 28.

PARIS, Feb. 12.—A bottle containing a note with the following memorandum written in English, has been picked up on the coast of Quiberon:—

“To the Editor of the *Atlantic Memorial*.—N 1 barque *Niger*, Captain J. L. Merrett, from Africa (Cape Coast), latitude by observation 48° 13' N., longitude 18° 56' W., wind west for the last four days.—7th Aug., 1839.”

BRIG BOLIVAR.—Track No. 28 a.

The following has been received at Lloyd's, dated London, Dec. 11.:—

SIR,—I have the honour to forward you at foot a letter found in a bottle picked up near the coast of the Barre de Mont (Vendee) by the Customs Superintendent of this locality, and who sent it to me through his Excellency the Minister of Marine.

I have the honour to be, Sir,
Your humble and obedient servant,
F. GAUTIER,
Chancellor of the Consulate General.

To Mr. W. Dobson, Secretary at Lloyds.

“August 29, 1840.—Brig *Bolivar*, of the port of London, last from the Cape of Good Hope, out 68 days; had fine weather up to the pre-ent time, but now we are in a heavy gale of wind from the S.W.; lat. 46° 53' N., long. 18° 46' W.; all hands well on board, only short of bread. Spoke four vessels, and were supplied with said articles. The vessels were the American brigs the *Joseph and Mary*, from Cadiz to New York; the *Poultney*, from Liverpool to Baltimore; the Spanish polacca (name forgot), she was from Santa Cruz to Coruna; the schooner *Castleray*, of London, from St. Michael's, bound to Newfoundland, loaded with potatoes and onions; got a quantity of each from

her. We have passed several vessels in ballast, and spoke the *Isabella*, from London to the Isle of France.

"I am, Sir, yours truly,

"A son of Old Neptune,

T. R. M.

"Honi soit qui mal y pense."

* * The *Bolivar* arrived at Gravesend on the 29th of August.

BARQUE MARY.—Track No. 29.

A bottle from the barque *Mary*, of London, Abyah Locke, Master, 12th April, 1832, in lat. $48^{\circ} 30'$, long. $16^{\circ} 15'$, found on the coast of Jart, lat. $36^{\circ} 25'$, on the 4th of March, 1833.

BRIG FLORA.—Track No. 30.

The following singularly expressed Memorandum was received at this office on the 11th instant, enclosed in a private letter from a subscriber at Ragged Island, addressed to the Editor of this paper.—*Nassau Royal Gazette*.

"Brig *Flora*, July 29th, 1840, FRANCIS W. SHADDÖCK, Commander.

"There is a Divinity that shapes our ends,
Rough hew them how we will."

"And this is to inform the mighty world, that the said brig is this day in the lat. $43^{\circ} 55' N.$, and long. $18^{\circ} 4' W.$ from Greenwich, all well.

"Therefore *you*, the lucky finder of this enclosure, in whatever part of the globe it may be, are requested to send it under cover, addressed to the Editor of the *Nautical Magazine*, for the benefit of navigation, in some small degree towards ascertaining the currents of the ocean.

"We left Poole on the 19th instant, bound to Carboneur, Newfoundland, and until these past two days have had very rough weather.

"The passengers have just had their morning lunch, with a glass of brown stout, and intend drinking 'Success to the above *Magazine*, and hope they may soon succeed in sending forth to seamen a full and succinct theory of the cause of winds, founded on accurate information from experienced navigators.

"Long live our beloved Queen, and always in the hearts of her devoted subjects."

Found in the Bay of Nepe, on the Island of Cuba, April 1st, 1842.

WM. HEASTIE.

Errata, 18·6° should be 18·1° in the Table.

SHIP IBBETSONS.—Track No. 31.

A stone bottle from the *Ibbetsons*, of Stockton, on its passage from Pictou to Peterhead, 5th Nov., 1826, in lat. $55^{\circ} 30'$, long. $18^{\circ} 20'$. Picked up on the coast near Killala, 3rd Jan., 1827.—*Atlantic Memoir*.

PACKET SHIP LEEDS.—Track No. 32.

A bottle was picked up by the crew of the boat *Hero* of Bryher, (Scilly,) being then 6 miles W.N.W. from St. Agnes Lighthouse, containing a paper, of which the following is a transcript:—

"New York packet ship *Leeds*, Capt. Sprague. At sea, June 25th, 1828; lat. $49^{\circ} 49' N.$, long. $20^{\circ} 25' W.$, from London, bound to New York, which place she left on the 15th instant. Died on board this morning at 11h. A.M. T. P. York, the well known and much respected philosopher. He was held in the highest esteem by all who knew him, and his loss will be most sincerely

felt. His remains were consigned to the turbulent ocean with every mark of respect and regret at 3h. P.M. by his fellow passengers. He was justly celebrated as a philanthropist, and his sole motive in undertaking the passage was, to enlighten with his profound learning the inhabitants of the United States, to whom he was much attached.

"Any person finding this will please to send an account of the time it is picked up, and the place where it is found, to Lloyd's, London, or to the nearest newspaper for the information of the friends of the deceased, and also for the benefit of the Board of Longitude, London.

"W. I. STANINGTON."

[My memorandum does not give the date when it was picked up.—E. S.]

SCHOONER JESSY.—Track No. 32 a.

GLANDORE, Feb. 24.—A bottle was picked up, about one mile to the westward of this harbour, containing a piece of paper, on which was the following :—The schooner *Jessy*, in lat 50° 37' N., long. 20° 30' W. On Tuesday, Dec. 8, 1846, from Fogo, Newfoundland, bound to Poole; Capt. M. Cook, master; Matthew Cook, mate; George Blank, George Giles, Henry Chiddle, George Everstone, crew; George Fisher, Mark Haywood, Jeremiah Brockway, Thomas Fardy, John Slude, C. H. Salmon, passengers.

H.M.S. PRESIDENT.—Track No. 33.

"H.M.S. *President*, 26th day of May, 1836, lat. 48° 31' N., long. 19° 38' W., light breezes from S.S.W. with a heavy head sea from the E.S.E.

JAMES SCOTT, Captain.

Thrown overboard at 1 P.M.

Trouvé à la cote de Quiberon, le 1r xbr, 1836, dans une bouteille cachetée.
L.B. Capitaine L.C.

PACKET VIRGINIA.—Track No. 34.

CORK, August 7.—A tin canister closely sealed was thrown in at Milltown Malbay in the last week, and the following memorandum found within it :—
"New York packet *Virginia*, lat. 42° 12' N., long. 19° 15' W., June 16, 1838."

SHIP KATE.—Track No. 35.

A bottle from the ship *Kate*, Captain F. F. Cresswell, in lat. 24°, long. 19°, on the 27th of June, 1825; found on the coast of Cuba, 30 leagues to leeward of Baracoa, in about lat. 22°, and long. 76°, 28th of Nov. 1826.

SHIP GAMBIA.—Track No. 36.

A bottle from the ship *Gambia*, in the river Gambia, lat. 13½° North, in the latter part of 1831. Picked up on the southern side of Virgin Gorda, lat. 18° 30'.

BARQUE PERSIAN.—Track No. 37.

The enclosed was found about 6 o'clock on the morning of Friday, February 13th, in the entrance of Locruss Beg Bay, E.S.E. of Glen Head, County Donegal, by a poor fisherman, in a bottle. Any reward would be thankfully

received by J. Evans for the finder, whose direction is Ardara, County Donegal, Ireland.

“Barque *Persian*, of London, 23rd of October, 1834; lat. 47° 5' N., long. 20° 27' W.
CHAS. MALLARD, Commander.”

REINE DE HOLLAND.—Track No. 37 a.

BREST, April 1, 1851.—A few days since a bottle was found near Audierne, containing a paper marked “*Reine de Holland*, Capiain E. Groeneld. Sank lat. 46° N., long. 20° 30' W., 21st April, 1850.”—*Shipping Gazette*, 5th April, 1851.

(Name illegible.)—Track No. 37 b.

British Consulate, Brest, March 15th, 1848.

SIR,—I have the honour to enclose a copy, with a translation of a paper sent to me by the Director of Customs of this port.

The original of this paper, which was in a bottle, was picked up on the coast of Plozenet, about 15 miles south-west of this, on the 4th or 5th of this month, and handed to the Marine Agent.

I am, &c.,

ANTONIO PERRIER.

To H. G. Ward, Esq., Admiralty.

Copy of the paper sent to the Director of Customs, being a French translation of the paper found in the bottle :—

“On board the ship (name illegible), of 72 guns, bearing the flag of Rear-Admiral Sir T. Cochrane; W. J. Hope Johnston, Captain, at one o'clock in the afternoon of the 10th of August, 1847; lat. observed, 47° 16' N., long. by chronometer, 21° 42' W., thrown into the sea at the same moment. We request the person into whose hands this may fall, to send it, without delay, to the Secretary of the Admiralty, in London.

“EDWARD WALLER, Secretary.”

BRIG ALBERT.—Track No. 38.

A bottle from the brig *Albert*, R. L. Robertson, Master, lat. 47° 20' N., long. 22° W., 24th January, 1822, on the passage from Virginia to England, the wind then about W.N.W., and had so prevailed for two or three days. Found in Rockham Bay, about 4 miles west from Ilfracombe, 29th July, 1822, and attested by the agents to Lloyds.

SHIP FANNY.—Track No. 38 a.

“One of our fishing-boats,” says a Penzance letter, dated the 5th March, “picked up yesterday a bottle at sea, covered over with barnacles, in which was a letter, addressed to whoever might find it. In the inside of the letter was as follows :—“*Ship Fanny*, Captain Palmer, lat. 30° N., long. 23° W.; passengers on board—John M'Nale, James Russell, Wm. Cooper, and Wm. Barnwell, from New York, bound to Liverpool, out 30 days, all well; wind S.b.E., 16 February, 1812.” It is calculated that the bottle has travelled 688 miles, and been in the water nearly a year.”—The *Fanny* arrived at Liverpool on the 10th of May following.—*Naval Chronicle*, 1813.

BRIG ARDENT.—Track No. 39.

A bottle from the brig *Ardent*, John Duncan, Master, from Hamburg to Newfoundland, 22nd of September, 1824, lat 56° 58', long. 24° 30'. Found

12th of March, 1825, on the sands at Dell, near the Butt of the Lewis, and the notice transmitted by the agents to Lloyds at Stornoway, 17th of March.

BRIG SUPERIOR.—Track No. 39 a.

A COINCIDENCE.—On Sunday last a bottle was picked up by some boys on the sands of Dunnet, in which was a paper containing the following:—

“May 13, 1842, on board the brig *Superior*. This morning a male child was born; mother and infant are in a fair way. Passengers all in a healthy state. We have experienced some heavy weather. Our latitude at this time is 53° 48' N., long. 24° W. On a voyage from Thurso to Pictou and Quebec. Donald Manson, Commander.” It is a very singular circumstance that the bottle should have traversed the ocean, a distance of nearly 1,500 miles, and have been cast ashore within two miles from the place whence the vessel had started upwards of five months previous. The bottle in its travels must have rounded the Hebrides, and also, perhaps, the north-west coast of Ireland, provided the currents run in that direction. We reported in our paper, some time since, the safe arrival of the above emigrant vessel at her destination.—*John o' Groat Journal*

BARQUE ENTERPRISE.—Track No. 40.

On the 17th of April a bottle was found on the coast of Dax, with a paper enclosed, containing the following:—

“Barque *Enterprise*, from Jamaica to London, June 5th, 1832, lat. 45° 5' N., long. 24° 20' W.; all well. We have spoken the brig *Alchemist*, of Dublin, with emigrants to Quebec. Out seventeen days; all well on board of her.”

NISUS.—Track No. 40 a.

On February 12, 1843, there was found on the shore at Basse-Pointe (Martinique,) a sealed bottle, enclosing a visiting card, on which was found the following piece of writing:—“May 19, 1842, at half past six in the evening, from the *Nisus*, before St. Lucia, one of the Cape Verd Islands. This bottle has just been emptied by the officers and passengers, in full conviviality.” This note was signed REY.

H.B.M. EREBUS.—Track No. 40 b.

New Ross, 24th April, 1844.

SIR,—I beg leave to transmit you the enclosed document, which was picked up by me on the voyage from Leghorn to New Ross, on the 10th of April, 1844, at noon, in lat. 43° 49' N., long. 11° 05' W., and will feel much obliged by your acknowledging its receipt by return of post.

I remain, Sir, your very obedient servant,

HENRY TONKIN,

Master of the schooner *Earl of Devon*, of Penzance.

To the Secretary of the Admiralty, London.

“The bottle containing this paper was thrown from H.B.M. *Erebus*, 22nd August, 1843, in lat. 41° 52' N., and long. 25° 50' W. Whoever may find it is requested to forward the paper to the Secretary of the Admiralty, London, together with the date, and a notice of the lat. and long. where found.

“JAMES C ROSS, Captain.”

(To be continued.)

ADMIRALTY COURT DECISIONS. *Case of the "Erin."*

[The following has just appeared in the *Shipping and Mercantile Gazette*, and, knowing the importance of such questions to the readers of the *Nautical*, we transfer it, as it stands, to our pages, agreeing fully in the remarks which accompany it. The case of the *Eliza Cornish*, already alluded to in this journal, we defer for another number.—ED.]

We think it advisable to call the particular attention of our readers—and, especially, of Masters of vessels, our Consuls, and other British Agents, at foreign ports—to the case of the *Eliza Cornish*, which was decided in the Admiralty Court on Saturday last, and fully reported in our columns on Tuesday. In this case Dr. Lushington clearly laid down under what circumstances, and what alone, it was justifiable to sell a ship at a foreign port, without the consent of the owner. The *Eliza Cornish*, having sustained some damage, was sold at Fayal, after several surveys had been held upon her. It is only necessary to refer, in this place, to one of these surveys, when the vessel was declared to be seaworthy, after certain repairs were effected, that were estimated would cost about £300. But, notwithstanding, the Master of the vessel caused a private survey to be held on her, when he came to the determination to sell her as unseaworthy, and she was accordingly sold for the sum of £185, without any sanction or authority but that of the Director of Customs at Fayal. Dr. Lushington, in delivering judgment, clearly laid down the law to be, that necessity alone could justify the sale of a ship without the consent of the owners; and as, in this case, no necessity was shown to exist, the sale was invalid, and the vessel must be restored to the proper owner. It, perhaps, may be thought a harsh measure as regards the foreign purchaser; but the learned judge, very properly, did not decide the case according to the law of England, but according to what was understood to be the Maritime law of all nations. There are, however, other circumstances which may justify the sale of a ship at a foreign port, which were not referred to in this instance by Dr. Lushington, but upon which his opinion has been frequently expressed; namely, when the cost of repairs would exceed the value of the vessel when repaired. The rule laid down is, that the Master of the ship, or whoever may be acting for him, should deal with her as if she were his own property and uninsured; for no man has a right to throw expenses upon the underwriters of a ship which he would not incur on his own account. This is such a plain equitable principle, that no one can dispute it.

Another case, somewhat similar, and precisely so as regards the general principle involved, was decided yesterday on an appeal to the Judicial Committee of the Privy Council. It is true that Sir John Patteson, in delivering the judgment, said—"There was a great difference between the sale of a ship and the sale of a cargo. A Master was entrusted with the ship, not so with the cargo. The latter he

was bound to take to the place of destination, and *could only sell it when necessity compelled him.*" We admit the correctness of what the learned judge says, as respects the cargo on board a ship, but we must remark that the same rule applies to the ship which carries the cargo. The Master is bound to bring the one as well as the other to the place of its destination, and nothing but necessity can justify him in selling either. It is to be regretted that Sir J. Patteson should have made a distinction between the two species of property, when in reality no difference exists. It is possible that the Master of a vessel might be justified in selling a cargo, when he would not be justified in selling a ship which carried it, or *vice versâ*. But these are exceptional cases, each of which must be decided on its own merits. A perishable cargo—such as grain or fruit, for instance—might get so damaged, in consequence of stress of weather, that it might be necessary to discharge and sell it forthwith, for the benefit of all parties concerned; while the ship herself might be repairable, and quite competent to reach her place of destination, or, at all events, to wait for orders from the owner. In this case the sale of the one would be justifiable, while the sale of the other would not. Precisely the same principle applies in both cases. Necessity is the only criterion by which a correct judgment can be arrived at. However, after the decision in the Admiralty Court on Saturday, and that by the Judicial Committee of the Privy Council yesterday, we think no Master of a ship need be in doubt respecting his course of duty in such cases.

JUDICIAL COMMITTEE OF THE PRIVY COUNCIL.—*Sale of Damaged Opium ex Erin (s), at Singapore.—Tronson v. Dent and others.*—

(Present: The Chancellor of the Duchy of Cornwall, the Judge of the Admiralty Court, the Right Hon. Sir Edward Ryan, and the Right Hon. Sir J. Patteson, on Wednesday.)—This was an appeal from a judgment of the Supreme Court of Hong Kong, in an action on promises, brought by the respondents against the appellant, to recover the value of 22 chests of Behar opium, shipped on board the steamer *Erin*, of which the appellant was master, on a voyage from Calcutta to Hong Kong, and alleged to have been lost through the improper conduct of the appellant as such master. It appeared that in the month of July, 1851, the *Erin*, belonging to the Peninsular and Oriental Steam Navigation Company, was lying in the Hoohly, being about to sail for Hong Kong, at which place the respondents carried on business as merchants; and Messrs. Gillanden, Arbuthnot, and Co., shipped 70 chests of opium on board the *Erin*, to be delivered to the respondents. On her voyage the *Erin* came into collision with another vessel, called the *Pacha*, which caused her to put into Singapore for repair, and it was found that some of the opium, viz., 22 chests, was damaged by salt water, and the quantity so damaged the appellant sold by public auction at Singapore. On the arrival of the *Erin* at Hong Kong, the respondents demanded the opium mentioned in the bill of lading, and the appellant tendered the amount realised at the auction, which the respondents refused to accept, and thereupon brought their action. On the case coming on for trial in the court below, several objections were taken by the appellant to the trial proceeding: first, that the judge, who was only acting chief justice, had been counsel in the cause on behalf of the respondents, and consequently had a bias; second, that the special jury list had been nominated by the legislative council, whilst the acting chief jus-

tice and Mr. David Jardine were members of it, the former being at the same time counsel for the respondents, and the latter deeply interested in the issue of the action; third, that the counsel for the appellant was too ill to conduct the defence. The objections were overruled by the acting chief justice, and the trial proceeded. The acting chief justice, in charging the jury, told them that if the appellant could, with reasonable exertion, have brought on the respondents' damaged opium to China, in the marketable state of opium, either in the *Erin*, or some other vessel, from the frequented port of Singapore, he should have done so; that no local usage at Singapore would excuse him (the defendant) from the legal obligation created by the bills of lading; that if, from the evidence, the jury were satisfied the defendant could have, with reasonable exertion, brought on the opium in its specific state, they would, according to the evidence adduced for that purpose, assess the damages sustained by the plaintiffs by the non-delivery of their consignment; but that, on the other hand, if the defendant could not have brought on the 22 chests of opium, they would find for the defendant, by naming the plaintiffs' damage at the sum paid by them into court. The jury returned a verdict for the plaintiffs, and judgment was entered up for 12,302 dollars. From this judgment the present appeal was brought.

Sir John Patteson, in delivering the judgment of the Council, after disposing of the technical points respecting the pleadings in the cause, said that it was clear that such a contract as was alleged in the declaration could subsist, and that a person on whose account goods are supplied might bring an action in respect of them. In *Abbott on Shipping*, 7th edition, p. 283, it was said that it is always important to consider in whom the property was at the time of the damage or loss, and that an action against a shipowner, on an implied contract, might be brought by a person who has some property in the goods. The plaintiffs were the consignees of the goods, and, prima facie, must be taken to be the owners; and if there was such a state of things in a case as would make a declaration good, it must be taken to be good on the face of it. Their lordships were therefore of opinion that the declaration after verdict was good. The question whether the appeal would lie was a point of great importance. If appeals were to be brought before the Judicial Committee, which were only motions for new trials, whether grounded on misdirection or verdict against evidence, without motions being first made in the court where the actions were brought, such proceeding was contrary to the practice of the law of England. It was conceded by Sir Fitzroy Kelly that if motion had been made in the court at Hong Kong, and rule refused, or having been granted, it had afterwards been discharged, it would have been competent to the parties to have appealed to her Majesty in Council against a final order of the court below; but it was incorrect to say that such a thing could be done without such motion being first made. The appeal was against the judgment of the court below, which was manifestly a good judgment. As long as the verdict stood, the verdict was the act of the jury, and the ordinance in the charter did not mention any appeal from a verdict of a jury. In effect, it was an application for a new trial, and not an appeal against an act of the court. It was desirable that it should be known that such appeals as the one in question could not be brought unless application had been first made to the court below. But as this may not have been understood at Hong Kong, their lordships would be unwilling to act up to it in the present case, if they saw that the justice of the case was in favour of the appellants, or could see some mode in which the verdict could be set aside; they would, therefore, consider whether the verdict was right or wrong, but in future they would not take a similar case into consideration. It appeared that the appellant had, as master of the vessel, acted *bonâ fide*, and considered that it was not his duty to carry on or dry the opium whilst the ship was repairing; but he took advice as to what

was best to be done, and sold it, and he was not accused of doing anything which he did not believe to be right and proper. There was a great difference between the sale of a ship and the sale of a cargo. A master was entrusted with the ship, not so with the cargo; the latter he was bound to take to the place of destination, and could only sell it when necessity compelled him. If goods were damaged by a voyage to the amount of 10 per cent., and by carrying them to their place of destination the damage would be increased to 20 per cent., it did not follow that the master could, under such circumstances, sell them where the vessel was then lying; but if it was shown that by carrying them further they would perish altogether, that would give him liberty to sell. In the present case, the evidence respecting the opium was conflicting, some witnesses stating that it would have been better had it been dried, others that it was best to sell. No witness, however, stated that the opium would have been destroyed, but all agree that it might have been delivered in its merchantable character as opium, and if so the appellant was not warranted in selling. His lordship then proceeded to read the charge made to the jury by the judge of the court below, and said that their lordships were of opinion that there was no misdirection, that the verdict of the jury was not against evidence, and that the appeal must be dismissed with costs.

MAGNETIC VARIATION.

Table showing the mean monthly westerly declination, or westerly variation of the magnet, and the mean monthly dip, at the Royal Observatory, Greenwich, in the year 1850.

1850.		
	Variation, W.	Dip.
January	22° 28' 5"	68° 48' 25"
February	22 27 28	68 53 75
March	22 26 54	68 51 50
April	22 25 44	68 51 90
May	22 25 1	68 54 88
June	22 24 47	68 49 88
July	22 23 41	68 51 25
August	22 22 4	68 47 0
September	22 25 43	68 36 50
October	22 19 1	68 41 70
November	22 18 27	68 36 42
December	22 18 27	68 36 75

The mean variation has been found by taking the mean of two-hourly observations; the mean dip by taking the mean of morning and afternoon observations, made twice a week.

G. B. AIRY.
Astronomer Royal.

EFFECT OF WHIRLWINDS UPON THE BAROMETER.*

As hints upon important subjects seldom fail to elicit useful remarks from the friends and promoters of science, so the hint lately thrown out respecting the Barometer has called forth a question, which at first sight might appear

* See "Hint on the Barometer," in the May number.

extremely difficult to explain, if not wholly unanswerable, on the supposition that the air is affected by the force of centrifugal motion like any other moving body, but which upon more mature reflection will be found to receive the most satisfactory solution from that very hypothesis. The question asked is this. How are we to account for the fact that in the centre of a rotatory hurricane, where the air is comparatively calm, the depression of the barometer is the greatest; and as the distance from the centre increases, though the velocity of the wind becomes proportionably greater, the mercury rises? In endeavouring to assign a reason for this apparent anomaly, it is only necessary for me to observe that whirlwinds are anomalous or peculiar winds; that the air thus moving not only has a tendency to fly from the centre of the earth, producing a pull, as it were, upwards, as in ordinary winds, but that it has a similar tendency to fly from the centre of the storm in a horizontal direction, so that the innermost portion becomes pulled towards the circumference on all sides, and being elastic is stretched or expanded by this means, and consequently weighs less. According to Piddington's "Horn Book of Storms," and Col. Reid's "Progress of the Development of the Law of Storms," &c., the same idea appears to have been entertained by other authors, especially by Mr. Redfield and Dr. Alex. Thom, the latter of whom conceiving the rotation of the whirlwind to be caused, in the first instance, by opposing currents of air, farther inclines to believe that "as the external motion is imparted to the interior of the mass, and centrifugal action begins to withdraw the air from the centre and form an up-current, the whole will soon be involved in the same vortical action." The up-current he explains as being formed by the pressure being removed from the centre, when the air there "increases in bulk, diminishes in specific gravity, and its upward tendency follows as a matter of course." There is evidently, however, but one condition from which such an effect would ensue; for admitting the interior of the mass to be rarefied to any extent by centrifugal action, the continuance of that action, which withdrew the air from the centre, would be sufficient to prevent its return in the same direction, that is to say laterally, and since there would be no other inlet for the admission of a farther supply, if the storm extended from the lower to the upper stratum of the atmosphere, the ascent of the inner portion in the manner described would necessarily produce a vacuum, which, in the language of the ancients, nature abhors.

Or supposing the uppermost side of the whirlwind not to reach the surface of the atmosphere, then as the air became drawn off laterally fresh air would rush in from above, and a downward current, instead of an upward, would be the result.

But supposing its lower part to be elevated above the surface of the earth, then, and then only, an ascending current would be formed, as above stated. From the familiar but admirable exemplification of whirlwind storms by Mr. Redfield, who compares them to a quantity of water put into rapid revolution in a tumbler, he seems to take for granted that the whole height of the atmosphere is involved in their rotation; and his conclusions are drawn, as they should be in that case, without any reference to a vertical current at the centre. He, however, falls into the popular error of confounding quantity with weight, or rather with pressure, and reasons from the concave form of the water, whilst revolving in the glass, as though it were quite stationary, and its pressure downwards in direct proportion to its height. That this is not tenable, I think I have already proved. The pressure of the fluid must first be corrected for velocity before its dead weight, and, consequently, its true depth from the upper surface can be ascertained. Yet, so far from Mr. Redfield's main conclusion being invalidated by this circumstance, the effect of the proposed correction would only be to render the concavity of the surface of the revolving fluid pointed out by him more strongly marked, by increasing the elevation, as indicated by the barometer, of the parts already highest, viz., those at a distance

from the centre, which, having the greatest velocity, would require the greatest correction, whilst the centre, being calm, would retain its original height without alteration. Thus corrected, the concavity deduced from pressure would become more closely assimilated with that which would be shown by vertical measurement, could such measurement be resorted to. I cannot but feel assured, therefore, that the universal application of the before mentioned correction, subject of course to such improvement as may hereafter be found necessary, will at once be acquiesced in by men of science; and that they will see the manifest advantage of adding it to the barometric pressure, as a counterpoise for the effect of motion in all winds, rectilinear, curved, or circular.

J. N.

NAUTICAL NOTICES.

SUBMARINE VOLCANO, SOUTH ATLANTIC.

[We have received the following from a quarter in which we can repose entire confidence. In our May number, p. 222, we inserted something similar. As the subject is one of considerable interest, if not importance, perhaps others of our readers who may have experienced the same in about the same locality would oblige the Editor with their observations on it. Some submarine volcano has no doubt been in operation to produce these extraordinary effects.]

To the Editor of the Nautical Magazine.

23, Berkeley Street, Liverpool, 17th June, 1853.

DEAR SIR,—Having commanded a large ship bound to the East Indies, with very favourable winds we crossed the Line in 24 days, and then till 6 or 7 degrees to the Southward of the Line had light winds. On the 17th July, in latitude $3^{\circ} 30' S.$, longitude $24^{\circ} 30' W.$, a sudden trembling of the ship was felt; I was on the lower deck at the time. The mate, who was on deck, called loudly to me, saying, the ship is striking on rocks, for such it appeared to be. I immediately ran on deck, and ordered the helm down. Although there was a nice light breeze, the ship would not answer her helm. I looked over the side; the water around us appeared to be agitated as if boiling, and a short distance from us was a vapour ascending as if from a furnace. All hands witnessed this extraordinary sight. We got the long lead line along, and payed to 110 fathoms, but no bottom was found. The lead and line was very warm when hauled in. I have heard of its having been seen before, and about the position it is placed upon the charts. I can verify to the truth of this statement. The mate died on the coast, or he would have confirmed this report of

Your's obediently,

J. H. C. SHORT.

P.S.—I unfortunately lost all my journals when wrecked last November on the coast of Ireland; they consisted of daily journals kept for seven years.—J.S.

NEW REEF.—SUPPOSED WRECK.

H.M.S. *Eugenie*, Sydney, October, 1852.

SIR,—I here enclosed send to you two Memoranda, which I beg you to forward to the Agent for Lloyds, under the hopes that the one may be of use

to the navigation in those seas, if generally known, and that the other may in any way spread a light over the loss of some vessel.

Believe me, dear Sir, your most obedient servant,

C. A. VIRGIN.

To J. Were, Esq., Royal Swedish and Norwegian Consul.

MEMORANDUM.—Off the Tonga Island, to the north-eastward of Haano, there is a reef, which is not laid down in some charts, and incorrectly in others. We saw the sea break upon it with a high swell from S.S.W., but it is very likely that in ordinary circumstances no breakers are to be seen on it. The breakers were seen by night, but after sunrise the frigate passed close by them, so that there can be not the least doubt of the existence of the reef. It is not laid down in the French chart by Vincendon Dumolin, published in 1849, which places the easternmost point of the Island of Haano in long. $174^{\circ} 1' 35''$ W. After having been ten days at sea from Tahiti, when the chronometers were rated, we made its long. $174^{\circ} 22'$ W., the three chronometers agreeing within less than a mile and a half; and at three weeks later they gave the long. of Port Macquarie, Sydney, within three miles of that deduced from the long. of the Parramatta Observatory, as given in the *Nautical Almanack*. I think the determination of the long. at Point Venus, at Tahiti, on which it is based, is taken to be $149^{\circ} 30'$ W.

In Laurie's large chart of the Pacific Ocean, published in 1847-48, a reef, very likely the same as that seen by us, is laid down, though in a somewhat different position. The long. of Haano in that chart is the same, or very nearly so, as in the French one above-mentioned, and the reef or shoal is in lat. $19^{\circ} 10'$ S., long. $173^{\circ} 41'$ W., bearing from the north-eastern point of Haano N.E.b.E. (true), distant 35 miles; whereas most likely it is situated in lat. $19^{\circ} 18'$ S., long. $174^{\circ} 12'$ W., bearing from the same point N.N.E. $\frac{1}{4}$ E., distant 25 miles. It is to be hoped that the future navigators will turn their attention towards verifying the position here assigned to this reef, which may prove dangerous to many vessels, although not situated near what may be called the high road of navigation and commerce in the Pacific.

His Swedish Majesty's ship *Eugenie*,

At anchor in Port Jackson, October 26th 1852.

C. A. VIRGIN, Captain.

MEMORANDA.—Heaving to off Savage Island, lat. $19^{\circ} 10'$ S., long. $169^{\circ} 57'$ W., the Indians came on board, and offered for barter several things which appeared to have belonged to an English vessel which might have been wrecked and plundered near that island. These things were, a ship's binnacle, a sextant in wooden frame, Dr. Johnson's *Comprehensive Dictionary*, with the name of John Baddinnur, January, 1851, on the inside of the cover, and bound in cloth, a prayer book in the same binding, several pieces of log line. The frigate was near the Savage Island on the 27th September last.

C. A. VIRGIN, Captain of H.M.S. *Eugenie*.

Port Jackson, October 27th, 1852.

This shoal was reported to the Commander-in-Chief in the Pacific in 1848, agreeing with Captain of Swedish ship-of-war *Eugenie's* position. Her Majesty's ship *Calypso*, when proceeding to Lifuga in the Hapaiis, keeping off and on the North end of Haano Island, carefully avoided it during the night; but from information I received from — Morgan, an Englishman and Pilot for the Friendly, Hapaii, and Vavao groups, that there is a continuous line of soundings from Haano Island to the southernmost of the Vavao Islands, and that in bad weather he has seen the water break heavily in 20 fathoms. I should think that the reef mentioned by the Swedish Captain is a part of these soundings.

ROBERT KNOX, Master of H.M.S. *Calliope*.

SAILING DIRECTIONS FOR THE COAST OF THE NORTHERN ISLAND OF NEW ZEALAND.*

Doubtless Bay is clear of danger, with the exception of the Fairway reef and Albert rocks.

The Albert reef of the charts is not a reef, but two rocks well above water with a channel of not less than 10 fathoms between them, and both are steep to all round, and a vessel may run between them as they are not sufficiently high to cause eddy winds.

The Fairway reef is all connected by a few sunken rocks, and a few just above water.

Two miles N.N.W. of Knuckle point is Matai bay.

There are two inner bays, the West having the best anchorage in 5 fathoms sand.

These inner bays (Ohungahuuga and Waikata) are divided by a narrow peninsula, on the summit of which has been a most impregnable Pa.

In the East bay is the native village of Orurua, from which fresh water and supplies can be obtained.

The hills rising behind this village are remarkably red, which will point out Matai bay.

The only danger on entering the outer bay (Matai) is a rock just covered at high water, and in mid-entrance it has 25 fathoms all round it, and will almost always show. It is $1\frac{1}{2}$ mile N.N.E. of the peninsula. These bays cannot afford a good anchorage in a N.E. wind.

South east of Matai is a small bay also having a rock at its entrance. It is called Orurua bay.

North of Matai bay to Cape Karakara the shore is bold. The near off laying rocks being generally uncovered.

West of Cape Karakara are the Moturoa islets; the extreme islet is 3 miles West of the Cape, and no rocks without it. There are deep channels between some of these islets, and between them and the main; but there are also sunken rocks midway between some of them which only occasionally break, and therefore should not be attempted by a stranger, or indeed anything but small coasters.

From Karakara the land trends S.W. There is from 10 to 12 fathoms of sand across Karakara bay, which terminates with a flat topped hill 300 feet high, called Puheki, and which is a guide to Rangaounou or Awanui river, being $2\frac{1}{2}$ miles East of it.

The entrance to this river is a bight 7 miles S.W. of Karakara point of Doubtless bay, a range of hills from 200 to 300 feet from the East head extending 2 miles up the river

From the West head, which is sandy and low, the sand downs commence, and with the exception of Mount Ohora, are continued to Parengarenga, and occupy the whole neck extending on the West coast from Ahaipara to Cape Maria.

There are rocks above water off the North head, and one two-thirds of a cable off (a wash). The channel has not less than $3\frac{1}{2}$ fathoms, and leads to an anchorage in from 5 to 7 fathoms, and if the rocky ground off Te Kotiatia point had a buoy on its outer entrance it would leave a channel of not less than 3 cables.

* In reference to these remarks, I wish it to be understood that poritons of the coast here treated of are still undergoing further examination, and in the course of the survey hidden dangers may be discovered, which are by no means uncommon in these seas.—B. Drury, Commander of H.M.S. *Pandora*.

On entering Rangaounou pass two cables from Motu Tara rocks off the East head, for there is one sunken outside those seen dry.

Steer S.b.W.½W. shoaling from 7 to 3½ fathoms until about two-thirds across the entrance. When Te Kotiatia point bears E.¼S. haul up S.E.b.E.¼E., and pass fully half a mile from Te Kotiatia point, and when it shuts in the East head, anchor in 5 to 7 fathoms, sand, three quarters of a mile above the point.

This is the deepest water. Half a mile above this the river flats with narrow channels commence.

Te Kotiatia point within two miles of the East head, is easily known as being the termination of a range of hills, and has a flat top.

Rocks extend one-third of a mile from East to South of this point.

The West shore again is shoal, but it is sand.

There are rocks also in Kohonga bay, South of Te Kotiatia point, but they are above the anchorage.

There is no bar at the entrance of this river, but a mile from the mouth, a spit having 2 fathoms extends North, 2 miles from the West beach, but leaving a channel of 7 fathoms between it and the East head.

The low sandy beach extends from Ranga Ounou 6 miles E.b.N., when Mount Camel rises 820 feet above the sea level.

Immediately to the N.E. of this mountain is a very snug bay, clear of danger and a good anchorage. A vessel might ride out any Westerly gale from North to South in 7 to 5 fathoms, and fresh water may be obtained with a little difficulty, and an abundance of fish. If on reaching the neighbourhood of the North Cape, from the Southward a vessel should meet with a North West gale, instead of contending against it they should at once proceed to Ohora bay.

One mile S.W. of the bay is Ohora river, which on the approach of a N.E. gale might be entered by vessels not drawing more than 15 feet. The high land on the North shore must be kept on board within half a cable on a West course until a small round islet (Motu Otuna) is seen just opening to the left of Tokourou Islet W.N.W., which is the course in.

Moor well over on the North shore soon after passing the South sandy point, having the summit of the mountain bearing N.W.

As a sand spit extends half a mile from the South shore, the channel is rendered very narrow, and the room for anchorage small; and the tide being very rapid, this river should only be run for under favourable circumstances, or on the first approach of bad weather.

There is another bay to the N. (3 miles) of the mountain, but the anchorage is not equal to Ohora bay; between it and Ohora bay are two rocks awash a quarter of a mile from the steep cliffs.

Leaving Ohora, three islets stretch to the Northward, 1½ mile from the coast, steep to.

The coast then trends N.E.b.N. for six miles, low cliffs and sandy bays.

Then a sandy bay of 11 miles in length is terminated by Parengarenga. The soundings are regular off the coast, having 12 to 16 fathoms from 1 to 2 miles off, sandy bottom.

Parengarenga is 6 miles South of the North Cape, has a bar of 15 feet, a narrow entrance, but plenty of water within. It branches into three extensive creeks.

The Bar generally breaks, but our open boats crossed it twice during Westerly winds. In N.E. winds it would be very heavy.

The outer part of the Bar is 1½ mile from the shore, and when at the entrance Kohau or Coal point, (a point two miles from the entrance,) bears N.E., steer in West until a low sandy point is on with the point of Kotihau, bearing W.S.W.

N.B.—Kotihau is a cliff point 20 feet high, a mile beyond the sand point.

This course leads to a safe anchorage in 4 or 5 fathoms, but until this river is buoyed, the channel will be best seen from aloft.

When within the Bar, the South shore is steepest.

The Bays within the North Cape offer good anchorage in 5 to 12 fathoms in moderate Westerly winds, but the back swell rounding the North Cape would render them bad anchorages in strong breezes.

Off the North Cape Islets foul ground extends for one-third of a mile N.E.b.E., at the extreme of which is a rock which is only uncovered at low water. After rounding it, the steep red cliff rising at the Cape to 740 feet, gradually slopes for three miles.

An open bay (Tom Bowlin's Bay) has been a temporary anchorage for whalers receiving supplies from a native of that name; but it is a very exposed anchorage.

The coast now takes an Easterly direction, bold and precipitous, with bare hills rising to 900 feet.

Midway to Cape Maria an islet extends from a rocky point; within this a sandy bay stretches W.S.W. for 3 miles, having a small stream at each end. From thence to Cape Reinga the coast is rocky and precipitous, but apparently free from dangers, if we except a whirlpool which is spoken of, but which we have not yet seen.

From off Cape Reinga, Columbia reef extends Eastward 2 miles, constantly breaking. There is a channel between it and the main for small vessels. But the soundings on this coast will undergo a closer examination this season.

Off Cape Maria is the *Pandora* bank (officially reported on December 11th, 1851). It is 8 miles from S.½E. to S.b.W. from the Cape, having 5 fathoms, and generally breaking. Between it and the main is a channel of 15 fathoms.

Cape Maria Van Diemen is a projection from a sandy isthmus, and appears like an island, and not more than 100 feet high. Immediately N.E. of it is a double islet about half a mile in circumference, but no channel within.

The long beach from Cape Maria Van Diemen, South, is an uniform hard sand. Twelve miles down is the small rocky islet of Motu Pea, 50 feet high, 2½ miles from the shore; it is the only unconnected spot on this coast. There appeared to be deep water within it, but the constant rollers would prevent a vessel from taking the channel.

The rocky (almost islet) of Monganui connected with the sands at low water, and about 10 miles S.E. of Motu Pea, are the only varieties in this monotonous sandy beach of 45 miles, ending at Ahaipara.

Ahaipara is not sheltered from West winds, but in fair weather coasters anchor or lay off, and boats find good landing in Ongonga bay.

Reef point is a long and table projection. The shoal water extending from Reef point appeared inconsiderable, but this we also hope to approach seaward. A mile and a half South is a remarkably sandy ravine. The sea is said to be encroaching here fast.

Herekino, or False Hokianga (nine miles South of Ahaipara) is only navigable for boats at the finest season of the year; at the mouth is 9 feet at high water.

There are sand hills chequered with green patches on the North shore; from the South head the bare hills rise suddenly to the height of 800 feet, and continuing the same level to Wangape with a table summit, and deep ravines to seaward. Forty feet of timbers of H.M.S. *Osprey* are left on the North entrance.

Wangape is 5 miles to the Southward of Herekino. It has bold heads, but a rock is at the entrance which we have not seen, called Maniawa, and the channel is not more than a quarter of a mile in breadth.

If a ship came in here with a strong flood she must inevitably go on shore one side or the other; at every turning the tide sets to the opposite shore. There is however five fathoms in the channels.

It must be a decked vessel of small tonnage to enter under canvass.

There is a sunken rock in the channel, but no Bar, and the North channel is the best.

No vessel drawing more than 7 feet should approach Herekino.

From Wangape to Hokianga is $11\frac{1}{2}$ miles; S.E. about 5 miles brings you to the sand hills extending to the North head of Hokianga.

HOKIANGA.—The entrance to Hokianga from the Northward is known by the North head of the river being the termination of a sandy range extending for 8 miles, varying from 100 to 300 feet high.

To the Southward of Hokianga no sand hills are to be seen until passing Monganui bluff, when it is all sand again to Kaipara.

Monganui bluff is very high land falling abruptly to the water 20 miles South of Hokianga, and on a tolerably clear day will be seen long before reaching Hokianga. There is no land like it on the coast, and it is a good mark to make at any time for vessels approaching ports on the West coast.

A constant swell from the Westward breaks heavily on the beach, and the bar is almost always breaking, and when this is the case a vessel should be prepared for shipping a sea. Three rollers and you are over it.

No vessel should approach without a leading wind; she should be there so as to carry the flood into the harbour. But should the first of the ebb have made, and the bar should appear to be passable, it must still be borne in mind there is a tide of five knots per hour to contend against, with a chance of the wind falling: and the anchorage between the bar and heads is very bad.

Steering S.E. until you are within 4 or 5 miles of the heads, keep over to the Eastward until you bring Martin's White Cottage on with the South head E.b.N. $\frac{1}{2}$ N.; keep this cottage (which may be seen 5 miles) a cable open for the deepest channel.

The outer edge of the bar is $1\frac{1}{2}$ mile from the heads; it will be found to shoal from 8 fathoms to $3\frac{1}{2}$ at one cast.

Monganui bluff is then in transit with a low point about 6 miles distant, and the shoalest of the bar is when Monganui bluff is in transit with a nearer point, and when three points are in transit the bar is crossed, and the water deepens.

There are then two dangers (North of the channel) to be avoided, the nine feet rocks and a patch off the North head making the channel at the heads narrow, but by keeping the South head on board, and the cliffs extending from it to Martin's bay just open, they are avoided.

It must be remarked, the ebb sets directly upon the South head spit, and in going out due allowance must be made for weathering it. On it the *City of Edinburgh* lost her rudder, and small vessels have drifted on it during light winds.

There are no dangers in Martin's bay, and the holding ground is very good, but there is generally a considerable swell; it is therefore better not to anchor until passing the middle ground.

N.B.—Vessels anchor in Martin's bay to wait an opportunity of crossing the bar, which might be lost by being further up.

There is a good channel either side of middle ground, but the East channel is the broadest.

There is foul ground off the Wairohea, which frequently causes a race, and the outer ledge is only dry at springs,

When the South head is S.S.W. steer N.E. until Young's point bears N. $\frac{1}{2}$ E. Steer for Young's point until midway between the low sandy point Rangī and Young's point. Then edge over to Westward to avoid the bank South of Young's point, but do not shut in the North head with point Rangī.

After passing Young's point steer for the next, Kowwarri.

Abreast Mahenna island will be found the least water.

Keep a cable off Kowwarri point, which has rocks off it covered at half tide. When Kowwarri point is abreast steer for Tekaraka point, to avoid an extensive

flat between it and Onoki; but when nearing Tekaraka edge away for Direction head, not coming within a cable of Tekaraka, as rocks, dry at low water, extend from the Southward of it.

The river course is now N. F. b. E., and by keeping in mid-channel all dangers are avoided.

From Mutawhera point (steep to) keep Hurds point (a long low point) on the starboard bow, to avoid the extensive flat formed by the Omanai.

From abreast of Hurds point steer for the North point of Narrows.

To pass through the Narrows, which are very deep, a vessel should have a commanding breeze or slack water, as the tide, sometimes of four knots, sets from point to point.

The only danger in the Narrows is the Kohatutakataka rock, which is covered at low water, and extends a third way across from the North point of the upper end of Narrows; it is steep to from the Southward, but there is no channel between it and the North shore.

From the Narrows give the North bank a fair berth, steering for Motuti (a low sandy islet).

Between this and Kokohu is the best anchorage, and vessels can proceed as far as Houraki, but no further, and even here she would require to moor short, or head and stern. The channel to Houraki is between Putupapaka, a low Mangrove island, and the Mission Station point, keeping the South shore on board after rounding within half a cable of the Mangrove point of the Mission Station.

In beating down the river, as a general rule do not get within the line of the point you leave and the point you are approaching, as the mud flats (however deep the bights) extend from point to point, and are invariably steep to.

The Narrows should be passed with a leading wind, unless a pilot understanding the set of the tides should undertake to beat a smart vessel through.

(To be continued.)

NOTICE TO MARINERS.

SAND CAY LIGHT, FLORIDA REEF.—[No. 135.]—Her Majesty's Government has received information, that the Lighthouse on Sand Cay, which was destroyed by a hurricane in 1846, has been rebuilt, and that the light will reappear in the course of next month.

The Light-tower is cylindrical, but stands on a square base supported by 17 iron piles, and the whole structure rises 121 feet above low water, and is all painted black, except the lantern, which is white.

The Light is Fixed, but varied by Flashes; for one minute showing a steady light, and in the next minute a flash of ten seconds duration, preceded and followed by eclipses of 25 seconds.

It stands in $24^{\circ} 27' 9''$ N., and $81^{\circ} 52' 43''$ W. of Greenwich, and being about 100 feet above the high water level of the sea, may be seen in clear weather at the distance of 16 miles by an eye 15 feet above the water.

LIGHT ON SORELLO POINT, NEAR CAPE GRANITOLA, ON THE SOUTH COAST OF SICILY.—[No. 136.]—Her Majesty's Government has been officially informed that a Fixed Light, but varied by a Flash every three minutes, was to be established on the 20th of this month on Sorello Point, or south-eastern Point of Cape Granitola, in $37^{\circ} 33' 50''$ N., and $12^{\circ} 37' 36''$ E. of Greenwich, on the South Coast of Sicily.

The Light will appear at an elevation of 87 feet above the level of the sea, and will be visible in clear weather at the distance of 14 miles from the deck of a moderate sized vessel.

KALEAN LEDGE.—*Channel to Minto Roads, Banca.*—The following are bearings of a shoal situated in the inner passage to Minto, between Karang Hodjie and the shore as fixed by Captain Van der Moore, of H.N.M. steamer *Batavia*, on his last voyage to this:—Tanjong Kalean, S.E.; Tanjong Bersiok, N.½W.; the Monopin Hill, N.E.½E. At low water there are about six to nine feet water on the reef, and not three to nine fathoms, as marked in the latest Dutch charts by Lieut. Smidt.—*Singapore Free Press*, April 22.

[We find the foregoing in that valuable journal the *Shipping and Mercantile Gazette*, June 22, and on consulting Lieut. Smidt's chart of 1846, published by Mr. Swart in 1847, (corrected to 1850,) we find in the plan of Minto Roads the shoal alluded to, and called the Kalean Ledge, with *three to five fathoms* on it. It is in a dangerous position to ships from the Northward intending to bring up in Minto Roads, and to avoid it ample directions are given in the "Seaman's Guide round Java," &c., published by the Hydrographic office, and as it has as little as six feet on it, instead of eighteen, it should be carefully avoided.—ED.]

REPORT ON MANNING THE ROYAL NAVY.

(Continued from page 330.)

Effect of the Abolition of the Apprenticeship system in the Merchant Service.

7. We cannot omit to notice that the Act 12 and 13 Vict., cap. 29 (1848), which repealed the thirty-seventh section of the Merchant Seaman's Act, relating to apprentices, has had the effect of greatly reducing the number of boys who were annually trained in the merchant service. It appears, from the annexed return from the Registrar General of seamen, that between 1848 and 1851 their numbers were diminished no less than 6,165, showing that the ultimate operation of the act must seriously diminish the resources of the mercantile marine as a nursery for thorough-bred seamen; for the ordinary seamen now introduced into the merchant service as substitutes for apprentices are less constantly afloat, and therefore less likely to become experienced seamen; which circumstances offer additional motives for the Royal Navy to rely more exclusively upon the boys and seamen educated and trained therein.

Expediency of Forming a Standing Navy.

8. With these considerations in view we have come unanimously to the conclusion that the time has arrived for placing her Majesty's Navy on a more permanent basis, upon a similar principle to that established in the Army and Marines; and that solid advantages both to the Crown and to the seamen will result therefrom.

To be effected by voluntary service.

9. In carrying out this measure we are very desirous that it should be effected wholly by voluntary service; we do not propose, therefore, that any change of a compulsory character should be made in the existing system, but that men should be permitted, as at present, to enter under the provisions of Act 5 & 6 Will. IV., cap. 24, which requires them to engage for a term of five years; but we cannot doubt that great national benefits will be attained by the future entry of boys and seamen under an engagement to remain for a period of not less than ten years continuous service, upon which latter term we propose the constitution of a standing navy, to be maintained in time of peace at such numerical force as her Majesty's Government shall determine.

10. The following measures will, in our opinion, effectually accomplish the object we have in view; and for the sake of perspicuity and more ready reference we have placed them under their distinctive heads.

BOYS OF THE SECOND CLASS.

Age from which time should count for pay and pensions.

11. We propose that the age of eighteen (instead of twenty, as at present), should be the age from which boys and seamen, entering the Navy under the new system, should be allowed to count their time for pay and pensions, according to the rule now in force in the Royal Marines, under the provisions of the Act 10 & 11 Vict., cap. 63.

Term of service.

12. All boys under the age of eighteen, who hereafter enter the Navy, to be required to engage for a period of ten years continuous and general service from the above age, in addition to whatever periods may be necessary until they attain that age; which is the course now followed in the case of boys who enter the corps of Royal Marines; thus a boy entered at fourteen would be required to engage for a term of fourteen years service.

Age for entry.—Attestation.

13. We advise that boys should not be entered under the age of fourteen, as their physical and mental powers will be more developed than at an earlier period, and afford a better guarantee for their future growth. Their age should be attested in a somewhat similar manner to that adopted in the Royal Marines.

Medical examination on first entry.

14. Before the admission of boys is confirmed, we recommend that a survey be held on them by a Board of three Captains or Commanders, and three Surgeons, who shall certify to the boys being in all respects fit for her Majesty's service.

Stature and Weight.

15. The returns we have received from the several home ports of the weight and height of the boys who have recently been admitted into the service, show that under-sized boys have occasionally been entered, who do not afford a fair prospect of attaining a proper stature in after years; we therefore propose that a standard of height for all boys hereafter entered be re-established, as below stated; and that weight, although omitted as a qualification, be inserted, for information in the reports of survey respecting them.

Ages between		not less than		Stature. ft. in.
14 and 15	-		-	4 8
15 " 16	-	"	-	4 10
16 " 17	-	"	-	5 0
17 " 18	-	"	-	5 2
After 18	-	"	-	5 4

Outfit.

16. It has been stated in evidence before us, that many promising lads, in all respects fit for the service, have been rejected in consequence of the inability of their relations or friends to produce the sum of 40s., which is now required as an outfit; and as boys can be provided with whatever clothing they may want, at a cheap rate, and of excellent quality, from the ship's stores (the value of the same being abated from their growing wages), we submit that no sum be demanded as an outfit for boys of either class who may hereafter enter the Navy.

(To be continued.)

NEW BOOKS.

A SUMMER SEARCH FOR SIR JOHN FRANKLIN, by *Commander E. A. Inglefield, R.N., in the Screw Discovery Vessel "Isabel," 1852. Harrison, 59, Pall Mall.*

There cannot be a more conclusive evidence of the absorbing interest attached to the Arctic Expeditions in search of Sir John Franklin, than the fact that every voyage has been duly chronicled and issued from the press in the shape of some charming little narrative.

Foremost among these (always excepting Sherrard Osborn's sparkling narrative) stands the *Summer Cruise* of Captain Inglefield.

In a little vessel of some 140 tons, in the short space of four months, he verified the prediction of Sir John Barrow, that "any gentleman of the Yacht Club might easily accomplish a voyage of pleasure round the shores of Davis Strait and Baffin Bay in five months, and during that time might run far enough up Sir Thomas Smith's Sound to ascertain the insularity or otherwise of Old Greenland, and thus remove a blot from the geography of Northern Europe."

It has been the good fortune of Captain Inglefield to remove the blot, and in four months to cruise completely round Baffin Bay, which is no Bay at all, (as also predicted by Sir John Barrow in the *Quarterly Review* some thirty years ago,) and if not actually to prove the insularity of Old Greenland, at least to go far towards it by his "peep into the Polar Basin," as he quaintly terms his visit to Smith Sound.

The intelligence of this probable opening into the Polar sea has come most opportunely for Dr. Kane, who sailed from New York on the 31st of last month direct for Smith Sound, in the *Rescue*, fitted out again by the noble minded Grinnell, and under the immediate sanction and superintendence of the United States Government. His object will be to push directly Northward towards the pole, and endeavour to explore its locality.

Prior to looking into the Polar basin, Captain Inglefield took his vessel into Whale Sound, and there discovered an open sea stretching away to the Northward and Eastward. He also penetrated further than any one has yet ventured into Jones Sound, and found an unbounded sea, more or less frozen it is true, stretching to the Westward and Northward.

A "peep" at Pullen at Beechey Island secured in his winter quarters may be considered as the last exploit of Captain Inglefield, and from that quarter he brought home intelligence of as late a date as the 7th of September.

In addition to all this we are indebted to Capt. Inglefield for numerous corrections of the Chart of Baffin Bay.

When we consider the limited means at his disposal, and the short period of his absence, there is no question that the Hydrographer of the Admiralty has correctly pronounced it to be "one of the most remarkable voyages upon record."

The book is neatly got up, and embellished with some artistic lithographs from Captain Inglefield's drawings; and in the appendix will be found a clever paper of Dr. Sutherland's on Meteorology and Geology. We can safely recommend a perusal of this book to the readers of the *Nautical*; the style is simple and unaffected. Some *great* names are bestowed in the high latitudes, where Captain Inglefield evidently thinks there should be high life, Louis Napoleon Island to wit.

TOUR ON THE CONTINENT IN THE SUMMER OF 1852, BY RAIL AND ROAD. *By John Barrow, Esq. Traveller's Library; Longman.*

A useful little book for Tourists, and within the reach of every one, the price being only one shilling. The following extract will convey an idea of the nature of the work, which our friend Mr. Barrow tells us in the preface is only meant to be a pocket companion, touching very slightly at the several places visited, and that it pretends to nothing more.

"VENICE.—Venice is approached by the rail, which somewhat destroys romance; yet, but for the rail, I never should have seen Venice. All honour then to the immortal Stephenson! The bridge which has been carried across the lagoon is a splendid work. It consists of a great number of arches, nearly all the piers being built upon piles. It was constructed by the Lombardo-Venetian Railway Company; the first stone having been laid in 1841, and the whole completed in 1845.

"We got rooms at the *Hotel Royal Danieli*. Often, from boyhood, have I wished to visit this spot, and to be able to say,

‘I stood at Venice on the Bridge of Sighs.’

In 1840, when at Milan, I had intended to do so, but was stopped by the excessive heat of that year, to escape from which we crossed the Stelvio, and were soon in a snow storm. And *now* my wish is accomplished; and here, thanks to the rail, I am writing this at Venice.

"August 15.—We made the most of our time yesterday, and were skulled about in a gondola. To one unaccustomed to the sight of these boats, there is a somewhat triste, funereal look about them. Nearly all are painted entirely black, within and without, with canopies of black cloth, relieved only by an occasional small brass ornament on the sides of the door—a dolphin, or a shield for a crest, or a coronet; and these bright pieces of brass only tend the more to remind one of what, in England as elsewhere, has no very agreeable association. It is difficult to know why this sombre colour is adopted so universally, unless it be that intrigues, political or otherwise, may be the better carried on, where one gondola is the counterpart of another; much in the same way, and for the same cause, that in Vienna, *on dit*, the gentry drive about in vehicles, with numbers upon them, in imitation of the public vehicles—a fact I cannot vouch for, and considerably doubt. There are, however, a few gondolas which have coloured canopies, and there are some painted white, of a larger size, with the familiar and (*horresco referens*) plebeian word, *OMNIBUS!* painted upon them.

"The gondola is a boat most admirably adapted for the purpose to which it is applied, and they are very skilfully handled. Being of so light a construction, and the bow and stern so much out of water, that they can be turned almost upon a pivot by the slightest motion of the paddle. They are propelled by two men (*gondoliers*) standing up, one at the bow and the other at the stern, who, with their feet, and a forward inclination of the body, keep time to the stroke; and on approaching the several windings and turnings round the sharp corners of the houses, all of which are built upon piles, call out lustily which way they are coming, whether to the right or to the left, and by this means collisions are avoided. The turns are quite sharp round the corners, so that it is impossible to see whether anything is in the way or not; but, if no answer is given, the passage is assumed to be clear. There are many hundreds of these boats; indeed it is only by means of the canal that persons can conveniently go from place to place. There are a few streets in Venice, or, more correctly speaking, a few courts, narrow and paved for foot passengers, but there is not a horse or vehicle of any description. Gondolas supply their place. Lord Byron's description of them is inimitable.

"We passed through several of the narrow streets of Venice, which we found swarming with people, and I was particularly struck with their pallid and enfeebled look; even the soldiers quartered at Venice partook of the same appearance.

"It really was sad to see the naturally healthy bronzed countenance of the Hungarian soldier, to which we had everywhere been accustomed since leaving Prague,

—'brown with meridian toll,
Healthful and strong;'—

now 'sickly o'er with the pale cast'—of Venice. Can it be otherwise, notwithstanding the tide which now rises and falls a foot or two?—a narrow, crowded city, intersected with canals, into which all the filth finds its way, and which, under a summer's sun, comes reeking up into the gondolas, enough to stifle one in some spots. On looking over the *Livre des Etrangers*, at the *Hotel Royal*, at Milan, (on our arrival there,) I saw that the parents of two young men, both under age, had been suddenly summoned from the north of England to that city, in consequence of the dangerous illness of their sons, brought on by malaria, caught at Venice. They arrived only to find both dead, and to follow their remains to the grave. There may be some romance in cruising about in the gondolas, and I quite delighted in them; but it must be admitted that there is a good deal to destroy the romance; and I find (being an old traveller) no small advantage from carrying with me, as I usually do, a good supply of Eau de Cologne; but at Venice I should recommend Otto of Roses, Eau de Cologne not being strong enough to overpower the odours. If Venice 'offers many conveniences as a winter residence, it is insufferable in the summer months,' as Mr. Rose observes (in his *Letters from Italy*); 'the small canals (to borrow a phrase I once heard from an English lady's-maid,) have not at any time a *pretty smell* with them.' Possibly a little of Sir William Burnett's chloride of zinc might prove an antidote. In England, fortunately, we can generally do without having recourse to these expedients."

NEW AND CORRECTED CHARTS.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill.

ENGLAND, sheet 2, Orfordness to Flamborough Head, Captain Washington, R.N., 1852	-	-	-	-	3 0
SCOTLAND, East Coast, sheet 5, Commanders Slater and Otter, R.N., 1850	-	-	-	-	2 0
" Orkney Islands, Commanders Thomas and Becher, and Lieutenant Thomas, R.N., 1850	-	-	-	-	2 0
IRELAND, S.W. Coast, including Crookhaven, Commander Wolfe and Lieutenant Church, 1848	-	-	-	-	2 6
" Belfast Bay, corrected to 1853	-	-	-	-	2 6
Baltic Sea, sheets 2, 3, 9, 10, 11, 12, from the Royal Prussian Surveys	-	-	-	-	each 1 6

EDWARD DUNSTERVILLE, Master, R.N.

Hydrographic Office, Admiralty, June 24th, 1853.

TO CORRESPONDENTS.

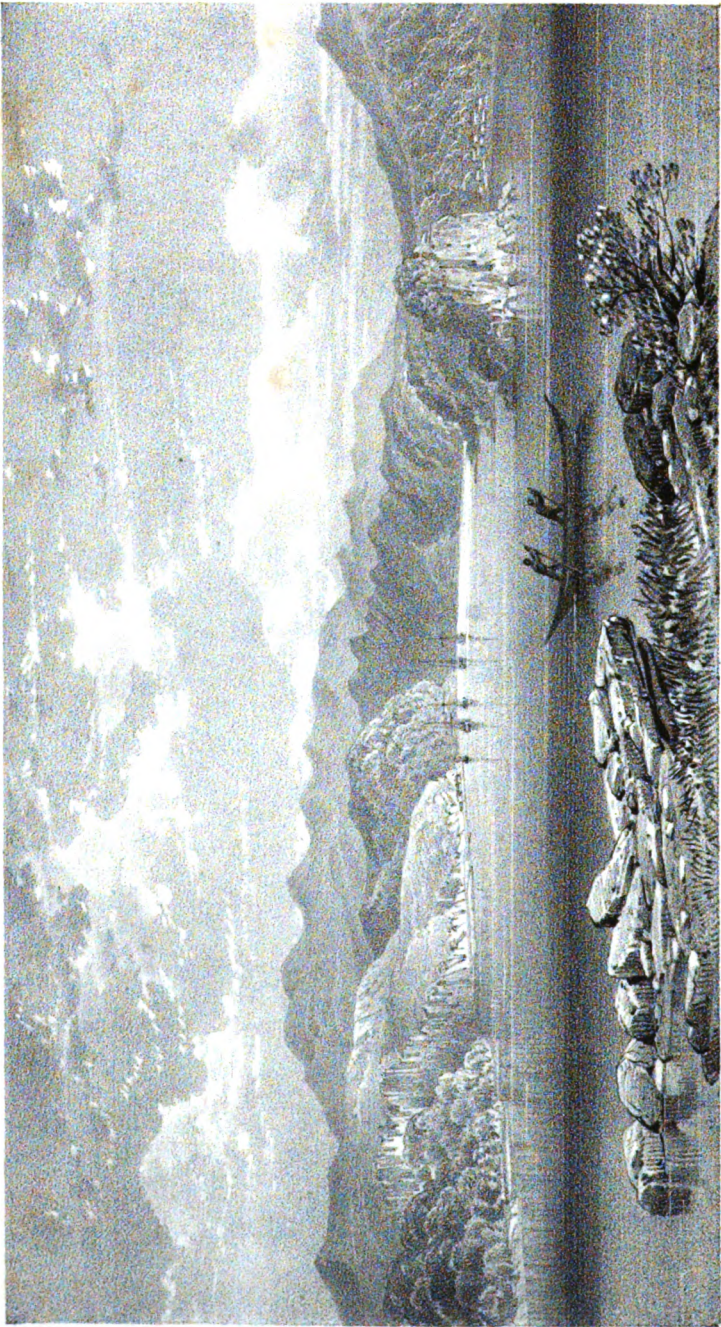
Lieutenant Maury's paper received.

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W. H. Walton, lith.

BAY OF KILLAGHY, MOUNTAINS OF CONNEMARA.

Days Enslaved to The Queen.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

AUGUST, 1853.

OCEAN SOUNDINGS: *The Deepest of the Deep Sea Soundings discussed.*—By M. F. Maury, LL.D., Lieut. U.S.N.

Since the great sounding of 5,700 fathoms was made by Lieut. Walsh, commanding U.S. schooner *Taney*, Nov. 15th, 1849, lat. 31° 59' N., long. 58° 43' W., three other casts have been taken, each with a greater length of line out, but all, I think, more or less doubtful as to the real "up and down" depth of the ocean. One of these casts was of 8,800 fathoms by Lieut. I. P. Parker, of the U.S. frigate *Congress*, 4th April 1852, lat. 35° 35' S., long. 45° 10' W.; another of 7,706 fathoms by Captain Denham, of H.M.S. *Herald*, 30th Oct., 1852, lat. 36° 49' S., long. 37° 06' W.; and the other of 6,600 fathoms, by Lieut. O. H. Berryman, commanding U.S. brig *Dolphin*, 12th February, 1853, lat. 32° 55' N., long. 47° 58' W.

The first two casts, it will be observed, were made within 400 miles of each other and with the same twine, for Commodore McKeever supplied, from the stock on board the *Congress*, 15,000 fathoms to the *Herald*. The plummet used by Captain Denham was a 9lb. lead. It is much to be regretted that he did not use a 32lb shot, for then, his line being the same, his sounding might have been compared with our own with far greater satisfaction.

Captain Denham's last 706 fathoms (from 7,000 to 7,706) went out at the rate of four-fifths of a mile per hour. He had a 9lb sinker. Now, let us ask any sailor who is familiar with the resistance made

by lines when towed through the water, whether, in his opinion, a force of 9lbs could tow eight miles length of line, three-tenths of an inch in circumference, at the rate of four-fifths of a mile the hour. Moreover, his 8th thousand fathoms went out faster than his 5th; surely a 9lb. lead would not drag 7,000 fathoms and upwards through the water faster than it would drag 4,000.

It is probable that there is in all parts of the deep sea one or more under-currents of greater or less velocity.

Suppose where Captain Denham sounded there had been but one, and that that had a rate of only one-tenth of a mile per hour: the line then that his 9lb sinker had to tow through the water instead of being straight was probably a curve, and, possibly, a curve of several convolutions.

Parker, of the *Congress*, gives the time of every 500 fathoms after the first 300 had gone out; Denham, of the *Herald*, gives the time of every 100 fathoms from the beginning; Berryman, of the *Dolphin*, gives the time for every 500 for the first 1,500 fathoms, then for every 200 till he reached 2,500 fathoms, then for 400, then for 1,000, then for 100, and so on at irregular intervals, which impairs the value of his results. Denham's is the best in this respect. To have them all for like intervals, I compute Berryman's to make them correspond with Parker's times and intervals, arranging Denham's accordingly.

Let us now compare the times of the three casts together, that we may see the difference of rate at which the same line ran out, as Parker's and Denham's, to sinkers of different weights, as well as the depths at which a uniformity of rate begins to appear.

Time of Running Out.						
Length of Line in Fathoms.	8,300 fths. 32lb shot Congress		7,706 fths. 9lb Herald		6,600 fths. 46lb Dolphin	
	m	s	m	s	m	s
From 300 to 800 fathoms	8	45	14	20	12	06
" 800 ,, 1,300 "	11	00	18	25	12	51
" 1,300 ,, 1,800 "	18	00	19	30	15	07
" 1,800 ,, 2,300 "	15	00	22	00	20	07
" 2,300 ,, 2,800 "	19	00	23	50	24	11
" 2,800 ,, 3,300 "	37	00	28	20	25	53
" 3,300 ,, 3,800 "	51	00	39	20	28	00
" 3,800 ,, 4,300 "	28	00	43	40	34	00
" 4,300 ,, 4,800 "	33	15	42	25	47	22
" 4,800 ,, 5,300 "	34	45	47	50	52	16
" 5,300 ,, 5,800 "	34	00	53	50	64	50
" 5,800 ,, 6,300 "	34	30	55	05	70	32
" 6,300 ,, 6,800 "	21	30	53	55	72	34
" 6,800 ,, 7,300 "	27	00	52	25		
" 7,300 ,, 7,800 "	38	30	44	14		
" 7,800 ,, 8,300 "	21	00				

I do not recollect the size of the *Dolphin's* twine; it is evident, however, that this as well as other sounding twine requires force to

pull it from the reel and to drag it down through the depths of the ocean; that the deeper the plummet and the greater the length of line to be dragged after it, the greater the resistance and, therefore, the slower the rate at which the line goes out.

Hence we may deduce a rule which, as a general rule, may be taken as correct, viz.: that when the line ceases to go out at something like a regularly decreasing rate there is no reliance to be put upon the sounding after the change, and that when the rate of going out becomes uniform the plummet has probably ceased to drag the line down, and the force which continues to take the sounding line out is due to the wind, currents, heave of the sea, or drift,—one, some, or all.

Let us apply this rule to these casts. That of the *Congress* fulfilled these conditions as to a tolerably regular decreasing rate to the 2,800 fathoms' mark. The rates after that indicate pretty clearly that, whatever might have been the agent which continued to take the line out, it was not the sinking of the 32lb shot. There is an appearance of too much uniformity in the rate after that. Therefore, I infer that when the 2,800 fathoms mark went out the shot was probably on or near the bottom, and that where this sounding was made the ocean, instead of being some 8,300 fathoms deep, is not more than 3,000.

The *Herald's* plummet fulfilled the conditions generally of a decreasing rate until the 4,300 fathoms mark went out; and after this the rate becomes so uniform as to justify the conclusion that the 9lb sinker used had then ceased or nearly ceased to descend, if it were not already on the bottom.

The care with which Captain Denham observed every 100 fathoms' mark, and timed it as it went out, enables us to detect probably more closely in his sounding than in either of the others, the time when his plummet ceased to sink. From 100 to 700 fathoms, each 100 fathoms' mark required between two and three minutes to go out; from 700 to 1,600, each mark required between three and four minutes; from 1,600 to 2,700, each mark required between four and five minutes; from 2,700 to 3,000, each required between five and six minutes. Here the times begin to become irregular, the 3,200 and 3,300 marks each took between six and seven minutes to go out. After this there is no more regularity as to the *increasing* times. Every 100 fathoms' mark thereafter appears to have a rate of its own, varying from seven to twelve minutes, but now fast, now slow, and in such a manner as to justify the inference that the ocean, where the *Herald* reports 7,706 fathoms, is probably not more than 4,000 fathoms deep.

The *Dolphin* had the heaviest plummet and the largest line. The time required with her for each of the first 500 fathoms' marks to run out was longer than the *Congress* but shorter than the *Herald*. But after the 4,300 fathoms' mark of the *Herald* went out, then the *Herald's* line was the swifter. How shall we account for this? If it be supposed that the *Herald* had not reached bottom we are forced into the absurdity of maintaining that a 9lb lead can drag 4,300 fathoms of line, and upwards, down through the water faster than a 46lb lead can. To avoid such an absurdity, I suppose the *Herald's*

plummet to have touched bottom, and that an under current then continued to act upon the line, when it assumed the condition of equal lengths in equal times; whereas the *Dolphin's* continued to decrease its rate and to go down slower and slower till the 6,300 fathoms' mark went out. She sent down 6,600 fathoms; the interval, therefore, from 6,300 to 6,800 is computed. But the inference is, that the weight ceased to go down about the time the 6,300 fathoms' mark went out;—that the ocean here is about 6,000 fathoms deep, *and that this is the greatest depth ever yet reached by the plummet.*

National Observatory, Washington, June 7th, 1853.

Lieut. Maury, of the National Observatory at Washington, has favoured us with the foregoing interesting and useful discussion of deep soundings obtained by H.M.S. *Herald* and the U.S.S. *Congress* and *Dolphin*, the former of which appeared in our number for February last and which we considered then by no means decided. With the intention of bringing the whole subject under one view we have annexed to his observations similar experiments, preserved in this journal, that had been previously made; and, at the same time, to facilitate comparison have reduced them to the same terms as those of Lieut. Maury. The following is a Table of them:—

Length of Line in Fathoms.	No. 1. 3rd Mar. 1840 <i>Erebus</i> , J. C. Ross. 540lb. 33°S. 9°1E.	No. 2. 3rd Mar. 1843. <i>Erebus</i> , J. C. Ross. 340lb. 66°7S. 12°8W	No. 3. 20th Mar. 1843. <i>Samar ng</i> , E. Belcher 12lb. 0°4N. 10°6W.	No. 4. 23th Mar. 1843. <i>Samar ng</i> , E. Belcher 14lb. 4°2 S. 9°6 W.	No. 5. 10th July, 1848. <i>Thunder</i> , E. Barnett 250lb. 28°2N 66°0W	No. 6. 3rd Aug. 1848. <i>Thunder</i> , E. Barnett 260lb. 41°3N 44°3W	No. 7. 3rd Aug. 1848. <i>Thunder</i> , E. Barnett 61lb. 41°8N 44°3W
	Intervals. m s	Intervals. m s	Intervals. m s	Intervals. m s	Intervals. m s	Intervals. m s	Intervals. m s
300 to 800	6 28	6 59	12 49	12 14	6 46	6 0	5 27
800 .. 1300	8 50	9 22	21 6	14 58	4 17	8 40	4 43
1300 .. 1800	9 57	11 3	26 57		11 4	10 8	4 19
1800 .. 2300	11 3	12 13	30 18		11 9	11 6	
2300 .. 2800		16 30	30 56		13 53	11 41	
2800 .. 3300		21 23				12 49	
3300 .. 3800		22 12					
3800 .. 4000		8 59					
	stopped at 2677 fth. in 0h55m41s	broke at 4000 fth. in 1h51m49s	stopped at 3065 fth. in 2h13m22s*	stopped at 1620 fth. in 0h42m29s†	broke at 3250 fth. in 1h11m34s	broke at 3700 fth. in 1h15m27s	broke at 2000 fth. in 0h20m53s
Nautical Magazine, 1840 p. 508 1843 p. 472 1843 p. 796 1843 p. 796 1849 p. 122 1849 p. 122 1849 p. 122							
* Something more for last 65 fathoms, time of which is not given. † Time of last 15 fathoms not included.							

The following additional particulars relate to the foregoing experiments:

Sir James Ross says, in his letter, regarding No. 1, "When the weight struck the bottom it stopped so suddenly that the boats' crews all called out "it is down." We veered away 50 fathoms afterwards and then hauled in

again, but could not get an inch more than the mark at which it first struck. Nothing could be more satisfactory than this sounding."

Of No. 2, Sir J. Ross says, "I had not prepared more than 4,000 fathoms of line for this occasion. The whole ran off the reel without striking the ground. The current was found to be setting to the southward at the rate of 0·3' per hour:—a light N.E. wind."

Of No. 3, Sir Edward Belcher says, "It broke or ceased to descend (suddenly) at 3,065 fathoms; another lead was attached at 2,000 fathoms, of similar weight, which does not appear to have accelerated the last thousand feet."

Of No. 4, Sir Edward Belcher says, "It struck soundings at 1,620 fathoms, but 5 fathoms were hauled in to bring it nearly vertical. No perceptible current, but ship drifted about one mile to the S.W. during the operation, which I attributed to the breeze and being hove to. In this case the weight had an air bag attached, and was not allowed to sink rapidly for the first 50 fathoms. Still it appears to have reached the 1,000 fathoms in less time than the preceding experiment, and 1,000 much earlier."

Of No. 5, Captain Barnett says he employed different kinds of line; and in No. 6, between the Western Islands and Newfoundland Bank, he found "A current, N.W.b.W., two knots an hour, was running. The whole of the line having run out a boat was despatched to the ship for more, but before her return it broke, about 300 fathoms below the surface, after holding the boat with the reel nearly half an hour against a current of two knots."

Of No. 7, Captain Barnett says, "The wire varied in size from Nos. 1 to 5, the total weight being 661 lbs, wound on a small reel in a similar manner, that is, the smallest part of the wire being reeled on first (the suggestion of Lieut. Mooney):—a hand lead would have been better." He also adds, "The great difficulty in these experiments, more particularly with the iron wire, is the increased impetus given to the reel when the weight is let go, whereby the line is thrown off more rapidly than it is carried down, and, if great care be not taken, is broken by the jerk it will receive. To avoid this we have had men pressing on the fore part of the reel with paddings of old canvass, for the protection of their hands, which answers the purpose tolerably well, and, with a little attention, will prevent the too rapid motion of the reel. But a better contrivance is wanting."

"With the iron line the difficulty of regulating the motion is still greater, from the extreme rapidity with which it is carried off, and which, of course, increases instead of diminishes, as in the case of the experiment with the hempen line, although the wire is not so readily thrown off. In this case it broke by the jerk, from our not being prepared with the means of regulating the motion, the wire cutting through everything."

Since ocean sounding is taken up in earnest, it is requisite to look into the subject with the view of removing those doubts with which the results, so new to the nautical world, are received. If they are to be allowed to stand on the charts as good honest soundings, when a depth of ocean amounting to more than seven geographic miles, as that of Captain Denham's, (in our February number,) is asserted, requiring about half a day to measure it, before it can be entitled to implicit confidence the method employed in obtaining it becomes very properly a subject for inquiry. On looking into it, certain obstacles first appear in the way of currents and surface drift, the buoyancy of the line increasing with the depth from the surface, thus offering an increasing resistance to its passage downwards, besides the friction of the water as it passes with the weight at-

tached, finding its way to the bottom. All these are subjects of very natural inquiry. How are they overcome, for overcome they must be before it can be asserted that the vertical depth of the sea has been absolutely measured in spite of them all. And until they are accounted for and their several effects obviated, doubt will always accompany the statement of a deep water sounding.

The method adopted from the first has been already described in this journal as originating with the present Hydrographer to the Admiralty, Admiral Sir Francis Beaufort, and is that of preparing the line from spunyarn and measuring it as prepared with the view of losing it as soon as it has performed its purpose. Thus, a pig of ballast, taking this line down with it, is made to measure the depth. The ballast on reaching the bottom no longer pulls down the line and it stops: the length run out is known, having been previously measured, and both are lost as the price of the depth thus obtained. Thus the obstacles of increasing resistance are overcome and their effect is only apparent by the increasing sluggishness in the descent of the ballast as it increases its distance from the surface. Such was the method employed by Sir James Ross so long ago as 1840, and by other officers since that time. It is very well known to seamen that no line, however carefully or strongly made, has ever been recovered from a deep ocean sounding. We have seen several coils of whale line fruitlessly veered away with a lead of 28lbs, and, on attempting to recover them, as soon as a few fathoms were obtained the line snapped and the rest was lost. Even with the well prepared line presented by the U.S. Commodore McKeever to Captain Denham, and so highly eulogised by this officer, the attempt to recover it after it was down was as unsuccessful as ever; and it is most probably so with the experiments which the U.S. officers are still carrying forward. So that the method of Sir Francis Beaufort is at least the most economical, if not the most efficient one of arriving at the result in this kind of inquiry.

But there remains an important part of the subject yet to be considered. What becomes of the ship during the time of the operation? does she remain steadily and permanently in the same place all the time, immediately over the lead while it is descending? or is she swept away from it by the effect of a current, or drifted by a light breeze of wind? The seaman would at once answer yes, she is, for where is the surface water of the ocean ever stationary; it is always moving, and the ship goes with it although imperceptibly to those on board. Such an answer, however it may be doubted by some, who may think the ocean water at rest sometimes, cannot be entirely rejected, and hence it becomes necessary to take the utmost pains for detecting this drift and ascertaining the amount of it while ocean sounding is going forward; and the longer the time of the operation the more important becomes the correction. Indeed Lieut. Maury has shown *good reason*, in the foregoing paper, for believing submarine currents to be at work, and reduces the depth on their account very considerably.

In the foregoing experiments, Sir James Ross says of the first,

“Nothing could be more satisfactory,” and of the second, there was a drift of 0·3' mile per hour. This also, perhaps, for the interval employed (about two hours) and the great depth attained, may be unimportant. But it is not so with No. 4, Sir Edward Belcher's, where the drift is allowed to amount to “A mile during the operation,” and the depth said to be attained 1,620 fathoms. To arrive at the real depth, the most liberal way seems to be that of dealing with the question as a right angled triangle;—that is to consider the drift of the ship or boat as the base, the length of line out as the hypotenuse, and the required depth as the perpendicular; we should then have a fair result for the depth, perhaps a little in excess, arising from the probable curved direction assumed by the line. We need only have recourse to the common traverse table by considering the length of the line as distance, and the drift (in fathoms) as departure, the diff. lat. gives us the perpendicular, which we may consider as the fair corrected depth attained.

Applying this reasoning to Sir Edward Belcher's No. 4, with 1,000 fathoms as departure and 1,620 (the length of line run out) as distance, we find 1,250 as diff. lat. for the up and down depth, reducing it 370 fathoms. By a similar operation, Captain Barnett's, No. 6, where the drift of 2,500 is given, becomes 2,720 instead of 3,700 had the bottom been reached. These instances, we believe, however, are sufficient to prove the importance of a strict attention to the drift or current while the operation of sounding is going forward. We find no mention of this in Captain Denham's late sounding, nor in those sent us by Lieut. Maury, all of which would have received additional value with such observations. Still, however, they may have been made, and whether they were or not it must be acknowledged that Lieut. Maury has taken a fair exception to Captain Denham's very deep sounding, although it cannot be expected that a line will run off a reel with the precision required of it. Still, the subject is new and improved methods will, no doubt, be hereafter suggested in this and other details of the experiment.

But before taking leave of it for the present, we will express a hope that the foregoing suggestions may be considered worthy of attention and that in all future ocean sounding the utmost care will be taken to obtain, at the same time, a knowledge of the strength of the current, so that a due allowance may be made for it. The depth to which it extends from the surface would also afford an interesting field of inquiry. Experiments made with this view might produce some novel and curious results, especially where the warm water of the Gulf Stream* mingles, towards its termination, with the water of the Atlantic, and where the depth of it is reduced by flowing over the colder water. To find how much below the surface this prevails might be tried in a calm by suspending a weight from a boat at different depths and riding by it; say first 50 fathoms, increasing by 50 every time, or whatever other depth might be agreed on: and were three boats thus anchored, one riding with 50, another with 100, and the third with 150 fathoms,

* Shown by the U.S. officers to be a *superficial* stream.

(or whatever other depths agreed on,) abreast of each other, a difference might be detected in the drift of each of them as well as that of the ship, from which conclusions might be drawn as to the strength of the current at those several depths, and, also, where it ceased; in fact, how low it extended from the surface. The temperature would naturally be a subject for observation, at the same time; but we throw out these suggestions as belonging to an important branch of the subject before us, to be improved on, perhaps, by those who will hereafter carry them into effect, among whom we hope to find at fitting opportunities of calms, the commanders of our own ships. The U.S. officers have taken the lead of us in this matter, as we perceive by their "Notes on the Gulf Stream," and to which interesting subject we shall again refer in an early number.—*Ed. N.M.*

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from page 320.)

[Capt. Cracroft having received an appointment, leaves his journal in our hands, with which we now proceed in continuation of the former extracts.]

Friday and Saturday were occupied in receiving and stowing away provisions and stores for the *Pilot*, and on Monday, September 23rd, after embarking the Lord Bishop of Victoria and suite, we bade adieu to Hong Kong for a season, at 10h. 30m. A.M., and steamed out of the Lymoon Passage in a calm which lasted till nearly six in the evening. At midnight we rounded the Lamocks, but the N.E. monsoon came down upon us. After putting the fires out and attempting in vain to get up to Red Bay, where I would, if possible, have anchored and tried the inshore method, at 10h. P.M. on the 25th the helm was put up and I stood for the south end of Formosa, under close reefed topsails and reefed foresail, with a most wicked sea on; I hardly recollect a more unpleasant one. This part of the China Sea is very imperfectly known, and no wonder, for no one has any business in such an infernal place.

On the 26th we made the Pescadores, and calculated that at noon on the 26th, in only fourteen hours, we had been set upwards of thirty-four miles to the S.S.W.! The high land about the south end of Formosa was in sight before dark, and the wind dying away as we drew inshore we steamed round the Cape, and by daylight had cleared the Bashee Channel.

We now experienced a great and most acceptable change in the weather; a fall of several degrees in the temperature and a purer air than we had breathed for some months, added to which the exhilarating sight of *blue* water, instead of the muddy fluid to which we had been so long accustomed, and last, not least, the magnificent scenery of the east side of Formosa, all contributed to heighten our spirits, and even my passenger, who suffers dreadfully from sea-sickness, appeared sensible of the influence.

Two Islands, called Great and Little Tobago, were passed to-day; they are picturesque, and their features reminded me of some of the West India Islands. No signs of inhabitants were visible.

The promise of fair weather did not continue long, for almost without warning heavy rain squalls rapidly succeeded each other. These showers were most violent after sunset, and for three successive nights I don't think there was a man in the ship who was not wet to the skin. Fortunately, in addition to the good working breeze there was a strong weather current which set us, during the 28th and 29th, no less than sixty-seven miles to the north-west; and on Monday the 30th we were in the open water to the northward, in sight of Killon* which I would gladly have revisited had time permitted.

The Island of Formosa well deserves its name. It is much to be lamented that no harbour or even anchorage is known to exist on this side of it; the coast is every where bold and, apparently, precipitous, and Steep Island, towards the northern end, is a rather remarkable object.

October 1st.—We passed very close to the southward of Hoa-pin-sin Island to-day; it is an uninhabited desolate spot, evidently of volcanic origin; its outline is very much like Gibraltar, the summit bare but the sides, where not too steep, clothed with the most luxurious foliage, chiefly composed of dwarf palm trees. I did not attempt a landing, although it appeared quite practicable. At the distance of a mile and a half we struck soundings in fifty-three fathoms, sand, and there is, doubtless, anchorage close in on the south side; to the north-east, dangerous reefs extend for miles, and heavy breakers were observed from the masthead as far as the eye could reach. By excellent sights we made the longitude of this island $123^{\circ} 26' E.$, agreeing exactly with the position assigned it by Horsburg. At midnight we passed in sight of a small detached rock which appears very accurately laid down on the chart, but, in spite of extra look-outs, we approached much nearer than I intended. The navigation of these seas is anything but pleasant in a dark night.

On the 2nd, we experienced a set of more than twenty-five miles N.E.b.E. At 10h. 30m. P.M. I considered we had run our distance from the Great Loo Choo Island, and, although no soundings were obtained at forty-two fathoms, I brought to, main topsail to the mast, till daylight, when with steam and sail combined against a heavy swell and lee current, we worked up to the anchorage in Napa Roads, and came to, about 5h. P.M., in a very exposed place, abreast of Capstan Head, with the following bearings.—Abbey Point, S.W.b.W.; Capstan Head, E.b.S.; False Head, S.E.b.E.

Our position here was, however, found so disagreeable, owing to the heavy swell that set in between the coral reefs, and, apparently, so unsafe, that the next day I shifted berth to a very snug spot, as far to the northward as the reefs would allow, and moored the ship in

* We avail ourselves of the opportunity of introducing the sketch which should have appeared on our visit there.

very little more than her own draught off the entrance of a small creek, Capstan Head bearing S.b.E.; Abbey Point, S.W.bW.¼W.; Bridge in the Creek, E.b.S.¼S.

October 4th.—The first object that attracted attention after anchoring yesterday was an English red ensign hoisted union down on the Capstan Head, a little headland close to a small building looking like a joss-house. I concluded, therefore, that this was the residence of the Missionary, Dr. Bettelheim,* and that here he was kept in durance vile; it was too late, however, then to ascertain the meaning of the signal.

The next morning I landed with the Bishop at the quay of the little (junk) harbour of Napa-kiang, and we were received by Dr. Bettelheim and his wife who had anxiously watched the boat as she approached the shore. A crowd of people had collected at the landing-place to gratify their curiosity, and nothing could be more civil and even respectful than their demeanour. We were invited by some official personages, clad in yellow robes and queer shaped half parsee looking hats of the same colour, to enter a large building close by, but declined their invitation and proceeded straight to the residence of Dr. Bettelheim, passing through the principal streets of Napa, although I should never have supposed we were passing through a town at all. Each house is detached and surrounded by a blind wall, the only opening being for the door, and that same door rarely facing the street. In most cases this wall was too high to permit the roof even of the house it contained to be seen, and where it occasionally happened that one was visible it was half concealed by most luxuriant foliage.

The inhabitants literally fled at our approach to the vicinity of their dwellings. We could see them at a little distance peering round corners snatching a "fearful glance" at the strangers. The reason of this extraordinary conduct was afterwards explained to us.

On arriving at the house of Dr. Bettelheim, a letter was written to the chief authority in Napa stating the object of my visit and demanding an interview. This settled, I had time to examine the residence of the representative of our Naval Missionary Society.

The building allotted to him had formerly been a monastery or monastic establishment of some kind or other, and was now in very indifferent repair; the situation, however, is excellent, commanding, from its elevation, a pure air and a charming prospect, the only drawback being the quality of the water, which was rather brackish. Guards were stationed round the premises who watched Dr. B's movements most narrowly, accompanied him wherever he went, and prevented effectually any conversion of the natives being made; in fact, his appearance anywhere was the signal for every one to get out of his way; to look at him even was an offence punished by the bamboo!

* Dr. Bettelheim is a converted Jew, a native of Hungary but a naturalized British subject, and was sent out as a Missionary physician by a Committee of Naval officers under the designation of the Loo Choo Missionary Society.

Glad to escape from the confinement of my little cabin, the Bishop took up his quarters with Dr. B. during our stay here.

The next afternoon (Oct. 5th) I went to the joss-house or public building, into which I was invited yesterday, close to the landing place, by appointment to meet the Mandarins. I was accompanied by the Bishop and several of the officers of the ship. The Foo-ching-ta-foo named Ma-liang-tsi, the second person in authority in the island, received us and was assisted by the Mandarin next in authority to him Chin-chang-lié.

The conference opened by my thanking them for the presents (a small bullock, fowls, vegetables, &c.) which they had sent on board yesterday, but I stated that we were perfectly ready and anxious to be allowed to pay for them. To this no entreaties would induce them to consent. I then requested to be informed whether the officers could have horses to ride as the ship would probably make some stay at the island. In reply, I was told there were only two or three horses in the Island and those used by the Mandarins. On inquiring whether we might shoot over the country, I was told the officers could ramble where they pleased without any hindrance. I next inquired where we could purchase articles the production of the country as we were very anxious to procure specimens of the native manufactures, and whether there was any objection to our doing so. They replied certainly not but that the country was poor and produced nothing worth having. Surprise was expressed at this being accorded so readily as a countryman of ours, long resident among them, (Dr. Bettelheim,) was not permitted to make purchases even of his daily food.

During the foregoing conversation tea and pipes had been handed round. Some tables were now brought in loaded with dishes, consisting of savoury soups, biche de mer, sharks-fins, &c., cooked in the Chinese style; and we responded to the invitation to fall to without much pressing: for liquids we had "sackee," a liquor resembling "samshoo," which was poured hot into little China cups: by itself it had nothing to recommend it, but it gave a not unpleasant flavour to the tea. The conversation was presently renewed, but was interrupted by the appearance of some grave-looking personages, whose long white beards and flowing robes had a most interesting appearance. They were bearers of two letters for me, which they presented on both knees, "kowitzing" afterwards, in Chinese fashion, their heads on the ground: in this degrading posture they remained a full half minute, to my intense disgust. It was impossible, however, to avoid a feeling of contempt for what might be only their common mode of showing respect; the whole scene was indescribable, and could scarcely be imagined possible any where off the stage.

I handed the letters to the Bishop for translation at a future period, and returned to the subject of purchasing articles of Loo Choo manufacture; but the Mandarins again assured me that the country was a very poor one, producing nothing that was worth having, that there was no circulating medium, but that every thing was procured among

themselves by barter. This appeared to be so improbable, that we could not avoid expressing doubts of the truth of the statement; but, we added, if these were the real reasons that prevented Dr. Bettelheim from procuring his food, we had other complaints to make on his part. To this the Mandarins rejoined, that if Dr. B. had been saying any thing to their prejudice, the charge was false. Another interruption now occurred by the entry of some attendants carrying large wooden trays containing presents intended for our party, and the Kow-tow was again gone through, the Mandarins prostrating themselves also. I could not endure this, and was on the point of getting up to raise the principal Mandarin from his humiliating and degrading posture, when the Bishop, who had a better knowledge of their manners and customs, begged me to refrain: "Let them knock their heads as long as they like," his Lordship said; and then turning to our linguist, added, "discite illis, genuflexio non nobis satisfacerit, sed protectio Bettelheimi." Our communication was carried on through two interpreters; on our side through Chun-chung, the Bishop's teacher, a Latin as well as a Chinese scholar; and on the part of the Mandarins by a Loo Chooan, apparently a very intelligent man, who spoke Chinese; four languages, English, Latin, Chinese, and Loo Chooan, were therefore put in requisition.

I now thought it was high time to let the Mandarins know that our visit to their island was likely to have more serious consequences than they imagined; and refusing their presents with an air of hauteur which I certainly did not feel (poor devils), I took out of my pocket a list of complaints that Dr. Bettelheim had made of the treatment he had experienced at their hands; and the Bishop having handed over to them a Chinese translation prepared before hand, I told them I should expect to receive a full explanation of this conduct from the chief Mandarin in the island, not from the persons now present, within forty-eight hours, and in the mean time wished them good morning; thus breaking up the conference.

A little account of this visit by Dr. Smith, the Lord Bishop of Victoria alluded to above (published by Hatchard) gives the following picture of these extraordinary people. The following remarks allude to the return from this conference to the residence of Dr. Bettelheim. "The people generally bowed in return to any advance of civility, and some would even utter a few words of hurried reply to the address of Dr. Bettelheim in passing. The higher and more wealthy class evinced less fear; but it was a rare circumstance to hear a person utter more than two words, although they were lavish in their bowings. They would generally remain for two or more minutes when addressed collectively; but when an individual was selected as the person addressed, there were palpable signs of alarm, and he invariably made a hasty retreat. This odd mixture of outward respect and unwillingness to enter into conversation, was the kind of reception universally experienced. But on our arrival at the large public square which formed the market place, and in which probably two or three thousand Lew-

chewans were at that time congregated, and eagerly engaged in traffic, one of the most remarkable scenes took place that I ever witnessed.

“ Here, on a large scale, there was a renewal of what had been previously observable only in detail. On our walking into the Square, there was a general dispersion of buyers and sellers, and we were left alone with benches and stalls loaded with provisions for sale, but abandoned by their owners. On our proceeding to the other side of the square, the same signs of a general flight appeared. A thousand persons, who just before were quietly engaged in buying and selling, retreated in one hurried mass to the opposite quarter; and there, at about fifty yards’ distance, they turned round, like a flock of sheep, vacantly staring at us. A few aged women and cripples alone remained, who were unable to escape, and who received our advances towards conversation in mute astonishment and terror. Not a word escaped their lips. Wherever we moved, there seemed to be the same fixed determination to avoid contact: and yet there was not any mark of anger or disrespect. A few of the literary class and government officers, as they passed along, appeared to be less under the influence of fear, and exhibited less equivocal marks of defiance in the sneer which they assumed as they hurried by. One old Bonze* seemed to be placed in great perplexity in his endeavour to be polite to ourselves and to obey the orders of the government. Dr. Bettelheim addressed a few questions to him, to which he responded with many smiles and low bowings, but yet stammering and confused with embarrassment at the possibility of being observed. Along whole lines of streets leading from the market square, we perceived the shops shut, and the doors barricaded in anticipation of our arrival; and every thing as if by some mysterious power of magic, suddenly wore the appearance of solitude and desolation. A few natives running forward gave the signal to clear the way, and every wayfarer coming towards us turned suddenly down some bye lane, so as to make a circuitous route, and avoid meeting us. A few natives to whom such means of escape were not easily accessible, after apparently making a hasty calculation between the inconvenience of turning back and the danger of being involved in trouble by meeting us, came towards us with hesitating steps. A few words of kindness from Dr. Bettelheim, instead of composing their minds, only increased their alarm; and they pressed their shoulders against the wall in their anxiety to pass us at as great a distance as possible. But not a word of reply could be extorted, and I soon came to the conclusion that it was not the part of kindness to encourage the attempt, and to expose them to the hazard of incurring trouble on our account.”

(To be continued.)

* Buddhism is the popular superstition, and forms, with the maxims of Confucius, the same kind of compound between political ethics and gross superstition as that which exerts its influence over the popular mind in China. The Bonzes, or Buddhist priests, however, do not appear to be held in so great con-

OFFICIAL REPORT *relative to the Loss of the "Victoria" of Hull, off the Wenga Lighthouse.*

The *Victoria*, of Hull, a wooden steam vessel of 441 tons register, and owned by Messrs. Brownlow and Pearson, quitted the Humber on the 6th of November, 1852, on a voyage to St. Petersburg, with a cargo of iron, railway wheels, steel, and woollen yarn, &c., and shaped a course for the Baltic. Her crew consisted of twenty-three persons, and she had on board, besides these persons, six passengers. She was provided with the boats and other requirements under the Steam Navigation Act.

On the passage of the vessel down the Humber, the master observed that the compasses showed half a point too much to the northward; and in running across the North Sea he made this allowance in his course.

The weather was thick and rough, so that no observations could be had; but the land of Jutland was made on the evening of the 8th, nearly as was expected, and at 7 30 P.M., the Scaw Light was rounded at the distance of about six or eight miles, and a course S.S.E. (magnetic) shaped for the Trindelen Light, off the northern extremity of Læso Island.

The weather, as before, was thick with rain, and the wind strong from the N.W., and the rate of the vessel about nine knots an hour.

About 9 30 P.M., a light was seen S.b.E.; and the first mate states that he immediately went upon deck, and saw a light bearing south five or six miles distant, and that he ordered the ship's head to be kept S.E.b.S. (magnetic). In about 10 minutes the engineer reported that something was the matter with the injection, and that he wished to stop the engines, which was accordingly done, as the vessel was considered to be in a very favourable position for the purpose: the light which was seen being at that time supposed to be the Trindelen. The vessel remained drifting about a quarter of an hour, or, as others state, a few minutes only, while the injection-pipe was being rectified, during which time she passed a schooner. When ready, the engines were started, but had scarcely been moved on ahead when rocks were seen close on the lee bow of the vessel, and on reversing the engines to avoid them, the vessel struck with great force on a rock, about six feet above water, and hung there: in this position the sea broke heavily upon the vessel, and it was evident she was in imminent danger. A rush was made by some of the passengers and the firemen to the lee-

tempt as in China, the cause of which lies probably in the fact that in Lew-chewan society is generally composed of a lower class of population than in the more wealthy and civilized country of China.

"It is a common occurrence for respectable families to dedicate a son to the profession of the priesthood, as one which in no way detracts from their social standing, and is otherwise a measure acceptable to their kinsmen, from their hope of inheriting the pecuniary savings of one who being bound to celibacy can have no direct heir."

quarter boat, and preparations made for getting her into the water, in which the master used every endeavour to dissuade them, thinking it probable that, with coolness and due caution, the lives of all on board might be saved; but as soon as his back was turned, four firemen, and three passengers, and a boy, jumped into the boat, and she was almost instantly either carried away by the weight of the men, or torn away by the sea, which is not known, and all but one of the eight perished.

The sea continued to break heavily over the vessel, and soon carried away the funnel, which, in its fall, smashed the starboard waist boat, and brought the port boat in board, being fast to the funnel by the topping-lifts: the vessel now began to sink forward and slipped off the rock, but soon struck upon another; and the master thinking she might slip off again and sink in deep water, ordered the anchor to be let go, and signals of distress to be made.

About 5 o'clock in the morning of the 9th the vessel broke in two, dragging away the lifeboat, which was on the pilot-bridge, and leaving, out of five boats, only a small four-oared boat and a lifeboat badly stove. At daylight the females were put into this small boat, with five seamen, and they fortunately succeeded in reaching the shore; but the sea was too heavy for the boat to return.

The lifeboat that was stove was next patched up with blankets, and eight of the crew (as many as she could carry with safety) went into her, and she also succeeded in reaching the shore.

The master, the engineer, and five seamen, were now left on the wreck, which in about two hours (11 o'clock) broke up. The master was washed overboard, and the engineer and the remaining seamen gained one of the boilers, which had become firmly fixed on the rock.

They succeeded in maintaining their hold in that position for seven hours, although the sea was washing high over them during the whole time; the master, having on a life-preserver, managed to keep himself up until picked up by a Swedish boat.

About seven o'clock in the evening, the wind having moderated, a Swedish boat ventured off, and succeeded in rescuing the men from the boiler in a very exhausted state; and the whole of the survivors were finally taken to Gottenburgh, where they were treated very kindly.

The circumstances attending the loss of this vessel are of such a nature as, in our opinion, to claim the attention of your Lordships, with a view to such measures being taken by Her Majesty's Government as it is hoped may remove and remedy at least one of the causes which led to the destruction of this vessel, and which, it appears from the evidence, has been the occasion of many similar disastrous accidents.

1. We have no hesitation in saying that the loss of this fine vessel was occasioned partly by the Wenga Light being mistaken for the Trindelen Light, for which the *Victoria's* course (as was supposed) had been directed. It is to be observed, that the Scaw Light, the Wenga Light, and the Trindelen Light, are all alike; they are situated in a triangular direction, the greatest distance between them being only 28 miles, and the shortest only 18 miles; so that a vessel having

been without observations (a not uncommon occurrence in that sea), may, as in the present case, be easily and fatally misled by the lights having the same appearance.

It is in evidence that during the year when the *Wenga* was first lighted, there were four vessels totally wrecked upon that coast owing to their having mistaken the *Wenga* Light for the *Trindelen* Light, and that almost every year since some losses have occurred from the same cause. On the present occasion, the master learnt that the schooner, which is stated in the evidence to have been seen just before the *Victoria* struck, was the *Jenny Lind*, then in a sinking state from having run upon the rocks a few minutes only before the *Victoria*, owing to the master having mistaken the *Wenga* Light for the *Scaw* Light.

It is further in evidence that the Consul at Gottenburgh stated to the master of the *Victoria* that he had had complaints from several masters of vessels as to the necessity of there being a distinction made between lights situated so close to each other.

We would therefore submit whether Her Majesty's Government might not reasonably urge upon the Government of Sweden the propriety of causing such a change to be made in the character of the *Wenga* Light as would distinguish it from the *Scaw*, the *Trindelen*, and the *Nidingen* Lights.

2. The next cause which contributed to the loss of the *Victoria* was a disturbance of the compasses by a large quantity of iron which had been stowed on board in the after-hold, and probably also by the iron bars which had been used to strengthen the wheel, and no measures having been taken to ascertain whether any effect was produced by it upon the compass by which the ship was steered.

During the passage of the vessel down the *Humber*, the master states in evidence that he thought the compass was affected about half a point northerly, and he allowed that quantity on his course across the *North Sea*; but no means were taken to ascertain whether this surmise was correct, or what amount of error there might be on any other points of the compass. The coast of *Jutland*, however, was made nearly as was expected, so that while the vessel's head was in an *E.N.E.* direction, there does not appear to have been much local disturbance of the needle, although it is stated by the mate that he found the ship kept getting to the northward by the soundings; but on rounding the *Scaw*, and turning the vessel's head to the *S.S.E.*, it is evident that the compass was materially influenced, as the course made good differed full three points from that steered by the card, and there is no other way of accounting for this large error, than by supposing that the iron affected the compass.

It is stated in the correspondence annexed to the evidence, that the current was unusually strong on that night; but the error in the position of the vessel amounted to full 18 miles in about two hours, and we are not aware of any currents in that part of the *Baltic* especially which could have occasioned more than a very small part of this amount.

We would here again direct the attention of your Lordships to an evil which exists to a very great extent throughout our merchant navy, that of neglecting to determine the deflection of the needle from its natural position by the iron of the ship; an evil of great magnitude, as being spread over a numerous class of vessels, on the safe-conduct of which many lives and a large amount of property are dependent. Scarcely had information of the loss of the *Victoria* reached this office, when it was reported that the *Fairfield*, a fine vessel, which sailed from Liverpool with a fair wind, was, five hours afterwards, lost on the coast of Wales; and, on investigating the circumstances before the Local Marine Board of Liverpool, it appeared that the course steered was a proper one, had the compass not been influenced by some unusual attraction; but it also appeared that part of the cargo consisted of iron, and that there was an usually large new iron tiller that voyage fitted to the rudder-head abaft the compass; and that although the compasses had been examined on shore, no measures appear to have been taken to detect any error there might be from these two very probable sources.

The number of instances in which vessels have been either lost or endangered by the compasses being in error, renders it desirable that more care should be bestowed upon this subject, and owners should afford their masters an opportunity, before pushing their vessels out to sea, of making such observations at least as are necessary for detecting gross errors, and that the masters of vessels should be held responsible to their owners for a due performance of their duty in this respect, as also when at sea, while owners, on their part, should provide masters with the instruments necessary for this purpose. In consequence of the examinations which have been established by the Board of Trade, both masters and mates are now capable of making the necessary observations at sea, and of calculating the azimuth and amplitude and error of the compass; but it is much to be regretted that a large number of vessels are wholly unprovided with an azimuth compass, either for this purpose or for that of taking a common bearing of the land.

Since the last Steam Navigation Act came into operation, the compasses of all steam-vessels have been regularly examined by instrument makers as to their state of repair, and an improvement in this respect is said to have taken place in the condition of the compasses in general; but very few opportunities are afforded to a master, or instrument maker, of determining the deviation of the instrument from the magnetic meridian, *when in its place on board the vessel*, before she sails.

In Liverpool, since some valuable lectures on this subject have been delivered at the Sailors' Home, we are glad to find that owners of ships at that place have become more alive to this subject, and it is to be hoped some permanent good may result from it.

We would here merely suggest, that, for the present, notice of the disastrous effects of this neglect be as widely disseminated as possible.

3. The loss of the *Victoria* may, in the next place, be attributed to
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the neglect of the master in not sounding, more especially when the engines were stopped so close to the light. Had the lead then been hove, the depth would probably have been forty fathoms; whereas had the vessel been in the situation which the master supposed her to be, the depth could not have been more than seven or eight fathoms, and such a discrepancy would instantly have apprised him of his error, and at that time there was ample room to have escaped the danger; but we regret to have to observe, that the practice of sounding in the merchant service is far from being attended to as it ought to be. The loss of the *Victoria* was to a great extent certainly owing to this neglect; and we have it in evidence at the late investigation by Captain Walker, and also by that before the Local Marine Board at Liverpool, that the disastrous wrecks of the *Queen Victoria*, upon Howth, and of the *Fairfield*, upon Lynus, both took place without the lead in either case having been once hove; both these vessels, and the *Victoria* of Hull, ran direct upon the rocks, and there went to pieces.

As wrecks and other accidents at sea have become so numerous of late, and have been noticed in the House of Commons, we feel it our duty to bring prominently before your Lordships the frequent omissions on the part of the masters of vessels to take such precautions for the safe conduct of their vessels as are within their power, and which ought to be considered an essential part of an officer's duty, and without which there can be no dependence upon the safety of a vessel when near the land in thick weather, or at night when the lights are not seen, and to suggest that owners should provide their vessels with the apparatus necessary for the above mentioned purposes, and should require from their masters an account of the manner in which their property has been lost or hazarded, and should withhold employment from such as have been culpable of gross neglect.

From a careful consideration of the evidence which has come before us, we are of opinion that the loss of the *Victoria* was occasioned by the Wenga Light being mistaken for the Trindelen Light, and by the master omitting to sound, and to make the necessary observations for determining what amount of error in his compasses had been produced by the large quantity of iron taken on board his vessel, and we accordingly consider him liable to prosecution under the 77th section of the Mercantile Marine Act; but in consequence of his excellent character up to the time of the loss of his vessel, and of his conduct under the trying circumstances in which he was placed after the vessel struck, added to his great suffering, we recommend that he should not be prosecuted for this offence.

By the above-mentioned 77th section of the Act, the offence with which the master of this vessel would stand charged, could be criminally prosecuted, and if he were found guilty, he might be punished for a misdemeanour; but this proceeding, under the present circumstances, would, in our opinion, be too severe a sentence; and we would call your attention to the want of secondary punishments for offences committed at sea, especially within the limits of the home

trade and Baltic, in which space by far the greater number of accidents, collisions, and wrecks occur, and to suggest, that all masters of vessels, or at least of such as come under the Steam Navigation Act, should possess certificates, revocable by the Board of Trade.

We cannot close this Report without adverting to the loss of life which in this vessel, as in the *Queen Victoria*, the *Amazon*, and on other lamentable occasions, occurred from the imprudence of the passengers and others rushing to the boats.

It should be particularly noticed, that the only lives lost on the present occasion, notwithstanding the vessel went to pieces on a deep rocky lee-shore, were those of the passengers and firemen who rushed to the boat. Many suggestions and inventions for the prevention of accidents arising from this imprudent conduct, and from the hasty lowering of boats, have been received at this office, but they are not of a nature to be legislated upon, and we can only recommend in this place that publicity be given to this additional instance of the fatal effects of disregarding the advice and authority of the officers of the ship on such occasions, and of not uniting with them to preserve order, and to overcome the increased difficulties of getting the boats into the water at such a time, but, on the contrary, obstinately forcing themselves into them, without providing for their being properly lowered, or knowing whether the ropes by which they are suspended will bear the weight of so many persons, and thereby adding to the probability of their own destruction.

We would further notice the propriety of the boats of every passenger-vessel being kept ready for immediate use, and we think this end would be promoted if heavy damages were awarded in cases where loss of life or of property is proved to have arisen from the neglect of these very proper precautions.

We have received at this department notice of remonstrances which have been made by our surveyors against coasting passenger-steamers having their boats *covered with canvas*, and consequently in a wholly unprepared state for immediate service; and we think it our duty in this place, especially after what has been stated to have occurred during the recent collision in the Irish Channel, to bring under your notice the desirability of such practice being discontinued, by a compulsory measure, should the suggestion which has been offered above, with respect to the boats in general being at all times prepared, not have the effect of remedying this evil.

We are, &c.

F. W. BEECHEY.

W. H. WALKER.

[One of the lectures above alluded to as given in Liverpool will be found in our April number, page 308, by Mr. Towson, the Nautical Examiner at that place, a gentleman well able to do justice to so important a subject as Local Attraction, or any other belonging to his station. We are glad to learn that those good effects have resulted from it that were to be expected, and, doubtless, will follow if the system be pursued and the operation of *swinging* be performed after every is on board and secured in its place for sea.—ED.]

CHINESE EXTRACTS.

(Continued from page 260.)

Partly by intimidation and partly by cajolery, the Mandarins induced the pirates to entertain propositions for submission, but as the latter were in a position to dictate terms, negotiations proceeded very slowly. To expedite business two of the chiefs took passage in a lorcha and came to Ningpo; a sufficient number of officers, civil and military, having been first sent on board the fleet as hostages.

Foreseeing the expenses to which these disturbances would subject them, the authorities had appealed to the fears of the owners of property in order to get their assent to a proposition for a general contribution. The Prefect, under the directions of the Governor, issued a proclamation to the citizens reminding them of the circumstance of the pirates having burnt a village on the coast, and stating that the contumacious Canton pirates Pu Hing yu, and others, were still in a state of insubordination.

"It is necessary," says the Prefect, "to hire many vessels and to enlist mariners for the dispersion of the marauders. Now, it is obvious that the pay of the military, including rewards, &c., must require large outlays, and to meet these expenses it behoves us, the officers, to head a subscription list, and also to exhort the gentry, traders, and capitalists of Ningpo, that they should earnestly exert themselves in contributing to provide for vigorous prosecution of hostilities and for the extermination of the horde." The Prefect then states that contributions had been already made at Hangchau, and that, in obedience to the Governors, he had conferred with the leading inhabitants as to the best method of procuring contributions, when it was decided that each tenant should pay a current quarter's rent to the officers, instead of to their respective landlords, in order to meet the exigency of the present case. After making this proposition, he has, in the address, administered a soothing potion to counteract the irritation likely to follow its announcement.

"It is certainly not natural that landlords, who have purchased or erected dwellings to let out for profit, and who may have as many as eight to a family to provide for, should readily take the subject into consideration, but the occurrence of disturbance on the coast involves an enormous expenditure which it is no easy matter to meet. You, gentry, scholars, and men of property, will understand therefore that there is no help for it. Now, if you are not niggardly about this trifle, the accumulation of small sums will soon run up a large amount and provide the needful for carrying on operations, both defensive and offensive. Having thus made preparations you need not feel at all solicitous. You are one and all exhorted to a respectful compliance. Let there be no blinking. A special and most urgent communication."

After numerous conferences with the Mandarins, the delegates agreed upon the following terms:—The leaders each to receive a thou-

sand dollars; thirty dollars were to be paid to each sailor. Besides these sums, the merchants were to pay largely for the ransom of their vessels. On the other hand, the officers resolved to raise an enormous sum for hush money, nearly the whole of which, it is said, is to go to the emperor, as an offering from the penitent pirates, to procure pardon, and honours and office for the leaders, a considerable number of whom have had the promise of buttons. It is generally understood, also, that several subordinate officers on the coast are to be degraded, or deprived of their buttons.

This buttoning and unbuttoning of public men plays a prominent part in Chinese politics. The buttoned and unbuttoned correspond to the "ins and outs" among politicians at home. When negotiations had proceeded thus far, a serious misunderstanding occurred between the contracting parties, the authorities desired the pirates to come to Changhai for the money and be disbanded there, the latter demurred to this, demanding that the communications of the transaction should take place at Shih-poo. At this juncture happily for the Mandarins the English war steamer *Sphinx*, Captain Shadwell, appeared in the river. The pirates were instantly as complacent as could be desired; they hastened off over land, and the next day were under full sail for Changhai. The Ningpo functionaries had repeatedly informed them of their having sent to Hong Kong for steamers which were to annihilate the fleet at a stroke; but till the appearance of the *Sphinx*, they took it for an empty boast. Although the effort which had been made to hire two of the P. & O. Co.'s steamers at Hong Kong failed, the application which had been presented was brought to the notice of the Government, which, with official information communicated about that time on the same subject, induced the Admiral to dispatch a war steamer to deliver the Ningpo authorities from their domestic enemies. Finding that *silver* had rendered shot unnecessary, the *Sphinx* made a short visit. Captain Shadwell went on a cruise, taking the *Contest* in tow. The pirates entered the mouth of the river as the English quitted it. Soon after coming to anchor off Changhai the pirates became so insolent and troublesome, that the Mandarins wished them further. They threw a cable across the mouth of the river, and took tale from the small boats passing, which, however, they discontinued when the price of their allegiance came down from Ningpo.

For a few days the dismantling of their vessels and the removal of cannon to the city went on quietly enough; but after a while they came to the conclusion that something should be reserved for their own use, as several of the best guns. The Mandarins demurred. The former tried intimidation, and were opposed by expostulation, which seemed to make no impression. Mr. Lo, the Prefect, was sent down to aid the Admiral in the new emergency; and not possessing the prudence of that officer, he ventured on board one of the piratical vessels, where he was seized as a prisoner, and so roughly treated, that his deputy thought himself safer afloat, and sprang overboard. Happily he was borne up by his silk gowns and jackets, and floated safely, if not gracefully, reaching the shore as comfortably as could be ex-

pected. The Governor and all the subordinates had been anxious respecting the disposal of this large body of men. Liberal offers were made to Portuguese lorchas to take them to Macao or Hong Kong; but the risk of taking such passengers was so great, that they declined. It was proposed to send them through the country; but they were discovered to be too unruly to be trusted that way, however strongly escorted. Their perplexities became appalling when they heard of the detention of the Prefect. There were no greater objects of pity in Ningpo at the time than its rulers, to whom the panic appeared to be mainly confined. It is difficult to conjecture how the matter would have terminated had not the *Sphinx* made her appearance. Nothing could have been more unexpected, as she was bound for Loo Choo. On steaming into Shihpoo harbour she struck on a rock, from which, however, she was almost instantly knocked into deep water by the vessel she was towing. After reconnoitring the harbour she went down the coast to rescue a small English brig the *Independence*, reported to be blockaded with her convoy, a fleet of junks, in the Wanchau river. She was soon met with coming up the coast, but had no complaints to make; the Chinese had given her 500 dollars per month, she was therefore content with her position. The junk men had a short time before paid the pirates three thousand dollars for passports, and were to pay as much more at Shihpoo; six months' security was guaranteed for this sum.

It was not believed at Shihpoo that foreign vessels would enter that harbour; the appearance of such a large vessel as the *Sphinx*, therefore, occasioned great astonishment, and the effect will doubtless be salutary. The rock on which she struck was not laid down in the chart; it rose up in deep water like a spire, and could only be discovered afterwards by dragging for it between two boats. It was to repair damages that she returned to Ningpo. Captain Shadwell's aid was requested in the dismantling of the fleet at the mouth of the river, which place he did not quit until the whole business was completed.

The Mandarins were not backward in acknowledging their indebtedness to the English for the services rendered. It was very clear, however, that their presence was desired for purposes of intimidation only. Rather than have a battle reported to the emperor, particularly one in which the English afforded assistance, they would have incurred any expence or risked any disaster. It was doubtless their design from the beginning, to effect the dispersion of the fleet according to the mode so generally practised by their best generals and ablest statesmen. They are not so short-sighted as not to know that this method of repressing disorder can produce no permanent good. They are aware that fleets of pirates will soon appear again, composed probably of the same characters, tempted by the former success and impunity. But "*Après moi la flamme*," is a general maxim in the middle kingdom; if that can by any manœuvring be stayed until he is transferred to some other part, a Chinese officer accomplishes all that is required of him.

Rumours of other piratical vessels being on the coast, have already reached the city, and as it is certain that some of the pirates, after receiving their prize money at Chinhai, immediately put to sea, and subsequently many of them, who had entirely submitted and were taken ashore, also escaped, it is not unlikely that another formidable fleet will be organized before those now in office are removed elsewhere.

Just as the dismantling was completed, a fleet of forty war junks, under a Fakein Admiral, hove in sight. Arrangements were soon made for sending to their native province those Canton men who had not escaped. These men (about 500 in number) will soon find their way to Hong Kong, in which colony they are likely to lose what character they have left, and become qualified for new and more daring adventures. The last we have heard in relation to the pirates was in a proclamation from Governor Chang, issued after his sudden midnight departure for the capital last week. His Excellency informs us that Pu Hing Yu and his associates had repented and returned to their allegiance, and that he had memorialized the Emperor soliciting his pardon and favour. Also, that supplies had been furnished to five hundred Canton men, who were to be sent off in the war junks in two detachments, while Pu and a few score of the prominent ones, are to be entertained at Hingpo until the imperial pleasure respecting them is received. "Although I have been at such trouble to save their lives," continues his Excellency, "there are some who, unaffected by favours, refused to be placed under lawful restraint, and who bolted as soon as they had received my bounty. Others, again, who went on board the ships of war, subsequently escaped. Persons so unmindful of favours are truly detestable! I issue this proclamation, therefore, that you, leading men, who have repented and returned to allegiance, are worthy people, and it behoves you to submit to the control of the civil and military authorities. Should any of those who have been ordered to Canton be found at Ningpo, Chinhai, or at any of the ports of Chihkiang, they shall be tried and punished according to their former crime of piracy. No favours shall be shown," &c.

While negotiations were yet pending between the authorities and the pirates, there occurred a Buddhist riot, a salt riot, and papal riots, which shall be chronicled in the reverse order of their importance. Of the various Buddhist monasteries in Ningpo the best endowed is that situated near the South Gate, known as the "Observing Hall;" there are connected with it numerous spacious buildings and a large quantity of land, and vegetating within its precincts is a crowd of monks, numbering sometimes several hundred. Apart from the income derived from their landed property, these fathers are continually receiving money for performing various ceremonies in their temples, and also in the dwellings of the people. By far the most profitable exhibition which they ever get up, is the "*Penance* festival," which always attracts an immense gathering of war skippers to the shrine of Budha. The idea of chastising the body for the sins of the soul, has, if that be any recommendation in a practical age like the present,

come down to us from very high antiquity, sanctioned in the first place by the hierarchy Shaza, and subsequently by that of Rome, whose united sway controls the greatest part of the human race. Amongst the former, however, the merit of asceticism in general has been turned to a pecuniary account, which has brought it into great discredit in China. Mandarins here are willing that fasting should be carried to any extent amongst the Buddhist priesthood; but the injunctions against penance exhibitions are, verbally, very stringent; a small gratuity, however, to subordinates, will cause them to be winked at, and hence they are not unfrequent. The severest form of self-torture practised on such occasions, is the burning a finger to the first or second joint. (In the northern provinces they will sometimes part with a hand in like manner.) A lighter form consists in burning spots on the head with a *maxa*, the least painful of these operations consisting in pulling out hair by the roots.

Whenever such exhibitions take place the temple becomes the resort of great numbers, generally females, who spend so much money that the priests reap a rich harvest. And there is another source of profit when a young woman becomes a nun, the ceremony connected with what is called in the West "taking the veil" is turned to a pecuniary account. It consists in the tonsure, depriving her of her hair, which in China particularly is considered the glory of woman.

Some of the above named ceremonies were lately advertised to take place at the Observing Hall Monastery, from which the priests, after deducting various expenses, including bribes to persons disaffected with them and to policemen, calculated on an unusual benefit. Of the former class was a literary graduate of the degree of *Keu-jin*, or M.A., named Wang, (this name signifies King, it is the Smith of China,) a man of great influence, who is feared rather than respected by his townsmen. Having often extorted money from the monks, under threat of bringing them before the Mandarins, and being much in want of funds, he made some exorbitant demands in view of the approaching festival which the brotherhood firmly resisted. On the day of the ceremony, Mr. Wang hired nearly a hundred labourers whom he led on an onslaught upon the monastery, with the determination either to squeeze a large amount out of the fraternity or to drag them before the Magistrates, together with every evidence of their guilt he could lay his hands on. The monks, however, showed fight, and, having the advantage of numbers on their side, put the aggressors to flight, and of the wounded none suffered so severely as the Master of Arts.

At the beginning of the fight the poor women who filled the temple hobbled with all the celerity they could to their boats in the canal hard by, and found that a detachment of Mr. Wang's men had taken possession; but the victorious priests soon restored them.

On the following day the discomfited party brought their case before the district Magistrate; and, though they failed in their scramble for spoil, their revengeful feelings were gratified by seeing a thousand dollars wrung from the Abbot and the canque put round the necks of

several of the priests. The district Magistrate, also, issued a proclamation which was posted at the hall door of the principal monastery. His worship says that the "Master of Arts Wang Teheking has preferred charges against priest Paragon, and others, of the Observing Monastery, representing that they have been carrying a penance transaction, making money by it, and that they associate with loafers and scamps, and, moreover, that as he was making inquiries among the fragrant guests (*i.e.* the lady worshippers) respecting the affair, the whole brotherhood pitched into him and his friends, sorely wounding them, particularly Mr. Wang's brother, who came to his relief. Now, after examining their bruises, I have had the ring-leaders of the row,—to wit, Radically Intelligent, Unsullied Virtue, and the Deputy Happy Mountain all placed in the canque; and when the period of their exposure in front of the magistracy is over they shall be deposed and sent back to the world, each one to his native village. And, moreover, Condensed Purity and the other fathers who bolted shall, when apprehended, be punished in like manner. I find that the priests of this monastery are very numerous; and, lest the good and the bad be confounded, I shall carefully inquire who of you keep the law of Budha; such may remain, all others are to be dispersed. This order is issued for your information. Consider now: you have all quitted your families and the world for the priesthood, and should, therefore, assiduously observe the rules of Budha and, early and late, cultivate virtue. Why should you break the laws? Henceforth, if you should again, confiding in your power, and at your own pleasure, pummel the people of the world, break the laws of your sect, or act disobediently in any way, you shall be brought before me, have punishments meted out according to your demerits, and be sent back to the world, all of you, and no mistake. There shall be no favour shown. Let each render trembling obedience. A special proclamation."

In the above we have translated proper names, as they are all significant, having been assumed on entering the priesthood.

Paragon, the Abbot, having parted with his money freely, not only escaped the canque, but had the influence to keep his name from being introduced in this homily, which after all was a very mild one considering the lectures the Magistrates often address to the priesthood when no particular provocation has called for them. It is not uncommon to see, posted up in the temples, proclamations, issued by the authorities, admonishing priests against the commission of every vice in general, and particularly against those which public opinion here, as in the West, supposes to prevail where celibates are found herding together.

As the officers had failed in severity, owing, it is said, to bribes, a large body of the literati joined with Mr. Wang, and issued the following, which was posted up in every corner of the city.

"This placard is to inform the public that the Observing Monastery, in the south part of the city, has been deteriorating ever since Paragon became its Abbot; and his protégé Condensed Purity, now in office with Happy Mountain, Intelligent Post, Auspicious Peak,

and others form a cabal which transcends in iniquity. They are full of money getting schemes, entertain vile characters, guzzle liquors, keep prostitutes, and, in fine, there is no vice to which they are not addicted. There is no saying what dark deeds are done there, for they constantly allure nuns and disreputable women into the temples. Hereafter let the literati and tradesmen of the city and neighbourhood, when they have affairs of either a joyful or a mournful character requiring the aid of priests, by all means avoid patronizing that monastery. Moreover, never call these priests to your dwellings to perform rites, as it cannot be insulting to the divine Shin Sing. If any of you countenance the establishment as formerly, your relations and friends cannot come to offer congratulations or condolence, nor can they make any presents. Let reputable persons study all respect. A particular notice."

A short time before this a priest came to the city to complain of a clan at Fieug-hwa, the leading members of which had burnt his temple and seized the ground pertaining to it. Their ancestors had presented land for religious uses more than a hundred years ago, and a temple well stocked with idols was erected in the centre. It was some time in litigation, and judgment was recently given in favour of the priests. The clan proved stronger than law and priests united, leaving to the latter no other resource than indignant complaint, which was put into verse and placarded in the streets. The priests say they lost their temple because they were out-bid in the courts, and would be thankful for money to enable them to carry their case to the provincial capital.

"Our hatred against this sin," say the monks, "is as deep as the ocean, and we have expressed it in the subjoined indignant verses." Then comes a storm of bitter invective, rounded off with the expression:—"For those who help us in this matter we should be willing to curtail our longevity or even die at once. If there be a false sentence in this indignant notice may the thunder of heaven strike us dead!"

The place of greatest resort for pilgrims in this part of the province is a temple beautifully situated amidst Alpine scenery at Sing Fang, (Spiritual Peak,) a few miles distant from Ningpo. Thither the devotees of Budha repair in crowds, and from remote places, on the birthday of a deified physician, to engage in religious service in honour of this tutelary God. As it occurs in the vernal season, when labour is much in demand, the poor form but a small portion of the concourse of pilgrims; and to induce those who can afford to spare the time, it has been found necessary to hold out a special inducement, and hence bills are sold for a trifle, which are redeemable in purgatory, entitling the possessor to one thousand dollars in specie. Considerable sums are expended in such documents, and also in candles, incense sticks, rosaries, &c., but which for some years past have afforded little aid in the support of the priests.

Sing Fang is the seat of an annual riot. A band of lawless characters from distant mountains join the throng of pilgrims, and when

these have been relieved of their money they make a rush for it and generally get possession of the whole amount; but never without a set fight as the priests always resist. Ordinarily this is a harmless affair; it is kept up for a while with the palms of their hands until the parties come to close quarters; the custom then is to lay hold of each others tails, which they pull and wrench; their heads meanwhile in close contact, and bodies bent forward, causing the united pair to present the appearance of an irregular arch. In this posture they remain until passion subsides, and they become cool enough to separate. How much more rational this than a pugilistic encounter! But when priests meet laymen then comes a tug somewhat varied; the former being destitute of the candal appendage have their ears put upon the stretch, which affords the latter a double advantage in the encounter. On one occasion lately the padres determined to repel the robbers, and hired, for that purpose, a number of men who were armed with bamboo poles, the Chinaman's shillelah, but they were beaten with the same weapons. Victory, however, turned in favour of the assailed party; who, as they were scampering pell mell down the hill from their temple, pursued by their enemies, met a couple of missionaries, and thereupon took courage, giving out that a party of English officers were on their way to capture the mountaineer gang. When the latter heard that they were panic stricken, retraced their steps up the hill, and made all possible speed down the other side.

The brotherhood took a hint from this lucky circumstance, and the following year hired some Portuguese sailors to attend at the temple to protect them and their gains with fire arms; but the subsidies required so large a share of the latter that it proved a poor speculation.

These disturbances being temporary and confined to a district thinly inhabited, give the authorities no concern, and such is their contempt for Buddhist priests that they would apply in vain for any redress.

It is worthy of remark that although the literati generally profess to despise the superstitions of this sect, they are so conscious of the defects of Confucianism that they gladly turn to it as a refuge when overtaken by calamity or in the prospect of death. Atheistic philosophy affords no support when most needed, and hence a system of religion which contributes in any way to shed a light on the dreaded future is embraced with avidity. With all its grossness, Buddhism proves more worthy of their confidence than materialism, and, consequently, it has a deep seated hold in the feelings of the most enlightened minds of the empire. But not only is Buddhism of more avail on a death-bed, it is superior also to materialism in the concerns of life. It presents solemn motives to virtuous conduct. The latter does not; it is a selfish system, concentrating everything on the present. One example will suffice. Lying is a vice which a Confucianist may be detected in without occasioning shame, and which gives him no compunction; but a devotee of Budha considers it a disgrace and a sin for which he is accountable. Until, then, a purer faith is disseminated amongst the Chinese the despised system will be found alike indispensable to the peasant and the scholar.

(To be continued.)

VOYAGE OF H.M.S. "CALYPSO," CAPTAIN WORTH, TO THE PACIFIC.

(Continued from p. 367)

At 5h. p.m. on the 12th July, Ouo was seen S.S.E. $\frac{1}{2}$ E., and at 8h. a.m. the following morning, I sent a boat on shore, the ship standing off and on close in with the reefs until her return. Ouo is a small but very productive island; the inhabitants being extremely well behaved and industrious, and having a great horror of cannibalism. Stock is very abundant and easily procured by bartering articles of dress; indeed the natives will receive anything in exchange for their commodities. No anchorage is attainable at Ouo, which is low, and is formed by a cluster of six islands, enclosed within one reef, which forms a sort of lagoon, and contains about 400 inhabitants, all of whom are Christian, and of whom the Missionary speaks in the highest terms. On the western side, at the distance of about eight miles, there is a shoal.

At 6 30 p.m. sail was made for Tongataboo, (Friendly Islands,) the wind at S.S.E., and sea gradually increasing as the night advanced; and the next morning blew very strong, with occasional rain. We reached the eastern end of Tongataboo at noon on the 15th; but the wind now blowing a strong gale, and the entrance at the Astrolabe Canal (or passage up to Nukualofo) being directly to leeward, surrounded by reefs, on which the sea was breaking furiously, and being moreover unfurnished with any chart, plan, or guide, respecting it, save that contained in the general chart of the Pacific, I considered it imprudent to hazard running into it, and hauled off, beating up under the lee of the island of Eoou, situated about ten miles S.S.E. of Tonga. I continued to stand off and on close under the lee of it, the shore being quite bold and clear, until it grew more moderate, i. e. for a day and a half, and sent a boat on shore, which returned with two native pilots for the passage to the anchorage at Tonga; we then bore up for the entrance of the Astrolabe Canal, which we reached at 10h. 30m. a.m., passing midway between the east end of Tonga and the island Eouajec, the wind still blowing strong from the N.E., with squalls and a high sea, which was breaking with great force upon all the reefs. On entering the Channel sail was shortened and the yards braced by, in order to lessen the ship's way, the wind being right aft, and the channel very narrow, varying from half a mile to a mile in breadth, gradually narrowing until the small island of Mohaga is reached, and nearly nine miles in length, and lays between two coral reefs, which distinctly show themselves. From there being no anchorage within it, and the tides at times very strong, great caution should be used in entering it; indeed it should never be attempted but with a commanding breeze, which almost always blows directly in and through it. At nearly the end of the canal, and where the island of Mohaga appears to close it, the passage takes a sharp turn to the northward, requiring the ship to be braced sharp up, lying N.N.W.,

in order to weather the port or western reef, in doing which care must be taken to avoid running on a shoal lying close off the starboard or eastern reef, as it is necessary to pass very close to it, and which can be done without risk, it having deep water close alongside of it. Wilkes states in his work that "he ran upon this coral patch in the *Vincennes*, and that she came off without damage, the shoal breaking away under the ship's bottom, and that after anchoring at Nukualofa the spot was examined but that no shoal existed where she had struck, and that he had the satisfaction of knowing that it had been destroyed without injury to the ship;" this, however, must be an error, for being myself on the bowsprit when sailing through this narrow part of the channel, I observed a shoal close under the starboard bow, and had scarcely time to order the helm to be put a starboard to prevent the ship running right upon it, and which she barely cleared. Conceiving this to be the same shoal spoken of by Captain Wilkes, I sent the Master, the day after we anchored at Nukualofa, to examine it, when he found it barely covered with the water. I cannot of course positively assert that this is the shoal Captain Wilkes alludes to, but from his description of its position I cannot fancy it can be any other, particularly as he names but one shoal as existing in the channel at the time he sailed through it, and states that with that exception the whole channel was perfectly clear, and which statement is quite correct. On passing this narrow part of the channel we bore away for the anchorage off the town of Nukualofa, and anchored, at noon, in 14 fathoms water, Monuaffa island bearing N.E.b.E.½E., and Fafou island N.E.b.N. The shore about a quarter of a mile distant. This anchorage is very good, and is well sheltered by the surrounding reefs.

On the 21st July, at 9 A.M., having procured a native pilot, I sailed for Lefuke (Haapai group) through the northern passage, having a light southerly wind, and smooth water, and with the tide (which I understood always set to the westward both ebb and flood) in our favour. The ship as usual was being coned from the mast-head and bowsprit; she, however, struck upon a coral patch, the existence of which the pilot was ignorant of, but passed over it without damage, as was afterwards ascertained, with the exception of a little copper rubbed off the keel. At the time of passing over the shoal soundings in 5 fathoms were had in the starboard chains, and 7 fathoms in the port chains, the island of Atala bearing S.W.b.W. three and a half miles, and distant from the reef three and a half miles. This passage, as well as the West passage, has several patches and reefs, and great caution should be used in sailing through either. Having passed clear of the passage, we stood to the northward, and passed to the eastward of the small islands Honga Tonga and Honga Haapai, and then stood N.W. until 5 o'clock the next morning, to give a clear berth to Calebra Bank, which is shown in the Admiralty chart, but which the natives say does not exist; and having reached its parallel, we hauled up, N.E., and afterwards E.N.E., as the wind permitted, and shortly after sighted the islands of Hao and Tafoua, N.E.b.E.: the first of these islands is a volcano, and is at times in an active state, and both

islands are high and bold; the latter in form is a complete cone, and apparently 5 or 6,000 feet high. At 8 o'clock several of the islands of the Haapai group were seen to the eastward, and at noon I stood close in under the N.W. island called Mongane, with a view of anchoring for the night, but not liking the appearance of the weather, and the water being deep, and probably a foul bottom, I shortened sail and stood to the eastward, keeping well clear of a shoal about 30 miles N.E. of the north-eastern island of the group (called Huauo), and on which I was informed H.M.S. *North Star* had struck. At 7h. A.M. (23rd) we stood in for the island of Lefouga, running along to the westward of the islands of Huauo and Foa; and at 9h. A.M. anchored in 17 fathoms, the west end of Huauo N.½E., and the north end of Lefuga E.½S., the latter distant two and a half miles, and from the nearest reef half a mile. Although we did not observe any shoals whilst running for the anchorage, I was afterwards informed that many existed, and great caution should be used in sailing in and out of this part of the group. The anchorage off Lefuga, where resides King George, king of the whole group comprising the Friendly Islands, is in lat. 19° 46' S., and long. 174° 14' W., and is by no means a good anchorage, being much exposed to the bad weather and high sea from the westward, the outstanding reefs affording but little or no shelter from the violent gales from that quarter which frequently occur particularly in February and March.

At 4h. P.M., the next day, I tripped and stood to the northward, intending to visit Vavou, with a light easterly wind and fine weather; at 4 30 P.M. the ship passed over a shoal, having only 4 fathoms upon it; the small island nearest to the westward at this time bore N.W.b.W. three miles, and the western end of Huaua Island N.½E. four or five miles. At 5 30 we passed over another shoal having 6 fathoms upon it, Huaua Island bearing N.b.E. two miles. At 6h. P.M. we were clear and to the northward of the islands, and stood N.b.E., with the wind at E.N.E., and with moderate and fine weather. At 8h. A.M., the next day, the high island of Laite was seen, west, about 50 miles and at 3 50 P.M., being about four miles off the entrance to Vavou Harbour, and receiving a pilot, it was too late to reach the anchorage before night, we therefore stood off until daylight the next morning, and then made sail for the harbour. Captain Bethune's survey of this harbour proving extremely correct, there appears to me nothing left to be added to it, and shall only observe that it is a most perfect harbour, and the scenery about it romantic and beautiful; there are, however, two great drawbacks to it as a place of frequent resort, namely, the great depth of water from its entrance (which is at least seven miles) to the anchorage, and the difficulty of procuring fresh water, which can only be obtained in small quantities, and is of very bad quality. We anchored at 11 30 A.M. in 27 fathoms sand and mud, Observation Point N.E.b.E.½E. half a mile. The usual description of stock is to be had here, and for the usual traffic. On the day after the ship's arrival I caused her to be careened, in order to ascertain if she had received any damage by grounding at the Fejee Islands and Tongataboo,

and found it only extended to two small pieces of copper being rubbed off the keel.

The Friendly Islands.

The Friendly Islands, consisting of Tongataboo and the numerous small islands adjacent, the Hapai group, and Vavou, with its neighbouring picturesque and beautiful islets, have been so much more frequented, and are so much better known than either the Samoan or Fejee groups, it is scarcely necessary I should say more than that the character of these islands, as well as their climate and produce, is much the same as that of the Navigators; the appearance, disposition, and habits of its natives being also very similar.

The people of this group, generally speaking, are of indolent habits; nor are they particularised for anything bespeaking more than ordinary intellect or ingenuity, with the exception of the construction of their large double canoes, which are sometimes upwards of one hundred feet in length, and capable of containing one hundred and fifty persons, and in which they undertake long and distant voyages; for these they have long and justly been famous; as, also, for the neat, indeed very beautiful manner in which their houses and fences are built.

The people of all these islands carry with them a high and independent air, and evidently have a most exalted opinion of themselves and country.

All the islands are under the rule of King George, but who, until the death of the late king, only ruled over Vavou and Hapai; he resides at Lefuga, Hapai, and visits only at intervals at Tonga.

Tonga being entirely level (no part of it being more than sixty feet above the level of the sea) and composed of the richest soil, is capable of most extensive cultivation; nor need there be a barren or unproductive spot upon it: but such is the indolence of the people, that they allow nature to do every thing for them, without assisting her in the smallest degree.

The anchorage off the town (Nukualofa) when reached is excellent, having a moderate depth of water, good ground, and well sheltered by the surrounding reefs; the passage to it, however, called the Astrolabe Canal, is long (nine miles) and narrow, and lies between two reefs, distant from each other from half to one mile, through which, at times, a strong and uncertain current sets; and, as there is no anchorage within it, it should never be attempted without a commanding breeze. In sailing for the anchorage, the N.W. passage is always taken, which requires care and a good pilot, as it has several reefs and patches which cannot always be seen. The pilot I engaged was considered the best in the place; he, however, put us on one of the patches, near the outer entrance; but fortunately the sea was smooth, and the ship not going more than two and a half knots, we passed over it without damage, the ship's way having at no time been entirely stopped. It was fortunate we did so, as had she hung, it might have attended with serious consequences, as the tide, which rises and falls four and five feet, was at its height, and just turning.

The anchorage at Lefuga (Hapais) is not so good, being exposed to north and westerly winds, the bay by which it is approached having also several shoals in it, and should be sailed through with caution, and with a good look out kept at the mast-head, fore-yard, &c.; indeed, the navigation of all this group requires a more than ordinary attention.

Vavou is a most beautiful land-locked harbour, surrounded by high land, richly wooded to the beach. An inconvenience, however, attends this otherwise most perfect haven, that of having such deep water till nearly at its highest point (a distance of six or eight miles) as prevents anchoring; the water being, however, perfectly smooth, and little or no current, there is no danger of a ship meeting with harm, if becalmed, as the boats would always enable her to keep off the shore.

The principal inconvenience attending this group, is the almost total want of water; scarcely any is to be obtained at any of the islands, at times none whatever; and never a sufficient quantity for a ship of any size to complete; stock, however, of all kinds, is to be obtained at any of them in great plenty.

Tongataboo contains, at this time, about ten thousand people; of which, I was informed by the Missionaries, six thousand are Christian and four thousand heathen.

Hapais contains about five thousand, all of whom are Christian.

Vavou also contains about five thousand, and all likewise Christian.

There are residing in the group eleven Missionaries and about twenty other foreigners, principally English and American.

But little traffic is carried on by any of the islands, and only few vessels touch at them for that purpose. American whalers, calling to refit and obtain refreshments, are their principal visitors.

On the 29th at 9h. A.M., I sailed with a moderate breeze from N.E. on my return to the Navigator's Islands, passing Cocomanut Island, bearing S.E.½E., which is small and very low. In the evening the wind at N.N.E. became strong, with a high sea, but which moderated the next day, and shifted to N.b.W., and in the afternoon became light and continued so until the afternoon of the 1st of August, when it gradually freshened from the southward and eastward, and at daylight the next morning the island of Tutuila (Navigators) was seen; and at 9 30 the ship was hove too off Pango Pango, and I went into the harbour in one of the cutters, (the ship standing off and on its entrance,) passing over the shoal that lays about one and a half or two miles outside its entrance, and which is shown in Captains Bethune and Wilkes' plans of the harbour, and returned to the ship at 5 30 P.M., the weather having during my absence become very unsettled, blowing strong and right into the harbour, with hard squalls and rain, and a considerable sea, which made my pull back to the ship long and laborious.

Pango Pango has been well described by Captain Wilkes (American Ex. Ex.) as a most beautiful and perfect harbour, being entirely land-

locked, and is indeed the only harbour in the Navigators group; but, as he remarks, there is one great and serious objection to it, and which is, that although extremely easy of access, there is often both difficulty and danger attending getting out of it, in consequence of the S.E. trade wind blowing directly into it, and with the usually great swell that is met when reaching the entrance, which does not exceed one third of a mile in breadth, making beating out hazardous, and a ship would require to be well manœuvred to escape accident, for to miss stays would almost to a certainty cause shipwreck. The harbour is quite clear, with the exception of a rock which lies just within its entrance, about a third of a mile, and having ten feet water, but is quite bold, and in nearly midchannel, and usually shows itself by the sea breaking, or rippling, upon it, according to the state of the weather; the flats, or reefs, attached to either side, distinctly show themselves. As a refitting harbour Pango Pango certainly embraces great advantages, but for general purposes the whale ships, as well as those that trade amongst the Navigators group, prefer Apia Bay, though so much more exposed, rather than risk the dangers attending sailing out of it. Captain Bethune's survey of Pango Pango appeared to me very correct, as also that of Captain Wilkes.

On reaching the ship, we made sail to pass between Tutuila and the eastern end of Upolu, the night proving squally, dark, and rainy, with wind E.N.E. blowing strong; and at 11h. A.M. (3d August) anchored in Apia Bay.

On the 14th August, at noon, I left Apia on my return to Valparaiso; on the next day the wind from S.E. blew strong, with hard rain and squalls, and a considerable sea, which continued for several days, occasionally shifting more to the eastward, which prevented us weathering the Friendly Islands group; I passed, therefore, to the westward of them, sighting Amargura Island bearing east sixteen miles; this island (the northern of the Friendly group) is placed wrong; Arrowsmith's chart makes it to be in lat. $17^{\circ} 51' S.$, and long. $175^{\circ} 0' W.$, whereas we made it to be in lat. $18^{\circ} 2' S.$, and long. $174^{\circ} 16' W.$, and also sighting the islands of Laita bearing S. $\frac{1}{2}$ E., Annamoka N.E.b.E., Honga Tonga S.E.; and on the 17th passing the N.W. end of Tongataboo bearing N.E. $\frac{1}{2}$ N. ten miles, the same strong wind and high sea continued, but were from the northward, until the 22nd, when it drew more to the S.E. and southward until the 28th, when it shifted to N.N.E., and continued so until the 3d September, the weather growing cold and wet. From the 4th to the 11th, it drew to the N.W., with occasional checks from the northward and eastward, the weather still cold, stormy, and rainy, accompanied by a high sea. We experienced but little current during the passage to Valparaiso, which we reached on the 27th September, after a very boisterous and disagreeable time, and having been driven by the prevalence of easterly winds so far south as $42^{\circ} 16'$, which we reached on the 3d September, being then in long. $148^{\circ} 37' W.$, the thermometer showing 49° and 50° , and the bar. 29.60 and 29.70.

A list of shoals, &c. said to exist in the neighbourhood of the Na-
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vigators Islands, but of which no authentic account could be obtained.

A small island reported by the whale ship *Ranger* of London. Lat. $11^{\circ} 35' S.$, long. $166^{\circ} 45' W.$

A shoal off Tutuilla bearing south of the south point, said to be about sixteen miles off shore.

A shoal off Savai, about forty miles west of the western point of the island.

A shoal off Moata in Upolu, about seven miles north, said to be about three fathoms.

A shoal off Utumau in Upolu, about six or seven miles due north, said to be about three miles.

Being under orders to proceed to the coast of Mexico from Valparaiso, calling at Callao on my way, I left the former port on the 29th October, 1848, and made the passage to Callao in eight days, having met with the usual southerly winds and fine weather, and on the afternoon of the 8th November I left Callao, shaping a course to pass the Equator in long. $95^{\circ} W.$, and which was crossed in $96^{\circ} 30'$ on the 17th, carrying the S.E. trade up to the lat. of $8^{\circ} N.$, when it drew round to east and N.E., until the 24th, when the lat. of $12^{\circ} N.$, and long. $102^{\circ} W.$ was reached, it then became calm, with light winds from the northward and eastward, and afterwards shifted gradually round to N.W. and increased in strength. The current, after passing the line, was setting to the northward and westward, but not averaging more than from eight to ten miles daily.

On the evening of the 1st December the land was seen to the southward of Cape Corrientes; the wind being at N.W. and west, permitted the ship to lie along the land until the 3rd, when after some hours of calm and a south-easterly breeze it again set in strong from N.W. to N.N.E., and a long and tiresome beat to San Blas was the consequence, and which we reached on the afternoon of the 5th. The current, whilst working up the coast, was found to set southerly but not strong.

We left San Blas on the 24th December for Mazatlan, where we arrived on the 29th, after a tedious and unusually long passage, the land and sea breezes proving uncertain, with the current setting strong to the southward, and the wind being unusually light and variable from N.W. This passage generally occupies three days.

Remarks upon the Passages made between different Ports in Mexico, from thence continued to Valparaiso, Rio Janeiro, and England.

On the 2nd January, 1849, I sailed from Mazatlan for the anchorage off Altata, (the port of Culiacan,) the wind being very light from S.E. to N.E. we did not reach it until the evening of the 5th, when the ship was anchored about seven miles from the beach in 14 fathoms muddy bottom; the mountains behind Culiacan bearing north; the N.W. extreme of the land N.W.b.W.; the southern entrance into Altata N. $\frac{1}{2}$ W. about eight miles, and which entrance is in lat. $24^{\circ} 38' N.$, and long. $107^{\circ} 52' W.$

The river of Culiacan is about four miles wide at the entrance, off

which there is an extensive bank, projecting seaward four or five miles, where the sea usually breaks heavily. This bank leaves two entrances, the north one being about one-third of a mile in breadth, having 2 fathoms in its shoalest part, the course through which is N.W.b.N. by compass. The south entrance is fit only for boats, there being but $1\frac{1}{4}$ fathoms in some parts of it, and is likewise at times dangerous from the breakers reaching completely across it. In entering this passage a boat should pull along the beach close in with the surf. The river extends a considerable distance inland, and is two miles wide within the points, and has 6 and 7 fathoms water. At times the tides are so rapid that boats have difficulty in stemming it. Anchorage is to be obtained along the whole coast from Mazatlan to Altata, and beyond it.

Whilst we lay off Altata (into the river of which I sent two boats) it blew strong from N.W., and a considerable sea got up, which caused the ship to pitch a good deal.

We left Mazatlan on the 15th March for Manzanilla, and shaped a course to pass to the westward of the islands of Tres Marias, and having passed them, the land was made to the southward of Cape Corrientes, and we ran along the coast until I considered the ship to be abreast of Cape de Farallones, when I hauled in for the land, the current up to this time having set us to the southward from 10 to 18 miles per day. As we approached Farallones, the wind became light, and eventually calm, (on the 16th,) when at noon the sea breeze reached us, and we stood in for the east point of Navidad Harbour, as marked on the chart, but which is wrong, it being three miles to the north-eastward of the Black Point, and is in fact an open bay with a small inlet running to the northward and westward, and fit only for very small vessels. We stood in to 12 fathoms and to within two and a half miles of the bay, sending in a boat which returned with a pilot for Mazanilla.

The Black Point off Navidad is remarkable, and is formed by a number of black rocks, some of the northern ones being partially white, and stretches to the westward three or four miles; there is also a cluster of rocks under the land to the northward of this point. After passing this point there is a long and steep white sandy beach, (at one and a half miles off which we sounded in 65 fathoms,) at the eastern extremity of which is a large and high white rock, which at first makes like a white cliff attached to the shore, and which is the best possible mark for the bay of Manzanilla, as the point beyond it forms the western extremity of it. Some miles further to the eastward, and off Point San Francisco, is also a white rock. Having passed the point east of the first named white rock, there is a small indentation in the coast, and as you advance a cluster of five small white rocks will be observed lying a quarter of a mile off the east point of Santiago Bay, which is only divided from Manzanilla Bay by a narrow promontory that projects about three miles out into the bay, nearly in the centre. These rocks the pilot reported as being quite bold; we passed close to them to the southward, and stood in to the eastward for the

village of Manzanilla. From this cluster of rocks the Ventura Point (which is the eastern point of Manzanilla Bay) is full four miles, and forms the opening to a very extensive bay of about six miles in breadth and three in depth, and which is divided into two separate bays (Manzanilla and Santiago) by the ridge or neck of land noticed above, and which projects out nearly from its centre. Manzanilla Bay has rather deep water, having 20 fathoms until within a mile and a half or two miles of the beach. The tide usually appeared to set from the west point round the bay, and out at the eastern point.

The inner anchorage is completely landlocked, but is confined, and shut out from the sea breeze. The village, which is situate at the eastern end of the bay, is not seen until close in and abreast of it, it being shut in by a point. The best water is to be obtained from Santiago Bay, from a pool behind the sandy ridge; boats should fill at low water, there being less surf at that time; the villagers construct small wells close to their habitations, but the supply is scanty, though we easily procured ten tons a day. Beef, wood, and the usual stock, are to be had, but not abundantly, with the exception of wood, which is plentiful. There are several lagoons in the neighbourhood, containing immense quantities of wild fowl, but which render Manzanilla very unhealthy; indeed I question if there be a more unhealthy place in any part of the world: amongst many other proofs of it, a few days after our sailing a most deadly fever broke out in the ship, to which ten men and a midshipman within a fortnight fell victims.

We anchored on the 19th in 13 fathoms, mud and clay, eastern point S.W. one third of a mile; extreme of ridge or promontory (already mentioned) N.W. three miles.

Manzanilla to Acapulco. On the 24th March I sailed from Manzanilla for Acapulco, the wind being light and variable from the westward and north-westward, the currents setting the ship to the eastward about 18 miles daily, and anchored in the harbour of Acapulco on the 28th, in 13 fathoms. The plan of the harbour supplied by the Admiralty is so correct, that little need be said respecting its excellence; it, however, has, in common with most of the anchorages on the coast of Mexico, the drawback of a scanty supply of water, which can only be procured (at least so I was told) from wells in the town, which are speedily emptied, being very small, and having in the dry season but a few feet of water in each, and which is far from good. The market is well supplied and the price moderate.

Acapulco to Valparaiso. I quitted Acapulco for Valparaiso on the 29th, with the wind fresh from N.W. and north-easterly, and the current setting to the eastward, but which latter changed on the 5th of April to N.W., 42 miles in the 24 hours, the ship being then in lat. $5^{\circ} 22' N.$, and long. $98^{\circ} W.$, the wind continuing from the eastward, but falling very light, and occasionally shifting from S.S.E. and southward, and with occasional calms, until the 16th, when we crossed the line in $105^{\circ} W.$: during these ten days we experienced a strong westerly current, averaging from 30 to 35 miles a day. On the 16th we met the S.E. trade wind, but very light from S.E. to E.S.E., the cur-

rent still setting the ship to the westward, though its strength had much diminished since crossing the line. On the 26th, being in lat. 20° S., the wind drew round to the N.E., a moderate breeze, accompanied with occasional rain, and so continued until the 30th, when it changed to S.E. for a few hours, and then backed again to the northward and westward, and blew strong and accompanied with rain. On the 4th May we passed to the southward of Masafuera, and on the 9th Juan Fernandez, the wind being from north and N.N.E., which took us into Valparaiso on the 14th, having been 15 days from Acapulco.

From Valparaiso to Rio. On the afternoon of the 28th May I left Valparaiso for Rio Janeiro, being towed out by the boats of the squadron, the breeze being very light and weather foggy, which lasted for four days, when the wind sprang up strong from the S.S.W., attended by squalls and rain. On the 6th June being in lat. 45° S., and long. 82° W., it blew a gale, the barometer falling from 30.11 to 29.70. During the night the gale veered round by north to west and increased in strength until the following noon, when it became a little more moderate, veering round to S.W., and eventually became calm for a few hours. On the 8th the wind again sprang up very strong from N.E., but shifted to S.W., still blowing strong, and so continued till the 10th, when it gradually became light, and drew round by south to east. From the 6th, being then in lat. 45° S., the wind proved very variable, blowing always strongest when from the east and west, and moderate when from the north and south quarters, the barometer falling during the gales from 30.11 to 28.80.

On the 12th we rounded the Horn, with westerly winds, which continued till the 15th, when it drew round to the northward, accompanied with hail and sleet, and some snow, the weather, however, generally speaking, was tolerably fine, the thermometer being 32° . From the 15th to the 18th the wind was from the northward, and occasionally from the westward, and light. On the 20th, in lat. 46° S., a strong gale from S.W. sprang up, accompanied by a heavy sea, gradually increasing to a severe gale, obliging us to heave to under storm sails; this gale continued its violence for two days, when it shifted to W.S.W. and west, and moderated considerably, till the 25th, being then in lat. $38^{\circ} 24'$ S., long. $44^{\circ} 41'$ W., when the wind blew with increased force from north, and lasted till noon the following day, and then shifted to S.W., and became more moderate; the barometer during those gales showing 29.13. From the 28th to the 6th July the wind became light and variable, and principally from the northward, which enabled us to make but little progress, the weather foggy though occasionally fine, and the barometer pretty steady at 30.30. On the 6th a strong breeze from N.b.E. sprang up for a few hours, and then became light from the southward, the current having set the ship twelve miles daily to the westward for several days past. From the 10th to the 12th the winds were light from the northward, but increased in strength as we advanced to the northward.

We anchored outside Rio on the evening of the 12th, in 15 fathoms, the wind blowing out of the harbour.

During our stay at Rio, i. e. from the 12th to the 21st, the wind blew strong, attended with squalls and much rain, and principally from the south and S.W.

From Rio to England. On the morning of the 22nd, I sailed from Rio for England, with a very light breeze from the northward, but which the next day shifted to E.N.E. and E.b.S. until the 31st, preventing us making sufficient easting to keep off the land before the ship's head was put to the northward, the current setting the ship to the southward about thirteen miles daily from the 22nd till the 24th. From the 31st to the 6th August the wind was generally from E.b.S. to E.b.N., squally and unsettled, a westerly current setting the ship from 12 to 15 miles daily. On the 6th, being in lat. 10° S., the current changed to N.W.b.W., from 16 to 23 miles a day; and between the lat. of $1^{\circ} 6'$ S., and $1^{\circ} 20'$ N, the current changed to north 14 miles daily. From the 10th to the 14th the wind was light, varying from south to west, and current very changeable; at times none was perceptible, and at others it set to the northward and westward 14 miles. On the 15th we caught the N.E. trade, light, and from N.N.E., drawing eventually from E.b.N. As we proceeded to the northward and westward, the current set to the northward and westward about 16 miles daily, until the 26th. The wind now became variable, attended with rain and calms, till the 29th, when the wind became light from the westward, with occasional squalls and heavy showers of rain; and on the 30th and 31st, the wind came round from the eastward, and the current setting to the northward 24 miles daily, the wind drawing to the southward with moderate strength until the 9th, when it came from north (current nothing) to N.E., with a fresh breeze until the 11th, when it drew round to N.W., taking us to Spithead on the 13th September, 53 days from Rio, during which time we had a continuance of light easterly winds.

LOSS OF THE BRIG MARY AT NATAL, WITH EARLY RECOLLECTIONS OF THE SETTLEMENT.

(Continued from page 357.)

Hitherto we have only considered the Zoola men, let us now look to the women. These specimens of the human family, as in all barbarous nations, are looked upon as beings of an inferior order, on whom devolves the labour and drudgery.

The Zoola women, when young, are generally what would be considered good looking, many of them, indeed, are remarkably handsome; but from the custom of being early obliged to accompany their mothers to labour in the fields, the figure is spoiled and prevented from assuming the graceful development of which it is capable. The consequence is that they are generally very much below the stature of the men

and their fine forms and attractive appearance are lost by premature decay.

In agricultural pursuits, digging, sowing, and reaping, are occupations that devolve entirely on the women. The land is, generally, first cleared of the brushwood by the men; the women then follow, throwing the seed corn amongst the grass and herbage, and with their rude hoes turn the seed into the ground, leaving the loose weeds on the surface to wither and decay. When the young maize begins to shoot up the loose weeds and herbage on the surface are collected together in heaps and burnt. These agricultural labours commence in October, when all the women of the village go to work, even to the under wives of the chiefs, the "incasagass" only being excepted; and it is nothing uncommon to find a Zoola woman at work in the fields with an infant on her back only three or four days old. They secure the child on their back in a skin strapped round the loins and shoulders, leaving the arms at liberty, an enjoyment which the North American Indians do not permit theirs to have.

The Zoola females are chaste in their conduct. When a Zoola warrior is about to marry it is indicated by the shaving of the head and wearing the "muchu," a circular tuft of hair encompassing the crown of the head. This tuft of hair is then woulded closely to a slender hoop, and the whole is plastered over with gum, which gives it a jet black colour and durable property. He generally selects a young woman on whom his affections had been already placed, and the bargain is completed by making a present to the parents of the girl, consisting generally of a cow or an ox, and such other articles as the means of the husband admit; these presents, under every circumstance, being indispensable and considered in the light of indemnity to the parents for the loss of their daughter's services. Although polygamy is customary among them, yet the Zoolas cannot be said to be a licentious or sensual people.

Notwithstanding the severity of their treatment, the Zoola women can hardly be excelled in cheerfulness and buoyancy of disposition; though the order of civilized society is reversed with them, a cheerful contentment and devoted attachment particularly characterise the Zoola woman.

An incident which occurred during my residence at Natal affords a striking proof of the extent and warmth of affection and gratitude of which they are susceptible, and rarely equalled in the history of civilized life. Our chief-officer, Mr. Hutton, was one day occupied in cutting timber near to a native village when his attention was arrested by the cries of a young female, reiterated to a degree that convinced him something was wrong. Leaving his occupation, he hastened in the direction from whence the cries proceeded and soon found them to be caused by a man in the act of beating a young girl most unmercifully with a bludgeon. The poor girl presented a most pitiable sight, having received a severe cut on the head from which the blood flowed so copiously as to cover her from head to foot, while the enraged savage continued to inflict the murderous blows, deaf to all intreaty of

mercy from his helpless victim; and his ferocity seemed only to increase as the bleeding and mutilated victim of his savage cruelty was sinking beneath his blows, until the appearance of Mr. Hutton for a moment arrested his arm; and even then, although the poor girl was already prostrated with the blows he had inflicted, he was again about to resume this murderous work when Mr. Hutton indignantly commanded him to desist, and followed up his intention by appealing to a broad axe which he had taken with him. The savage seeing that Mr. H. was in earnest made a sullen retreat towards the village, threatening he would yet have the poor creature's life; on which, Mr. Hutton immediately turned his attention to the bruised and bleeding girl, humanely tearing up a portion of his linen to bind up her wounds. He then endeavoured to assist her towards the village, which was at no great distance, and left her in charge of persons which he believed to be her friends. To this, however, she was averse and resisted all his efforts for this purpose. Believing, however, that she would think better of it after a little reflection, when she was more composed, and having carefully bound up her wounds, he left her and proceeded to resume his work. He had not been long occupied, when, on turning round, he perceived the object of his sympathy advancing towards him with a slow and trembling step. She seated herself on a fallen tree near the place where he was working and addressed him in a low and plaintive tone of voice. Mr. Hutton understood little or nothing that she said, but the language of gratitude was eloquently manifest in her blood smeared and sorrowful countenance. She seemed to say at that moment (as the whole of her existence ever after testified) you have saved my life and it shall henceforth be devoted to you in gratitude. Mr. Hutton's warm heart required no interpreter to explain the meaning of this, so plainly expressed in the girl's intelligent countenance, and on his return towards Townsend thither she also followed him, and could not be again prevailed on to return to her own village.

On inquiry, we found that she belonged to a family of the Mattabanah tribe. She had no mother, and the man who had so cruelly beaten her was her father: her poor mother had already fallen a victim to the cruelty of this heartless savage, and there is no doubt but the unfortunate daughter would have shared her mother's fate had not the timely interposition of Mr. Hutton prevented it. The conduct of this monster was condemned in severe terms by the more humane of the people to which he belonged, and who agreed with the girl in her resolution of seeking the protection of and remaining with the Moolongos, rather than be subject to the brutal treatment of her unnatural father. This man, finding that she was determined on remaining with us, gave up his claim to her in consideration of receiving a small present in beads, as a remuneration for the loss of her services.

Her first appearance at Townsend was a painful and disgusting spectacle. She was covered with blood, and, being in a state of nudity, was an object of pity and disgust. This was quickly remedied with a shirt, and her wounds were carefully dressed. She told us her name Dommana; she appeared about eighteen years of age and had

rather a prepossessing countenance and an amiable disposition. On recovering her composure she was solicitous in finding how she could make herself useful. When Mr. Hutton resumed his labours in the morning she was constantly at his side, watching for an opportunity of assisting him in turning over or hauling a piece of timber. Seeing her so anxious to make herself useful, Mr. Hutton hit on an employment for her more suited to her sex. He soon provided her with a tub of water, and collecting some soiled linen, gave her a lesson in washing! Dommana was an apt scholar; she required very little instruction to become a very good laundress; her eager desire was not only to make herself useful, but to please and elicit the approbation of every one at Townsend, but more particularly that of her benefactor Mr. Hutton. She would watch and study every gesture so as almost to be able to anticipate his wishes; and his approval of her conduct or actions seemed to be her greatest delight.

Two years afterwards, when Mr. Hutton lingered on a bed of sickness, that carried him to his grave, this devoted creature watched over him with all the solicitude of a mother over an only child; and the sequel proved that no selfish motive had a place in the breast of this simple creature. The patient attention and anxious and incessant watching of this poor Indian was, indeed, with her a labour of love that only terminated with the last struggle of Mr. Hutton's departing spirit. Then no outburst of grief, no wailing voice, was heard from the sorrowing Dommana; a long, deep, and heavy sigh alone indicated the anguish in her breast. Her grief, alas, was too poignant, no softening tear came to her relief; that sigh was a deep drawn fearful effort that snapped the chords of her grateful heart, and she left the corpse of him who had been her friend a heart broken idiot. That simple innocent girl had lived but to discharge a debt of gratitude, and the last breath of her protector dissolved her worldly tie; reason had forsaken her mind, and all that remained of the once gay and lively Dommana was now a pitiful idiot.

The kind and soothing treatment that was administered, through the best and most judicious means, failed to reclaim this affectionate creature from the lethargic state into which she sunk on the night of Mr. Hutton's death. Having also myself been a favourite with her in her recent happy days, in vain were every means tried by me that concern and kindness could suggest to arouse her into a state of consciousness and to induce her to partake of food. It was truly affecting to witness the heart-broken creature as she lay extended on a mat, her eyes presenting a painful vacant stare, while a heavy breathing, with occasionally a deep drawn heavy sigh, was all that indicated the existence of the unconscious Dommana.

In this manner she lived three days, and on the fourth, being the fourth day, also, after the interment of Mr. Hutton, the grateful Zoola girl was laid by his side in the same cold bed of death.

The devotedness of this African girl to her benefactor is a trait of character that commands our respect. When it is considered how many similar ties, and others perhaps more sacred, are broken by the

slave-trade, the Christian shudders at the thought that there are beings who are guilty of trafficking in such affections as the above. But it is too true. How many thousands of heart-broken wretches have been torn away from this same African soil, by that infamous traffic in Human Flesh, from all that was held dear to them in reality and sacred in memory, to endure, if they could, the suffering occasioned by the pestilential air in the crowded hold of the slave vessel. There, indeed, are victims interred alive; there they would almost devour each other to obtain a breath of fresh air. Fiendish and revolting to humanity as this is, what is it compared with the mental agony caused by tearing piecemeal all the holy affections of the unhappy victims. May we not believe that if aught in the catalogue of the crimes of nations or individuals ever caused the divine wrath to descend, the people of that country which is striving to annihilate the slave trade traffic in blood will stand conspicuous on that great day when the awful account of all shall be rendered.

But to return from this digression to our Zoola people. Both sexes go perfectly naked until they reach the age of puberty; the female then provides herself with a prepared skin that is wrapped round the loins, sometimes reaching to the knees. They then shave their heads with the exception of a small round tuft, two or three inches in diameter, on the crown of the head, which they plaister with grease and red ochre. They are very cleanly in their persons but invariably anoint themselves with grease or rancid butter, which gives them a very disagreeable smell.

When the women become old and infirm and, therefore, unable to work or provide for themselves, their condition is deplorable. They drag out a painful miserable existence without exciting any sympathy or compassion. The aged of both sexes are held in the utmost contempt by their friends or relatives, and are treated with cruel neglect and indifference. They are often thrust out of the hut in which they have been wasting away with the infirmity of age and want while yet the feeble lamp of life is flickering in the socket. But, to account for this, there is a religious superstition among them that a dead body pollutes the dwelling where the last breath has been drawn, and thus the sick and the aged are often left by their friends to expire in the ditch or the jungle, there to be devoured by beasts of prey.

The bodies of the dead are never interred, except in the case of a great chief. They are dragged to some distance from the village and left in the nearest jungle, where the bodies are speedily devoured by birds and wild animals.

(To be continued.)

BOTTLE PAPERS.*

(Continued from page 375.)

SUPERIOR.—Track No. 40c.

St. Croix, 10th December, 1831.

SIR,—Some gentlemen of this island having last month gone down to Crab Island, sometimes called Bieque, which lies near Porto Rico, for the purpose of amusing themselves with shooting, &c., one of the party, on the 25th ultimo, at a place called Playa Grande, on the north side of the island, found, washing in the surf on the beach, a bottle, which he opened, and found within a paper, which my brother (one of the party) delivered to me on his return, on which is written as follows :—

March 2nd, 1831.

“ This bottle was thrown over from the brig *Superior*, Capt. Salmon, on her passage from London to Rio Janeiro, lat $20\frac{1}{2}^{\circ}$ N., long. 25° W., all well.

HENRY WARD,
RICHARD BATE, } *Passengers.*
JOHN INGLIS,

“ P.S.—Should this be found, please to observe which way the current has run.
“ Sailed from Gravesend, Saturday, February 5th, 1831.”

To serve the useful purpose of such experiments, I take the liberty to request the favour of your giving it publicity. The place where it was found lies in about lat. $18^{\circ} 8'$ N., and long. $63^{\circ} 25'$ W. from Greenwich. This bottle must have passed over a line of reefs and breakers, and it is surprising how it escaped being broken. From the place where it was thrown overboard to where it has been picked up, the distance in a direct line is about 2,264 geographical miles.

I remain, &c.,

ANDW. LANG.

John Bennett, Esq., Secretary to Lloyd's.

St. Croix, 15th February, 1847.

SIR,—If the above was made public, it has never come to my knowledge, I therefore send it to you as an addition to your bottle papers. It is the more interesting from the supposition that it could only have reached the shores of Crab Island but a short time before it was picked up. Admitting even that it was the same day, its average set to the westward in 24 hours would be about $8\frac{1}{2}$ geographic miles for 268 days.

I remain, &c.,

ANDW. LANG.

To the Editor of the *N. M.*

H.M.S. THUNDER.—Track No. 41.

His Majesty's ship *Thunder*, Nas-au, 19th Dec. 1834.

SIR,—The enclosed paper I received from the Editor of the *Nassau Gazette*, to whom it had been forwarded from Watling Island by Mr. Farquharson.

I have the honour to be, &c.

To Captain the Hon. George Elliot, C.B.

R. OWEN, Commander.

The latitude and longitude is wrongly stated in Table.

H.M. surveying ship, *Thunder*, 24th July, 1833.

“ One, P.M., lat. $28^{\circ} 3'$ N., long. $26^{\circ} 39'$ W. A steady breeze, with royals and stud sails, going 7 knots, wind E.N.E., and clear weather. Bar. $30\cdot34$, therm. 76° in air, 74° in water.

“ RD. OWEN, Commander.”

* For Chart of Tracks see number for November 1852.

PRINCESS ELIZABETH.—Track No. 41 *a*.

“*Neptune*, St. John’s Road, Antigua, June 29, 1809.

The following letter furnishes an excellent illustration of a well-known fact, that the general tendency of currents in the ocean is from the East towards the West:—

“SIR,—As the enclosed letter, picked up in a bottle, on the windward part of the Island of Martinique, on the 18th of April last, tends to elucidate the state of the current in the Atlantic Ocean, I enclose it to you, with a request that you will be pleased to make the circumstance known to the Lords Commissioners of the Admiralty.

“The bottle appears to have been thrown overboard by the *Princess Elizabeth* packet, going to the Brazils, on the 6th of September, 1808, in lat. 14° 45’, and long. 25°, and it must have been carried about 2020 miles in 224 days, which gives nine miles per day on a west course.

“I am, &c.,
ALEX. COCHRANE,

“Hon. W. W. Pole.”

LOHAREE.—Track No. 41*b*.

H.M.S.V. *Alban*, (tender to H.M.S. *Imaum*,)
Grey Town, May 17, 1851.

SIR,—I have the honour to enclose a copy of a paper found in a bottle on the coast of Mosquito, in about lat. 12° 10’ N., and long. 83° 40’ W.

It was found by some Indians on the 21st April, who delivered it to Mr. Coates, H.B.M. Vice Consul at Blewfields, from whom I received it on the 7th instant.

The original I have forwarded to the directions on the paper, in compliance with the request.

I have the honour to be, Sir,
Your most obedient, humble servant,
FRED. A. W. CRAUFURD, Lieut. Commanding.

To Admiral Sir F. Beaufort, F.R.S., &c.

“Remarks:—Friday, July 5th, 1850, at noon, in lat. 17° 10’ N., long. 25° 28’ W.

“Just passing the Isle of St. Antonio, off the Cape de Verd, in perfect good condition, and favourable prospect of doing well. All the crew in good health; ship perfectly tight.

“On board of iron barque (English) *Loharee*, for Ceylon, in the East Indies.

“JOSEPH RAW, Commander, South Shields.

“JOHN CLAY, Esq., Owner.

“Any person picking this up we shall feel much obliged to forward to the above address, or Captain Joseph Raw, 19, Albion Street, South Shields, Northumberlandshire.”

WILLIAM LOCKERBY.—Track No. 42.

Paradise, Quarter of Sacarigua, Trinidad,
22nd September, 1838.

DEAR SIR,—The enclosed was picked up in a bottle within one of the reefs of the Union I., Grenadines, West Indies, on the 10th July last (by certificate of my manager, Mr. Frederick,) having been thrown overboard from the ship *Wm. Lockerby*, in long. 25° 10’ W., on the previous 22nd of January. As a long reef extends North and South about eight miles to windward of Union Island, the bottle may have been laying there for some days before it came on shore at the place where it was picked up. Union Island is situated in

about 61° 18' W. long., and 12° 37' N. lat., showing a direction of the current nearly West.

I remain, dear Sir, very faithfully yours,

O. W. SPAIN,

Com. Washington, R.N.

Capt. Bengal Army on Furlough.

"The ship *Wm. Lockerby*, Captain Parker, sailed from Liverpool for the Cape and Isle of France, on Thursday, 28th December, 1837. Was detained in the Irish Channel by adverse gales and boisterous weather until the 6th of January, when a south-westerly course was shaped from Cape Clear, with a head wind and heavy sea. The wind gradually veered round to the eastward, so that the ship preserved a direct course until the 32° North latitude, or the parallel of Madeira, and to the westward of that island about 8°, when the wind, though still fair, became light till the 16th inst., when in the parallel of Palma the N.E. trade commenced hanging northward at first, and then becoming more easterly than usual, blowing strong and in heavy squalls till the parallel of Brava and Fogo. When in mid-channel, between the Azores and Portugal, a heavy sea stove in the starboard deadlights, and destroyed a book-case on the opposite side of the after-cabin, tearing up the chronometer case, which was screwed securely to the top of a chest of drawers. On making the island of St. Antonio in the north-west range of the Cape Verds, we found the timepiece had not altered its rate. The trade has been more squally than usual, even sometimes boisterous. Within its limits the sky has frequently presented a very wild and fantastic appearance, halos round the moon and Jupiter; short morning rainbows, &c. In making St. Antonio it is advisable to keep some miles to leeward, as a vessel may be becalmed under the high land of the island. Have not been influenced by currents from the west during the voyage. Thermometer within the trade at 70°, weather cold; warmth only now beginning to increase; barometer has stood since we reached 30° N. at about 30.01. Troops of the flying fish, *exoctus exiliens*, seen to day for the first time; one dropped on board; length of the pectoral fins very remarkable. Temperature of sea 74°.

"PAT. ROLLAND, M.D.,

"Passenger per *Wm. Lockerby*."

"This bottle was thrown overboard from the ship *Wm. Lockerby*, of Liverpool, bound to the Cape of Good Hope, &c., in lat. 14° 7' N., long. 25° 10' W., Monday, 22nd January, 1838. This is intended to ascertain the set of the North Atlantic currents. Whoever picks up this bottle is requested to acknowledge it by publication.

"J. PARKER, Master."

"Picked up on the Union Island eastward Bay, on the morning of the 10th July, 1838. The bottle must have been over a rough reef of coral from the spot in which it was seen floating near the shore.

"F. O. FREDERICK, Manager of said Island."

H.M.S. INVESTIGATOR.—Track No. 42 a.

Public Treasury, Belize, Honduras, 16th Sept., 1850.

SIR,—I have the honour to enclose a communication from the Commander of H.M.S. *Investigator*, in compliance with the wish expressed therein. It was picked up at Ambergris Cay, the northern extremity of this settlement, on the 27th ultimo, and brought to me a few days afterwards. This is the first eligible opportunity I have had of sending it on.

I have the honour to be, Sir,

Your obedient, humble servant,

JOHN GOUGH, Public Treasurer.

The Secretary to the Admiralty, &c.

"Thrown overboard from H.M.'s discovery ship *Investigator*, Friday, 22nd February, 1850; lat. $12^{\circ} 25' N.$, long. $26^{\circ} 5' W.$ Got the trade winds in lat. $20^{\circ} N.$ on the 18th inst. Crew all well.

"Parted company with H.M.'s discovery ship *Enterprize* on Friday, 1st February, 1850, in thick weather and strong winds.

"Whoever may pick this up it is requested that the intelligence may be forwarded to the Secretary of the Admiralty, London.

"ROBT. McCLURE, Commander."

[This has followed the usual track, making good a course N.W. about 3,600 miles, at the rate (by interval 206 days) of 17 miles per day.—Ed.]

H.M.S. ENTERPRIZE.—Track No. 42 b.

Colonial Secretary's Office, Belize, Honduras, April 9, 1851.

SIR,—I have the honour to transmit a document which was found in a sealed bottle on the 5th of March last, lying on the beach about half way between this port and the Bay of Ascension. Lat. about $18^{\circ} 40' N.$, long. about $88^{\circ} 40' W.$

I have the honour to be Sir,

Your obedient, humble servant,

GEO. MICHEL, Col. Sec.

The Secretary to the Admiralty, London

"H.M.S. *Enterprize*, 3rd of March, 1850, lat. $1^{\circ} 7' N.$, long. $26^{\circ} 48' 30''$, in search of Sir John Franklin. Left England 20th January, 1850. A breeze from the Southward and Eastward; expect to cross the line to-morrow; all well.

"RICH. COLLINSON, Captain.

"Parted company with *Investigator* 31st January, 1850. Experienced during the last twenty-four hours a Westerly set of five miles."

[These two ships were then on their way to Behring Strait, in search of Sir John Franklin, and it is remarkable that the bottles should have gone so nearly to the same place, although thrown over 600 miles apart.—Ed.]

(OSPREY.—Track No. 43.

A bottle from the ship *Osprey*, of Glasgow, lat. $5^{\circ} 12' S.$, long. $24^{\circ} 40' W.$, 28th of March, 1820. Found, 4th of February, 1821, near the eastern point of the Salines, quarter of St. Anne, Island of Martinique. Attested at St. Pierre, Martinique, 13th of February, 1821, by Monsieur T. Bourmant, Printer, and Director of the General Post Office at that place.

A bottle thrown from the *Osprey*, at noon, on the 1st of April, 1820, in lat. $12^{\circ} 56' S.$, long. $29^{\circ} 10' W.$, was found, 10th of June, 1820, on the Barra Grande, coast of Brasil, lat. about $9^{\circ} 20' S.$ Its true directions seems to have been N.W.b.W.½W. Attested by Messrs. Lowe and Co., of Macaio, in the province of Pernambuco.

BARQUE WINDERMERE.—Track No. 43 a.

October 12th, 1843.

SIR,—The enclosed was picked up by me in lat. $10^{\circ} 25' N.$, and long. $14^{\circ} 45' W.$, near the river Broat, on the West coast of Africa, on the 28th day of July, 1843.

THOS. FLIGHT, Comm. of the Brig *Nunez*, London Docks.

We find the following in the *Shipping Gazette* of the 17th July,—

"Report of the *Timbuctoo*, at Bristol July 15, sailed from the West coast of Africa May 14 :—

"A bottle, with a slip of paper enclosed, containing the following :—'Thrown overboard from the barque *Windermere*, bound to Hobart Town, the 20th

August, 1850, in lat. $4^{\circ} 24' N.$, long. $20^{\circ} W.$, was picked up by the natives on the beach at Picaniny, Lahou, West coast of Africa, March 6, 1851, which is in lat. $5^{\circ} 8' N.$, long. $5^{\circ} 18' W.$ "

The *Windmere* appears to have been on the outer edge of the Guinea current when this bottle was thrown overboard, and it has followed the usual course of that current to the Eastward. The bottle No. 43 *a* is another instance of the same kind.

SHIP KINNEAR.—Track No 43 *b*.

Maranham, 28th September, 1843.

SIR,—I have the honour of transmitting to you the enclosed, which was picked up on the 2nd of August at the Bar of Tutoia, entrance to Parahiba, on the coast of Brazil, which place lies in lat. $2^{\circ} 38' S.$, long. $41^{\circ} 48' W.$, and there can be no doubt that the bottle which contained the same came ashore on the day it was found, for the person who found it and delivered it to me, said that he passed that way on the 1st, and on returning on the 2nd, he discovered the bottle lying on the beach.

Without further to add, I remain, Sir,
Your most obedient servant.

ALEX. THOMSON.

"Ship *Kinnear*, from Sydney, New South Wales, to London, May 8th, 1843. Lat. $8^{\circ} 46' S.$, long. $24^{\circ} 18' W.$

"This bottle is thrown overboard to ascertain the course of the current, by
"HENRY KELSALL, M.D., Surgeon, R.N.

"Have the kindness to forward this paper to the Editor of the *Nautical Magazine*, London, informing him when and where the bottle was picked up.
"H. K."

The bottle above referred to was found on the 2nd Aug., 1843, at the Bar of Tutoia, coast of Brazil, lat. $2^{\circ} 38' S.$, long. $41^{\circ} 48' W.$

KINNEAR.—Track No. 43 *c*.

London Docks, Oct. 12th, 1843.

SIR,—The enclosed was picked up by me in lat. $10^{\circ} 25' N.$, and long. $14^{\circ} 45' W.$, near the river Broat, on the West coast of Africa, on the 28th of July, 1843.

I am, &c.,

THOS. FLIGHT, Commander of the brig *Nunex*.

To the Editor of the *N. M.*

"*Kinnear*, from Sydney, New South Wales, to London, 15th May, 1843, lat. $6^{\circ} 6' N.$, long. $24^{\circ} 29' W.$

"This bottle is thrown overboard to ascertain the course of the current, by
"HENRY KELSALL, M.D., Surgeon R.N.

"Passenger in the *Kinnear*."

"Have the goodness to forward this paper to the Editor of the *Nautical Magazine*, London, informing him where and when the bottle was found."

[This is a remarkable illustration of the different prevailing currents of the Ocean. The bottle which we call 43*a* appears to have been thrown overboard in that part of the ocean between the northern edge of the equatorial current, and the south-west edge of the Guinea current: and to have arrived at the place where it was found from its starting point, we can suppose it to have been carried first to the north-west, then to the north and north-east, (perhaps as far as the Cape Verdes,) until it fell into the current setting to the southward and eastward along the coast of Africa. The totally opposite course it has taken from bottles Nos. 43 and 44, adds considerably to the interest of it.—Ed.]

STRATFORD.—Track No. 44.

A bottle from the *Stratford*, of London, Capt. Abyah Locke, on her return from Otaheite, 21st Jan., 1836, in lat. $4^{\circ} 7' N.$, long. $24^{\circ} 17' 15'' W.$ Found on the northern extremity of Barbadoes, 8th June, 1836, its direction apparently having been about W.N.W. $\frac{1}{4}$ W. (true), and distance 2,100 miles.

H.M.S. RAPID.—Track No. 44 a.

A bottle containing the following letter, imparting information relative to the currents of the ocean, was picked up by Mr. Edward Smith, Master of the brig *Samuel and Edward*, of Bangor, United States:—

“H.M.S. *Rapid*, Tuesday, February 24, 1832. In lat. $0^{\circ} 30' 00'' S.$, long. $22^{\circ} 34' 30'' W.$, experienced a strong current, running north-west, at the rate of 30 miles per day; two days previous, but in the above latitude and longitude, we had no currents, which induces me to send this bottle. Should it be picked up, note the day of the month and date, together with your latitude and longitude, and forward it me.

“ALFRED MESSUM, Master, H.M.S. *Rapid*.

“We are bound to Rio de Janeiro, and have had a fine passage from Madeira, 14 days.” [Note—The bottle mentioned as containing this note was picked up on the beach in Galeon Bay, July 29, on the north-eastern part of the island of Martinique, lat $14^{\circ} N.$, long. $60^{\circ} 56' W.$]

“HENRY FROST, U.S.C.V.C.”

OSPREY.—Track No. 45.

A bottle from the *Osprey*, of Glasgow, at noon, on the 17th of January, 1822, in lat. $6^{\circ} 13' S.$, and long. $15^{\circ} 35' W.$ Found on the 27th July, 1822, in Mayaro Bay, Island of Trinidad, lat. $10^{\circ} 15' N.$, and long. $61^{\circ} 2' W.$

A FURTHER ENDEAVOUR TO FIX LIGHTS ON THE GREAT AND THE LITTLE BASSES.

Mr. Editor,—The very important project of lighting the Basses has been so frequently brought to notice, and cannot be lost sight of, that I beg to call attention to the subjoined correspondence which is most satisfactory because it proves that an object of such essential importance to the welfare and safety of navigation is most strenuously advocated by His Excellency, Rear-Admiral Sir Fleetwood Pellew.

2. Frequent reports from Commanders of steamers and sailing ships have reached me, within the last year, about the uncertain set and force of the current when approaching the Great and the Little Basses, either from the Bay of Bengal, the Straits of Malacca, or from the Cape of Good Hope and Point de Galle; and I am well aware that Commanders of ships and steamers are always perplexed and embarrassed by such doubts and uncertainty, and invariably guard against this, the most difficult navigation they have to encounter, by giving those dangerous rocks such a very wide berth that much loss of valuable time and distance is experienced, which would undoubtedly be obviated by lighting the Basses.

3. That great desideratum is a national concern. I hope it will be viewed in that light, and that the execution of the project will very soon be undertaken; otherwise some disastrous event may intervene, and bear with it that forcible conviction that where lives, and public mails, and private property are at stake, *delays are dangerous*.

I am, &c.,

CHRIS. BIDEN.

Madras, 2nd May, 1853.

Madras, 28th April, 1853.

Sir.—I have the honour to submit to your Excellency's consideration the following remarks on the very important subject of lighting those dangerous rocks, the Great and the Little Basses, which I am well aware has already engaged your favourable notice and attention. I ventured to urge these essential safeguards to navigation in November 1847, and, since that period, there has been such a vast increase of steam communication, and the probability of a still further increase of steamers charged with the transmission of mails and public and private property, (including specie of immense value,) besides a large number of passengers, all traversing to and from the Red Sea, and to and from the Eastern Seas, and having directly in their track the Great and Little Basses, which they must frequently pass during the night, that the want of those beacons is more desirable than ever.

2. The well known irregularity and uncertain set and velocity of the current in the vicinity of those dangers afford abundant proof of the serious risk which is incurred by all ships and vessels when passing rocks without lights or beacons, and without any sure and certain indication of a near approach to those dangers.

3. Your Excellency is, I believe, well acquainted with the strenuous arguments which I have repeatedly adduced in favour of this project; therefore I will not trespass on your valuable time by any repetition of the disasters which have occurred on the Basses, and the narrow escapes that have been experienced both by sailing ships and steamers, which have been suddenly and most unexpectedly endangered when driven by a current which has frequently baffled the most cautious navigators.

4. Adverting to my letter to the late Rear-Admiral Austen on this subject, dated the 19th of August 1851, and copy of a letter to my address from a number of the Commanders of steamers in the service of the P. and O. S. N. Co. and Masters of merchant vessels forwarded therewith, I can now assure your Excellency that that letter, which has been kept open at my office, bears the signatures of two hundred and fifty experienced officers, who have certified to the emergent necessity of fixing a light on both the Great and the Little Basses.

5. In the event of your Excellency commanding a survey of both those ledges of rocks, I think the following extracts from letters to my address may, in some measure, be serviceable.

6. Captain Harris, a Commander in the late maritime service of the Hon. the East India Company, and now commanding the P. and O. S. N. Co's steam-ship *Hindustan*, is of opinion that the Basses are not laid down correctly, and says, "From observations which I have made on many voyages from Madras, and assuming that the longitude of the Madras flag-staff is 80° 14' 15" E., I make the longitude of the Little Basses 81° 55' E., and the Great Basses 81° 32' 26" E."

7. When I first urged the necessity of lighting the Basses, I stated, as my opinion, that a light of the first order on the Great Basses, and elevated about 150 feet above the level of the sea, would effectually guard the approach to the most dangerous ledge (the Little Basses) from the eastward, assuming, as I then did, that the distance from the eastern extreme of the Great Basses to the eastern limit of the Little Basses is not more than twenty-one miles; but subsequent information leaves no doubt that the distance is at least twenty-five miles, and that shoal water extends, in an easterly direction, beyond the position assigned to the Little Basses. It therefore appears very certain that the whole distance is beyond the range or safe dependence on the most brilliant illumination in thick or hazy weather; and, under this conviction, I have ventured to suggest the expediency of erecting a tower on the Great Basses, on which should be exhibited a fixed light, and a tower on the Little

Basses, on which should be established a revolving light; and, as the Little Basses may be safely approached within five miles, and the Great Basses within one mile, it is obvious that lights forty feet above the level of the sea would be an effectual safeguard, and would not cost more than one lofty tower.

8. Under these circumstances, I communicated my change of opinion to Mr. Alexander Gordon, a Civil Engineer, who has had much experience in the construction of lighthouses; and the following is an extract from his letter in reply, dated the 8th of November last, together with designs of lighthouses for each of the positions referred to.

"I am much obliged to you for your letter of date 7th July. When I received it I sent a copy of it to the Admiralty, making reference to my former communication with that department on the subject of lighting the Great and Little Basses. The communication referred to, you were made acquainted with in mine to you of 30th May. My last letter from the Admiralty is dated the 15th September, and is as follows:—"I have laid before my Lords Commissioners of the Admiralty your letter of the 23rd August, on the subject of lighthouses for the Great and Little Basses, on the Coast of Ceylon; and I am commanded by their Lordships to acquaint you that no steps can be taken until they receive the information which the Commander-in-Chief in the East Indies has been directed to furnish.—W. B. Hamilton."

"It is earnestly to be wished that the survey may soon be made and sent home. So far as my proposed lighthouses are concerned, I only care for a survey to let me see how to land pieces and packages weighing less than one ton each. I care little whether the rocks be rough or smooth. If rough, I shall only propose the use of more bitumen, and, whether rough or smooth, the interior of the tower, if made under my direction, must be loaded with bitumen and old iron ballast, both of which I can have at a low price, and they will form a heavy and tenacious mass so as to resist any blows of the sea by inertia and adhesion. You will see by the section on the sketch how the interior of each lighthouse will be fitted for fresh water in the bottom, then stores; a little way above half way up a large sitting room, and then the two upper stories afford space for a cleaning room, and for three, four, or five bedrooms. You will observe that your requirement of a difference in shape at top can be had, so that vessels out of reckoning or carried out of their course by currents may, at a considerable distance, distinguish the one from the other by day; at night, the character of the lights will suffice.—Alexander Gordon."

9. The erection of a lighthouse of any magnitude on the Great Basses is, undoubtedly, feasible because there is an elevation of hard rock, about ten feet above the level of the sea, and, being of considerable extent, it is spacious and substantial enough for the foundation of such an edifice; and I have very little doubt that an able and scientific engineer can find a good foundation amongst the scattered rocks which form the Little Basses, because I myself have seen, in all weathers, the rocks several feet above water, and affording a far more eligible foundation for a lighthouse than what was found and made available for the construction of those famous towers on the Eddystone, the Skerryvore, and the Bell Rocks.

10. Under all these circumstances, I beg most respectfully to say that I place every reliance on your Excellency's approval of a project so essentially wanting to give security to navigation on a track so much frequented and now liable to those serious inconveniences and that imminent peril which beset the mariner's onward course; who, to avoid a well known danger makes a very circuitous route, and, thereby, a sacrifice of time, which, in all steam communication, is a question of considerable importance. It is, however, very evident that the most skilful navigator may be so completely out of his reckoning when shaping a course to pass the Basses, that he may suddenly be driven

upon them; and, under this serious liability, I am very confident that your Excellency will give the project all the advantage of your influential support.

With every sentiment of respect,

I have the honour to be, &c.,

CHRIS. BIDEN.

To His Excellency the Honourable Sir Fleetwood B. R. Pellew,
C.B., K.C.H., Rear-Admiral and Commander-in-Chief in the East Indies.

Winchester, Madras Roads, 29th April, 1853.

Sir,—I have received your letter of the 28th instant, accompanied by a plan and elevation for two towers proposed to be erected on the Basses Reefs, and I shall forward them to the Admiralty.

I have long been aware of the great necessity of erecting lights on those very dangerous reefs; and I am of your opinion that one lighthouse or tower, however high, would not be a guide for both dangers, so far separated as they are; and that the plan proposed of two lower buildings with a different shape for day and thick weather,—and it would be desirable, perhaps, if a different colour also,—and, by night, one a revolving light and the other fixed, would be found to answer every purpose desired.

I believe the Basses have been frequently examined in detail, and reports made by order of the Government of Ceylon; and no doubt these plans and reports would be found in the records of the proper Department at Colombo, and probably at the Colonial Office in London.

In the S.W. monsoon it is very difficult to approach or land on these rocks, from the great sea breaking on them, but in the N.E. monsoon they are comparatively easy of access. I shall, however, endeavour to ascertain all the particulars respecting the facilities of erecting the lighthouses, and forward them to the Admiralty, with my earnest application to their Lordships to take the task in hand, and communicate on it with the Ceylon or India Governments, between which there is, I fear, some difference as to whether the expences, &c., &c., should devolve on the East India Company or on Her Majesty's Government of Ceylon.

I am convinced that, if much longer delayed and with the vastly increasing traffic and passage of vessels, especially of steam-vessels, in the night, there will occur some fatal calamity and great loss of life.

I am aware how much the Government and the Public are indebted to you for your long and earnest exertions in the furtherance of this most pressing and desirable object, so important to the safety of Indian Navigation.

I have the honour to be &c.,

FLEETWOOD PELLEW,

Rear-Admiral and Commander-in Chief.

To Captain C. Biden, Master Attendant, Madras.

ON LOWERING BOATS.

To the Editor of the Nautical Magazine.

SIR,—On former occasions you have done me the favour of inserting my opinions in your Magazine, and I rely on your believing that I would make no statements on a question of great public importance, and one which has for its object the alleviation of human suffering and sorrows, and which indeed regards the safety of human life on a large scale, without at least considerable circumspection and deliberation.

Believing I have solved a very difficult problem in maritime "manipulation," I cannot doubt that the most proper vehicle by which to announce to the nautical world a useful nautical invention is a page of your valuable and widely circulated Magazine.

Since the destruction of the unfortunate *Amazon*, scarcely a month has passed without some serious loss of life at sea, and the majority of accidents have had connection with certain defects in our present system of boat service. It is a melancholy fact that the most devoted heroism has in vain attempted, by all the intrepidity and calmness of sympathy and discipline, to remedy these defects; and were the safety of many brave fellows who man our naval and mercantile ships our only object, they claim our energies to provide for their safety by, at least, our attending to any suggestions made in their behalf. If possible even more anxious does the question become, when so many thousands of passengers are crowding the decks of ships and steamers, (thus increasing the evils,) and when the terrors of rough boat service are brought to bear on the nerves of helpless women and children.

A steady view of the question presents us with the following as comprehending the main difficulties which have so long called for remedy:—

1. In lowering a boat, the tackle falls have to be cleared, or “seen all clear,” for when the ship has much motion, or is shipping seas, or the deck is crowded with terror-stricken passengers, a “fouling” of the fall checks the descent of the boat on an even keel, and endangers her, with all in her.
2. The delay of clearing a boat for lowering gives time for it to become crowded, and thus increases the hazard, embarrassing the crew and officers.
3. It is difficult in bad weather, and at night, to lower both ends simultaneously.
4. Casting off a boat’s lashings occupies much time, especially in the night.
5. Boats have generally to be hoisted off their “crutches” before they can be lowered; to do this, *men under great excitement have to act in concert.*
6. At least one or two men must descend with the boat in any weather, and if the ship be aground in a toppling sea, consequent upon shallowness of water, this is very hazardous.
7. If one end of the boat touches the water before the other, there is danger of her capsizing or filling.
8. A hook at the end of the tackles is very objectionable, as it may catch a thwart or spar, the gunwale, &c., as the boat rises and falls.
9. It is difficult to release a boat from her tackles in the short intervals of the strain being off the tackles by the rising of the boat.
10. It is of great importance in bringing a boat alongside a ship in rough weather to be able to suddenly catch the gear, and make both ends all safe for hoisting.

To effect such an arrangement as might *even reduce some of these difficulties*, has long been desirable. I have, however, the pleasure of acquainting you that I have succeeded in *thoroughly surmounting* ALL of them; and this, too, by an invention or arrangement which presents no complication or intricacy, for its very simplicity is so great that all is comprehensible at a glance, even by a landsman of ordinary intelligence. In due time I will give you a copy of my plans in detail; for the present it may suffice to say that in time of danger, on an order being given by an officer to “lower away a boat,” a single act by a single person could easily lower one without shock, and by a self performing process the boat could, within ten or twenty seconds of time, be released from everything but a painter, so simple is the releasing apparatus which comes into action on either end of the boat’s fairly touching the water. The arrangement offers scarcely any peculiarity in appearance, to a casual observer; the davits are slightly different, but all is compact and snug. It is *inexpensive*, entirely without cog wheels, and can be applied to *ordinary boats*. In order to effect the release from the tackle a sound mathematical principle, (hitherto, I believe, unapplied,) is called into operation. Those who

have witnessed the confusion of shipwreck, where large numbers of passengers naturally rush to the boats, will best appreciate the value of anything which tends to preserve to the officers and crew *the sole command* of all available methods of preventing sacrifice of life; and nothing conduces more to the general safety, than the execution of calm and deliberate orders issued by lips of experience.

But as things are, in a passenger carrying ship, where many persons are on board, a general rush and consternation precipitates the boat (crammed with people) into the sea; to release her is nearly impracticable, and one combined shriek announces too often the deprivation of hope to those left on board. By my plan, however, this awful state of things may be totally and certainly prevented. How far it would be *prudent or advisable* to deprive the multitude of access to boats may be left for consideration. I can only assure you that my invention admits of the *entire disposal of all, or any of the boats of a ship*, so that they may be in the hands of the Captain himself, or his officers, *according to his will*; and whether the lowering of a boat be accomplished on deck, or even in the *Captain's cabin*, or by the *office- or mate of the watch*, the facilities for so doing are available to one person in either case, or she may be lowered as at present, by a person at the gunwale. Hence the great cause of danger would be entirely removed, and the discipline of the ship suffering no interruption from the terror of the passengers and their acts, order would be more easily maintained. Captains and officers are very seldom, (indeed *never* as a body,) wanting in coolness and decision at these times of trial.

The means of freeing a boat (when down) from tackle, may either be left to a man descending with the boat, or it may at once be rendered perfectly self-acting. If done by a man, it is but like the touching of a trigger;—if self-acting, it is but like (comparatively) setting the hair trigger of a gun; which can be *fired with either at will*: so trifling is the difference, and yet so *secure* is the process, that it may be relied on. The boat may, moreover, be lowered *full of people with equal safety*, so far as tackle and its release are concerned.

I have thus stated facts, which if correct must confer a great benefit on all who tempt the mighty ocean. Not only may many valuable lives be saved annually to their families and the country, but those whose occupation is on the waters will have consolations and hopes of safety, the privation of which at present tells seriously upon traffic. Henceforth, by improvements in our boat service, the deep will lose many of its terrors, and our emigrants may really, in being saved from that *great cause of death*, (*viz.*, the swamping alongside,) hope to reach their destination with all their worldly treasures, at greatly diminished risk.

Firm as my opinion may be of the value of my invention, to intrude such strong assertions, without some guarantee, upon the British public, would savour of presumption. I beg, therefore, to state, that I have laid everything open, confidentially, to the scrutiny of a British Admiral, one who served under Nelson, (and whose name and address I enclose,) and am allowed by him to give his unqualified approval of the whole, and to state emphatically that my invention seems to him to embody "*all the desiderata of the boat question.*" Other old experienced naval officers have also seen the model, as also have some of the highest and most reputed merchant captains, as well as captains of steamers; and all give their unqualified approval, and would recommend its use and adoption.

I have further to add, that the "mathematical principle" referred to is applicable to all operations where cables, hawsers, ropes, lines, or even thread, are used. Also to docks, wharfs, warehouses, mines, manufactories, capstans, pier-heads, &c, and has a very wide range of usefulness; which, as soon as the requisite patents are secured, will be brought forward.

S. M. SANDY.

NAUTICAL NOTICES.

To the Editor of the Nautical Magazine, London.

Melbourne, Port Philip, Dec. 31st, 1852.

Dear Sir,—I take the liberty of forwarding you the accompanying rough sketch of Porto Praya Bay, with the appearance of the S.E. point of St. Jago and adjacent hills, when approaching the harbour from the N.E., or the track of outward bound ships. I should not venture to do this had I not been forcibly struck with the inaccuracies published in the various books of directions concerning this very anciently frequented port, errors from which even the latest edition of Horsburgh's Directory is not exempt, for Praya Bay is there set forth as lying a considerable distance to the S.W. of the S.E. point of St. Jago, whereas it really lies to the N.W. of that point, and distant only $3\frac{1}{2}$ miles! Now, with due deference to their respective authors, I cannot help observing that in all the nautical works which have come under my notice there is nothing practically deducible as a general guide in approaching Praya Bay, for St. Katherine's Peaks, which are so frequently spoken of, are often obscured with clouds, and that for comparatively long periods at a time, when it is almost impossible for a stranger to distinguish St. Katharine's hill from another hill lying more easterly. The following simple directions I conceive to be always available: After making the island of St. Jago, (being outward bound,) steer to the S.W. till the south extreme of the land bears W.b.N., when the S.E. point will be distinctly in view, having Red Hill behind *upon the same bearing*; haul up then to the westward and pass the point about $\frac{1}{2}$ of a mile off; Quail Island (having a very black appearance) will then be seen to the N.W., steer up for the north end of it till you fairly open the bay, then luff up to about N.N.W. and anchor midway between Quail Island and the eastern shore of the bay, in seven fathoms, having Red Hill just open to the northward of the Island,—vide sketch. Hoping these remarks may be found useful,

I remain, &c.,

CHAS. JAS. PERRY,

Master Mariner and Cabin Passenger per barque *Ameer*.

[We do not agree with our correspondent in this, which he designates the S.E. point of St. Jago, but consider it to be that which forms the eastern point of Praya Bay. And we can only consider Horsburgh to be in error in saying "a considerable distance," while the town of Praya is not two miles N.W. from this point, according to a survey by Lieut. Dickenson, of the Royal Engineers, in 1812. Our correspondent calls this distance $3\frac{1}{2}$ miles. Will he inform us how he determined it.—ED]

To the Editor of the Nautical Magazine.

Sir,—I see by the papers that the *Agamemnon* is to be docked to have her keel increased "from nothing forward to twelve or fourteen inches abaft." Of course the rudder will be adjusted to meet this alteration. It is to be hoped that this addition to her keel will have the desired effect; I am inclined, however, to the belief that it will not. I shall watch for the report on the next trial with great interest.

I think it will be found that when under a press of sail, so as to give the ship considerable inclination, the water must be carried direct to the rudder instead of being allowed to rush through the large aperture between it and the main sternport. Should this prove to be the case, the shipwrights and engineers will have to put their heads together to effect some contrivance to meet this.

Let your readers picture to themselves a powerful ship, like the *Agamemnon*, under a press of sail with, perhaps, 8° or 10° inclination. The water,

rushing aft towards the rudder, is forced, with very much greater violence, through the aperture abaft, from the lee quarter than from the weather, and, in passing through, it overpowers and carries with it that which comes aft on the weather side, and, as the ship drags a certain amount of water after her, the power of the rudder is very considerably diminished.

I am, &c.,

Master Mariner.

Reading Rooms, Portsmouth, July 20th, 1853.

LIGHTS AT THE ENTRANCE OF MANILA BAY, PHILIPPINE ISLANDS.—[No. 137.]—Her Majesty's Government has been officially informed of the establishment, on the 1st of February last, of two lights in the Entrance of Manila Bay. The first is a Revolving Light, eclipsed every minute, in $14^{\circ} 23' 5''$ N., and $120^{\circ} 33' 56''$ E. of Greenwich: it stands on the summit of Corregidor Island, at an elevation of 648 feet above the level of the sea, and the Spanish account adds, that it is visible at the distance of 40 miles. It bears from the Monja Rock North 86° East.

The second is a Fixed Light, and placed on the small steep Island of Caballo, at an elevation of 417 feet above the sea, about two miles to the eastward of Corregidor. This Light can be seen but 9 miles, and only when it bears to the northward of East or West; so that a vessel having entered the bay, will lose sight of it as soon as she has passed Caballo Island, and will have to rely on the great Light of Corregidor to guide her to the anchorage off Manila.

Frailé Island is $3\frac{1}{2}$ miles from Caballo, the Light on which is useful in dark nights to Ships passing between them; but none of these Islands should be approached within half a mile as the current is strong.

NEW BOOKS.

THE AUSTRALIAN.—*Practical Hints to Intending Emigrants.* By William Crelin, Esq., Passenger in the Australian in June, 1852.

This little brochure is well calculated to accomplish its object, that of placing in the hands of emigrants the experience of an emigrant to the same quarter of the world as that to which he is destined. The incidents of the voyage confirm the advice as to various arrangements about comfort, &c.; then the mishaps, and how philosophically they should be met, from the effects of shipping seas, breaking down of the engine, crew striking for wages as they reached the vicinity of the diggings, and then what was seen there. For all this information the intending emigrant will do well to look into the "Practical Hints" afforded by the Australian, and avail himself of them to avoid the contre-temps which he is tolerably sure to meet with if he can.

GOLDEN HINTS FOR YOUNG MARINERS. By Captain James Sedgwick, Author of the *Principles of the "Law of Storms."*

Captain Sedgwick very justly observes, "when in doubt or difficulty, sailing directions are pored over by the hour together, why may not practical hints be found equally useful to the man who gets his vessel ashore, has a fire on board, or, in short, meets with any calamity?" This is a very reasonable question, and we believe as in most cases "prevention is better than cure," the practical hints which he would find in Captain Sedgwick's pages would prove to be "golden ones." The practical experience which the author has attained in a lifetime devoted to the merchant service at sea, he here offers to the junior officers of that service, and classes his "hints" into those "for the hour of danger," those on "seamanship," and those on "navigation." There

is ample material in each of these subjects, severally and separately, for long and useful discussion; and with this view there are many who may profit by them. It is satisfactory to find among the "hints on navigation," that the important subject of "local attraction" on the compass receives its due consideration, one which among our merchant shipping is not yet remembered as indispensable.

NARRATION OF THE VOYAGE OF H.M.S. "HERALD,"—Capt. Kellett.

The following table of dates of the arrival and sailing of the *Herald*, in continuation of the notice in our May number, will be useful for reference in our future notices of the voyage. It will be seen that in the spring of 1848 her surveying proceedings were completely interrupted at Flamenco when she sailed for Behring Strait arriving there in September and leaving there in the same month. The *Herald* was commissioned on the 11th of February, 1845, at Plymouth, and paid off at Chatham on the 16th of June, 1851.

Place.	Arrived.	Sailed.	Place.	Arrived.	Sailed.
1845			1848		
Sheerness . . .		26 May	B. Honda . . .		20 Apr.
Nore	26 May	6 June	Flamenco I. . .	24 April	9 May
Downs	6 June	7 June	Petro Paulski . .	6 Aug.	16 Aug.
Plymouth	11 June	26 June	Behring Isle . .	2 Sept.	4 Sept.
Tenerife	13 July	15 July	Chamisso	14 Sept.	29 Sept.
Rio Janeiro . . .	18 Aug.	28 Aug.	Awatska	15 Oct.	21 Oct.
Stanley H.	19 Sept.	30 Sept.	Mazatlan	24 Nov.	4 Dec.
Valparaiso	14 Nov.	4 Dec.	1849		
Papudo	4 Dec.	7 Dec.	Flamenco	19 Jan.	
Callao	17 Dec.	24 Dec.	Burica		19 Mar.
St. Clara	31 Dec.	1 Jan.	Woahoo	8 May	19 May
1846			Awatska	23 June	25 June
Galapagos	7 Jan.	11 Jan.	Chamisso	15 July	18 July
Chatham I.	11 Jan.	14 Jan.	Wainwright I. . .	31 July	2 Aug.
P. Galera	22 Jan.	28 Jan.	P. Clarence	23 Aug.	24 Aug.
Gorgon Isd. . . .	30 Jan.	16 Mar.	Chamisso	1 Sept.	29 Sept.
Panama	25 Mar.	16 Apr.	Mazatlan	12 Nov.	2 Dec.
Nootka	25 June	9 Sept.	San Jose	8 Dec.	15 Dec.
San Francisco . .	17 Sept.	22 Sept.	Guaymas	25 Dec.	8 Feb.
Coronados I. . . .	2 Oct.	9 Oct.	1850		
C. Collnett	11 Oct.	12 Oct.	Mondego	9 Feb.	26 Feb.
P. St Quintin . . .	14 Oct.	24 Oct.	Salina	28 Feb.	
Cedros	25 Oct.	31 Oct.	San Jose	15 Mar.	19 Mar.
Magdalena	2 Nov.	9 Nov.	Mazatlan	22 Mar.	4 Apr.
Mazatlan	13 Nov.	21 Nov.	Oahu	5 May	24 May
San Blas	23 Nov.	27 Nov.	Chamisso	16 July	21 July
Isle Blanco	5 Dec.	14 Dec.	P. Clarence	4 Sept.	23 Sept.
Acapulco	16 Dec.	18 Dec.	Honolulu	16 Oct.	30 Oct.
1847			Hong Kong	1 Dec.	22 Dec.
Panama	17 Jan.	30 April	Singapore	30 Dec.	10 Jan.
Coiba	1 May	6 May	1851		
Port Mala	10 May	11 May	Simons Bay	6 Mar.	27 Mar.
Payta	3 June	5 June	St. Helena	8 Apr.	12 Apr.
Callao	28 June	23 July	Ascension	17 Apr.	20 Apr.
Payta	27 July	29 July	Spithead	6 June	
Guayaquil	31 July				

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

SEPTEMBER, 1853.

PROCEEDINGS OF H.M.S. "CALLIOPE" AMONGST THE SOUTH SEA ISLANDS.—*Captain Sir Everard Home, Bart.*

The *Calliope* left Cascade Bay on the 30th July, and on the 4th of August made the Minerva Shoal, which by observation is in lat. $23^{\circ} 41' 20''$ S., and long. $178^{\circ} 48' 45''$ W.; an extensive reef upon which the sea breaks heavily. On the 6th the ship was off Pylstarts Island, and was visited by several canoes, bringing off things to barter: and on the 9th anchored off Nukualofa, Tongataboo.

The King, Josiah Tuboo, who governed the Friendly Island Group when I last visited Tongataboo in 1844, was dead, and George Taufahau, who at that time was king or principal chief of Vavao, had succeeded him as King of Tongataboo. The Chief Lavaka, whose father at that time held the Bea Fort in rebellion, held it still against George Tuboo, who, I found, had taken measures to subdue him, by building five fortresses round the Bea at short distances from each other, cutting him off from all supplies: his object was to save life, and to obtain possession of the fortress without violence. He sent me word that he would receive me at his camp before the Bea Fort on the following morning. On the 10th I landed and proceeded to the Bea, accompanied by some of the Officers. We were received at the entrance of the stockade by the men drawn up in two ranks, armed and painted for war; there were not less than four thousand men, the greater number having muskets and cartouch boxes filled with ammunition, all in most excel-

lent order; the rest had spears and clubs and other weapons. These were but a portion of his whole force, the rest being left at the different stockades: his whole force, as near as could be ascertained, was not less than five thousand three hundred fighting men; being from Vavao twelve hundred, from Hapaii fifteen hundred, from Wallis Island one hundred, from Eaoa or Keppels Island sixty, and twelve hundred and seventy from the different stations in Tongataboo. The ranks of natives through which we passed extended two hundred paces, when we reached the brow of a hill, at the foot of which, under the shade of a spreading banyan tree, the King was seated on the ground; his family were near him, and the principal chiefs formed a semicircle on each side of him: the main body of his men were on each side of the hillock, leaving a clear space or amphitheatre in the centre before the place where the King sat. He rose to receive me, and placed me by his side. He was dressed in the native fashion, having several yards of native cloth round his loins, and wearing a white shirt. After remaining silent a short time, he asked me if I should like to see his men; and immediately opposite parties came out and commenced a war dance not very unlike that of New Zealand, and then engaged in sham fight, showing all the native feats of skill, activity, and precaution, each tribe showing separately their different modes of warfare: they were painted red and black, and wore white tapa or native cloth upon their heads, tied on with bark stained red. Their appearance was frightfully savage, and their shouts and yells must have been heard within the Bea Fort. Neither the King nor any of the Chiefs, was painted or disguised. When this was over, I accompanied the King Tuboo to one of his nearest camps: it was that of his people of Vavao, strongly stockaded and very neatly kept. Close to the entrance was his own house, which he invited us to enter. The three Missionaries, Messrs. Adams, Daniels, and Amos, were with us, and acted as interpreters.

In a short time we returned to Nukualofa, Tuboo accompanying us. We dined with the Missionary, Mr. Adams, soon after which the King expressed a strong desire to speak to me privately. We retired to Mr. Adams' library, when he explained, through that gentleman, the other two being present, that his great fear was, that in the event of an attack upon the fort any accident should befall the Roman Catholic priests, natives of France, who resided there; wanting my advice how to act. He had no desire to storm the place, for if he did he knew the slaughter would be dreadful, as nothing would be spared: and he felt convinced that if the two clergymen who resided there would leave the place, the Chief Lavaka would submit. He also wished to know how he ought to act in the event of a French force coming upon him for recompense, should any thing befall the two clergymen in the attack about to be made by him upon the Bea Fort.

I advised him that in a war against his own subjects in rebellion against him, the priests could have nothing to do; but on no account to make an attack upon the fort without giving them warning to leave the place. This he assured me he had done three different times, and

that they had refused to attend to it. I desired him to do so again; but I begged that he would on no account make the presence of the *Calliope* at Tonga the reason for attacking the Fort. He informed me that to save life he had hemmed in the Bea Fort on every side; that they had water, but he allowed no person to leave the place; he allowed some provisions to be carried in, for he did not wish to starve them: the numbers in the fort were less than five hundred men. He asked me what he should do in the event of the arrival of any foreign force, which he could not resist, coming to demand satisfaction for supposed injuries, or to demand and take possession of his islands; whether he should resist or not? I advised him not to resist, but to submit; and to appeal to Great Britain through the Governor of New Zealand. He then asked me how he should act in case a foreign ship of war anchored off the Moea Fort, and sent her boats up to attack him? I told him, that if he was invaded by force of arms, he should resist with all his power: after which I returned on board.

The following morning I received a visit from M. Chevron, the French Missionary residing at Moea. I informed this gentleman that his brother priests had taken up their abode with a rebel; that they had been warned to leave the fort, and that they must take the consequences of whatever might happen to themselves when the attack was made. M. Chevron said, that they did not know who was king, or if there was any king; there was the Chief of Bea, the Chief of Moea, (the Tue Tonga, who has lately embraced the Roman Catholic religion,) and the Chief of Nukualofa, and they believed them to be of equal authority. I informed him that the Chief of Nukualofa, George Tuboo, was universally acknowledged as the King of the Friendly Islands; that Josiah Tuboo his predecessor had offered the sovereignty of the islands to Queen Victoria that they might enjoy the protection of Her Majesty; but the offer had been refused in a letter addressed to George Tuboo from the Secretary of State by the Queen's command. Had Tuboo been only one chief among several, he could have offered only his own portion to Great Britain, or acted in concert with the rest; but the act was entirely his own: and he has also been acknowledged King of the Friendly Islands by other nations; and that I should write to the clergymen in the Bea to warn them of the danger they incurred by remaining under the protection of a chief in open rebellion against his lawful sovereign. M. Chevron took his leave, assuring me that he would go to the fort and do his best to advise the priests to leave it.

On the 13th I visited the Tue Tonga at the Moea, and found him much broken since I saw him last in 1844; he will be the last of that race, as there is no person qualified by birth to succeed him.

On the 15th Mr. Heath, Mate, returned in the pinnace, having made a very useful survey of the reefs and coast, which he commenced on the 10th. I received a letter from M. Chevron on the same day, in which he begs me to use my influence to make a peace. On the receipt of which, seeing that an opening could be made, I immediately wrote to the King. When M. Chevron informed the King that the

chief and others in the *Bea* would submit upon condition that no lives should be taken, or acts of violence committed upon any person. He replied, that they had begun late to use their influence to procure a peace; but that the *Tonga* people began the war, and the *Tonga* people must conclude it; and that he would hear of no conditions, they must trust to him.

The next day was Sunday, and a good deal of firing was heard from the *Bea* Fort. On the following morning George Tuboo summoned the Chief *Lavaka* to surrender the fortress into his hands, which he did a little after noon, coming out with all his followers wearing green evey leaf round their necks, in token of submission, and the king immediately took possession of the place. As soon as they had submitted, some of the chiefs were desired to take their proper places whilst the *Kava* was preparing: others were ordered to go and sit amongst the people. Those chiefs who had partaken of the *kava*, were considered to be safe, for the king had not said what he intended to do to any one. Upon such occasions it is usual, whilst the *kava* is preparing, for the chief to make a sign to his attendants to attack those who have not been called to drink the *kava*, and who it is his intention to kill, which is done in a barbarous manner, breaking their teeth with clubs, thrusting bayonets and spears into them, and doing anything short of causing immediate death, which they are left to meet or rather to be overtaken by.

I did not think it proper to be present or to visit the *Bea* that day, but on the next day, the 17th, I found the king in the *Bea* Fort, using every exertion in his power to save the ornaments from the Roman Catholic Chapel, and the property of the priests. Fire had been set to the stockade, the place was given up to plunder, and was to be entirely destroyed, and the ground is to be cultivated; but their property was to be preserved. I visited the two clergymen in their house, where they sat without making the slightest exertion to save anything. Natives of their own religion were ordered to carry out their things to be conveyed by water to the *Moa*; but they were not inclined to do it, and the king's own people removed them and they were sent in one of the king's canoes to the *Moa*, where they now remain. Sentries armed with muskets and bayonets were immediately planted in and outside their house to prevent injury. There was a scene of great confusion, and the fire quickly spread amongst the dry thatch and timber. The place was very strong, and has been held for many years in rebellion against the king's authority; and to his honour no act of violence of any sort was committed upon any of the people, for it is the first instance of such clemency having been shown in any of the island warfare. I congratulated the king upon his success.

At *Tongataboo* I had been informed that a volcano, or the indications of one, had been perceived about half way between the Islands of *Roa* and *Lette*; and about twelve months ago smoke had been seen issuing from the surface of the sea: this was an object of search, and it was made but without success. On the morning of the 25th the *Calliope* arrived at Port Refuge, *Vavau*; no canoes were to be seen,

but on advancing to the anchorage vast crowds of natives were seen upon the bank under the trees near the landing place; and we were informed that King George had arrived the evening before and was holding an assembly of the natives; he had given me no sort of intimation of his intention to visit this part of his dominions. He came to thank his people for having put their lives into his hands. He brought two hundred men with him in his canoe, and upon the 27th and 28th, seven canoes arrived from Tongataboo, each bringing from the war a hundred and forty to twenty men. They were painted and in their war dress, singing and dancing war dances upon the deck as they paddled or sailed up the harbour.

On the 1st of September the king held a feast, called the "Enache," which consists in a voluntary contribution from every person of something which is given to the king. King George sat upon the ground in the centre of the open space or door way which is upon one side of his house; he sat just within the roof, his principal men upon his right hand, and four spokesmen, two on each side of him. In front was an open grass plat of considerable extent, round which sat about two thousand persons, forming a semicircle extending on each side from the house in which the king sat, and which formed the centre of the semicircle. The Missionaries with their wives, the Europeans and Officers of the ship, were in the house. The ceremony began by men entering the circle, each carrying yams, which were piled in one heap by themselves; after which, a procession of all the young women of the island, headed by her of the highest rank, came forward singly, each bearing a gift; the first was a large piece of native cloth, which she threw down before the king, retired and sat down; she was closely followed by others variously dressed, each wearing an abundance of native cloth about the waist, extending to a train, their heads powdered with dust of sandalwood, and garlands of green leaves and flowers round their necks and heads, which being all of them odoriferous perfumed the air; the things they brought were mats of various sorts, tortoise-shell, bottles containing cocoa-nut oil, calico, native cloth, whales' teeth, poultry, fish-hooks, and those who had nothing threw down the garlands which they wore; the spokesmen calling out thanks for their presents. The advance of the procession and the retirement of the person, after she had laid down her present before the king in an easy but most respectful manner, was a most remarkable and pleasing sight. Neither state nor ceremony was wanting, and the native simplicity and evident pride in doing homage where it was so richly due, created real respect for all. When the offerings were all deposited, a principal woman sat down at some short distance from the king, and in the name of the rest congratulated him upon the termination of the war, and thanked him for the care he took of them. The children of the schools, about a hundred and fifty, then came forward with their teachers, and, after singing short sentences in English, and moving about in different directions over the enclosed space, the marines and a party of seamen were exercised, and fired a feu de joie, which gave great satisfaction. When this was over, the contributions were divided into three separate

heaps and delivered to the Chiefs of Vavau, Hapaii, and Tongataboo, to be by them distributed to the people who had taken part in the war, the king reserving nothing whatever for himself, but sat throughout the whole ceremony without moving or expressing the slightest change of countenance. When this was done, he immediately commenced preparations for his departure for Hapaii, and sailed that evening.

During the ship's stay at Vavau, Mr. Heath, Mate, was most usefully employed in making a survey of the various reefs and islands of the group; and Mr. Ayley, Master's Assistant, succeeded in diving into a remarkable cave, mentioned by Mr. Mariner in his work upon the Tonga Islands, Mr. Ayley's account of which is here transmitted. I have been assured by the principal natives, that although some persons from the ships of all nations which have arrived at Vavau have attempted to enter it, Mr. Ayley is the first white man who has succeeded.

"Captain Sir Everard Home, with two boats, went to visit a cave, an account of which is in Mariner's *Tonga Islands*, p. 267; we had a native in each boat, sent as guides by King George Tuboo. On our way down the harbour we met a canoe with four natives.

"When we arrived at the cave, which is in the Island of Nualapu, about four and a half miles from the anchorage, we found the canoe waiting for us, but could not see any entrance until we were shown a small patch of dark blue water by the side of a cliff. The native in the boat with the Captain, named Simon, (a Mataboole or minor chief,) jumped overboard and swam to a ledge of rocks at the side of the entrance, taking with him a small rope, one end made fast round his wrist, leaving the rest in the hands of another native; he then jumped off the ledge into the water, and soon disappeared under the rocks, while the other native paid the line out to him, until he found it checked, and felt a smart pull from the inside, to let him know that all was right; the line was made fast inside, and a canvas bag and hammer sent in for specimens; it was then hauled taut from the outside, and marked to find the extent of the passage required to be dived through to get inside, and the natives dived out again; we found by the marks on the line that the passage was six fathoms in length. Several of our boat's crew tried to get in, but owing to the swell setting them up against the rock, were forced to come out again with scratched backs and without accomplishing their object. I had a great wish to see this wonderful place, and being determined to make a trial, told some of the natives that if one or two would go in before and another after me, I would attempt it. Accordingly three jumped overboard, I followed them, and one came after me. When about half way through, the swell set me up against the upper part and projecting rocks; I immediately struck downwards, and did not meet with any other obstruction. When I could see no rocks above me, I concluded that I was inside, and rose to the surface, when I found myself in a large magnificent cave, about 40 feet in height, 120 feet long at the bottom, 180 feet long at the top, and about 70 feet in breadth. I did not see any of the natives until I got inside, where I found them waiting for

me; we swam to the head of the cave, and landed on some rocks projecting from the side of numerous craggy rocks, which we climbed with much difficulty, and sat ourselves down in a smooth oval basin, large enough to hold six or eight persons. I could not see any hole to admit light or air; when the swell rose I felt a pressure on my chest and ears, and the cave was filled with a blue vapour; as the swell receded the cave became perfectly clear, and I was relieved from the inconvenient pressure. I could not find any fresh water, and the only light admitted is through the water in the passage, which casts a bright blue hue over the rocks and stalactites, which are hanging from the top in great numbers. At the bottom of the cave is an oval pond of water, with rocks at each side descending perpendicularly into it; the pond is about 8 fathoms deep. I remained inside about twenty minutes, then dived out again and swam to the boat."

Estimated population of the Friendly Islands, subject to King George: Tongataboo, about 7,500; Hapaii, 4,000; Vavao, Group of Islands, 4,500; Island of Eua, 300; Nuatobotabo or Keppels Island, 700; Nuafoou, 1,200. Total 18,200.

On the 2nd of September we sailed for the Navigators Islands, and arrived at Apia, Island of Upolu, on the 5th, having communicated with the west end of the Island of Tutuilla on the previous evening. On my arrival, I was waited upon by George Pritchard, Esq., H.M. Consul in the South Seas, who made numerous complaints of depredations committed against himself and other white inhabitants. Their property was stolen and houses which were left unoccupied or unguarded were stripped of their weather boarding and plundered of their contents; horses which strayed about the country injured the breadfruit and banana trees and the natives shot or speared them.

On the 7th, accompanied by Mr. Pritchard, I went to the Chief Mata at his village, and having explained to him the object of my visit, he declared that he and his people acknowledged no Consul, that they wanted none, that he was of a different religion to them, (they being Wesleyans,) that he could not be answerable for what others did, but for his own acts and those of his people he was ready to answer and to pay for. There are three principal Chiefs of the Island, independent of each other, Mata, Asi, and Ama. I explained to Mata that a Consul was there at all events and that it was intended that he should protect him; that he was placed there for his protection against the aggressions of the white men who might be disposed to ill-treat the natives, as well as to protect the Europeans against any ill-treatment of the natives; to see fair conduct in trading on both sides; but principally to settle differences between the crews of European vessels, with which he (Mata) had nothing to do. We took our leave of him, and Mr. Pritchard desired that as he had offered to pay the damage done if required, no further notice should be taken upon the present occasion, and, on the 9th, I answered the letter which I had received from Mr. Pritchard, and, at the same time, sent a letter to the Chief Mata. The Chief Mata and the people whom I saw are

under no control; they call themselves Christians, but I believe that they are Pagans every one.

From all that I could observe, Apia is, from some cause, in a much less civilized state than it was when I last visited the Island, in 1844. The place called the Consulate is of a description quite unfit for a respectable Englishman to live in, or for the English flag to fly in front of. Although the sale of spirits is contrary to the law of Samoa established by the Chiefs, yet of the few houses which compose the town of Apia, I have reason to believe that nearly every one of them deals in that article. No vigilance could keep the people sober who were engaged in watering, and the contrast of natives governed by a King with those who have independent Chiefs to rule them is most strong.

Having completed our water, the *Calliope* sailed, on the 10th of September, for the Fejee Group of Islands, and on the 14th made Turtle Island; the wind being from the E.S.E. and S.E., fresh breezes and the weather generally fine; passed the Islands of Totoia and Matuku, which are large and apparently very fertile. On the morning of the 17th the Mombolithe Reef was seen breaking, and its position was determined as lat. $18^{\circ} 16' S.$, long. $179^{\circ} 26' E.$, (by American expedition long. $179^{\circ} 23' E.$,) having done which the ship passed westward of Angau Island, which has an extensive reef breaking upon its south and south-western sides. Angau is like the other islands which we had seen; it is high and exceedingly irregular on its surface, the ridges are clear of timber but it appeared to be plentiful in the gullies. The land of Ovolau is high and well timbered; the reef was entered by a passage a cable's length in width, and in the afternoon of the 17th anchored off Levuka, the principal town on that island, where we found two Missionaries, Mr. Waterhouse and Mr. Benner. Levuka is governed by a petty Chief called the Tue Levuka or King. Found here, at anchor, the American barques *John Millay* and the *Pilot*. John Williams, Esq., the American Consular Agent, was also at this place about to sail for the collection of biche-le-mer. Besides the Missionaries the most respectable white inhabitant is Mr. David Whippy, the American Mercantile Agent, who, having resided for twenty five years amongst the natives in Fejee, is perfectly acquainted with their customs, and from his honest, upright conduct during that period is highly respected by all parties. From Mr. Whippy and all others with whom I have conversed, I was informed that the Fejees were never in a worse state than at the present time; that there can be no exaggeration in anything we hear about them; their abominable habits cannot be exaggerated; their brutal conduct to their women and in all other respects we may form imaginations but they will be far short of the truth. Tue Vete, the principal Chief of the Fejees, is at war with his near relation Ratungarra, which has lasted twelve years; the cause of it they do not know; the object is to see which can get the upper hand. The people are tired of it and many are leaving Tue Vete and strengthening the Chief of Rewa that

an end may be put to it, and he has now the advantage. The Chiefs are both Pagan but have always declared that ultimately they shall become Christian. Tanoa, the father of Thakombou or Tue Vete, is still alive; he lives because there is no Chief of sufficient rank to strangle him, as it is their custom to destroy the aged.

The Islands, in extent and value, far exceeded my expectations. Upon the two large islands there is, I am informed, timber in great abundance and of very large size. One species of pine, called by the natives Ndukua is the same as the Kauri pine of New Zealand, and is to be found thirty feet in girth. The inhabitants appear to be divided into three sects; those who reside in towns upon the coasts and low lands; the mountaineers, who are the most numerous class, governed by their own Chiefs independent of all others and have never been subdued, and the fishermen, who are the thieves and butchers of the Chiefs, who are entirely arbitrary, being supplied with food of all descriptions by the minor Chiefs as tribute, and as a right taking whatever they please from those beneath them. M'Bou is the capital; it stands upon an island, two miles in circumference, close to the mainland; it is a small and crowded very dirty village, containing about four thousand inhabitants, of which one fourth are fighting men; but, in the event of attack, two thousand men could be brought into the field in a very short space of time. At a distance of two miles is the small island of Vewa; the independent Chief of which is called Verani, and has been baptized Elijah, and, from having been the companion of Tue Vete, his procurer of men to eat and the terror of the country is now a sincere Christian. The Island of Vewa is the Mission Station. No foreigners are allowed to reside upon M'Bou, but the Missionaries are allowed to preach there; many want to hear them but they are restrained and sent away if at any time their congregation is near one hundred, the older men fearing that too many may embrace the new religion. There are upon Ovolou about fifty white inhabitants, English and Americans; their numbers are fast increasing, leaving whalers by discharge or desertion. They are employed in collecting beche-le-mer; Levuka is visited by four or five vessels in the course of the year, brigs and barques, to receive it. The harbour is filled with boats of European build and rig. Wood for firing is to be obtained by purchase from the Chief and water is abundant, flowing in two streams, one on each side of the village.

Shortly after my arrival at Ovolau, I was informed by Mr. Waterhouse, the Missionary there, that there were two pirates upon one of the neighbouring Islands; upon inquiring further, I learnt that there were two men upon the Island of Moalo who were believed to be suspicious characters, and Samuel, the late King of Fortuna or Horne Island, arriving at the time confirmed the suspicion, as upon reading to him the descriptions of the persons who had piratically seized the schooner *Helen* of Sydney, in November 1849; he informed me that two of them were upon the Island of Moala. The wind not allowing the ship to pass out through the reefs the water was completed, and having

accidentally met with the son of Tue Vete, a boy of thirteen years of age, who was on a visit to Levuka, he asked me to allow him to go in the ship to M'Bou, to which place he had been told we were going, which was granted. I then requested Mr. Whippy to accompany me to Moala; for which island we sailed on the morning of the 23rd of September and arrived on the 25th. By the assistance of Mr. Whippy I was so fortunate as to secure the persons for whom I went; and having sailed from that Island upon the 29th arrived at Vewa the following day, where I was immediately waited upon by the Revs. Messrs. Calvert and Watsford, who on the following day accompanied me to M'Bou with several officers of the ship. We first visited the great Chief Tanoa, the father of Tue Vete, a man in extreme old age, sitting up warmed by a large fire at his back; he did not speak or appear to notice anybody. Leaving him we next visited his son, the ruling Chief, call Tue Vete or Thakembou, a man about thirty-two years of age, who received us in his own house. Several Chiefs and others were in the body of the house; his principal wife was there and their son Nilatikau, the heir to his dominions, a boy of thirteen years old who had accompanied the ship to Moala. The wall of the house was fitted as a rack for muskets and cartouch boxes. A naked sword hung from the pillar of the house behind his back, and in his hand he held a dagger with which he played whilst talking. Through the interpretation of Mr. Calvert, witnessed by Mr. Whippy, I told him that it was highly desirable that peace should be made between himself and the Chief of Rewa; that the wars in Fejee, carried on in the savage way in which they were, were without example in the world; that they had the opportunity of seeing the advantages of Christianity, and that it would be greatly to their benefit, by the increase of trade which would follow, if Christianity was encouraged and established by him, so that the productions of the fine Islands of Fejees could be made known and the Islands explored, for they contained much more valuable treasures than beche-le-mer and tortoise-shell. He at first appeared inclined to resist all reasoning, but soon became attentive; he said that he only wished the war to cease, when that was over he would lootoo or be baptized. I asked him if he had any objection to his son Nilatikou being baptized; the boy, who was present, said that he had lootooed when he attended Divine Service on board the *Calliope*, and his father declared that the boy should be christened whenever Mr. Calvert thought fit to do so. I informed him that Great Britain took a warm interest in the welfare and advancement in civilization of the Islands in the Pacific, and much more so for the Fejees, who were, from their abominable customs, the scorn and pity of all the civilized world; that the practice of eating men was so frightful that people in Europe would not believe it true; the strangling of the wives upon the death of the husband was another thing which rendered his countrymen odious in the opinion of the world; and the habit of killing a man whenever the mast was struck upon a large canoe coming into port and upon the joining of the parts together in completing the

construction of a new one, were as barbarous as they were absurd. He replied that he could not say that the canoe sailed better for the death of the man on that occasion, but it was a Fejee custom, and that upon the death of his father he should strangle five of his wives. I advised him not to overload himself with crime but to send ten women to Mr. Calvert, to be brought up in the Christian religion; to build a house at M'Bou for one of the Missionaries; to learn to read himself and to have his son taught also. He remarked that it was extraordinary the regard the white men had for them, for all who came to see him had the same object, only to do them good; and he knew that they lived in darkness and that none could do the wonderful things which the white men did unless they had a true God to direct them, which they of Fejee had not. With respect to the war with Rewa, he was most anxious for peace, and was very desirous that, if possible, I should bring it about. I therefore determined to visit that place, and Mr. Calvert was desirous of accompanying me.

The state of society in Fejee is frightful. No man moves out for any cause whatever without his club. The person who acts as Governor of M'Bou has his oven for cooking men before the door of his house, which I saw, and he eats nothing else when he can get them. There is a large house appropriated for the accommodation of strangers, at the back of which is another oven, and the bark upon the stem and branches of an old tree near it is nearly covered with deep notches, each registering the baking of a human being; some remains of the body being hung to the branches; there were none remaining, but the sinnet by which they had been suspended was still there. I have been thus particular to show that every exertion of Christian and humane nations is required to turn these people (who are as capable of humanity as any other amongst the Islands) from the habits which they now follow. Burying alive is by no means uncommon; baking alive; cutting off the hands and feet and cooking and eating them before the eyes of the prisoner; exposing women, upon suspicion of various offences, to punishment too shocking to mention, and afterwards clubbing them to death and eating them; but I have gone, I believe, quite far enough to show that every exertion is required to change the habits of these people and to render them and their Islands commonly useful to society.

On the 5th of October, in the hope of making peace between the Chiefs Tue Vcte and Ratungarra, I left the anchorage off Vewa, and on the 6th, in the forenoon, anchored off Rewa. The Chief was at some distance up the river above that town preparing to attack N'dalli, a town belonging to M'Bou. I went up, accompanied by Mr. Calvert and several of the officers, to a place called Tonga. Ratungarra, the Chief, was sent for to come to me. He was found holding a council with other Chiefs, and about eight hundred men armed and prepared for war; he came immediately, and I took him into my boat, with another principal Chief and Mr. Calvert, and having put off from the shore, I told him the object of my visit. Ratungarra declared that he

had asked for pardon and for peace from Thakambou fourteen times, which he had always refused to grant. He considers this the greater grievance because the Captains of the English and American Navies have, with Mr. Calvert, all interceded for him without effect. He feels now that he is gaining the advantage over his enemy, and remembers with strong feelings the murder of his brother, the former Chief of Rewa, who was killed by the hands of Thakembou, also the loss of his three children, who were killed when Rewa was destroyed, some time before, at the age of six, eight, and ten years, and he declares that he will never make peace until he has killed and eaten Thakembou. The Chief accompanied me down the river to the town of Rewa, where we parted.

Two days previous to this, a prisoner who had been wounded was brought into Rewa, where he was secured to a tree; his long hair and beard were set fire to and burnt off; the women mutilated his body; after which he was made to walk to the river, where he was at last shot to death, and was cut up. I saw the oven of stones in which he had been baked with the embers and banana leaves, which had wrapped up the parts, strewed about. Another body was brought in and cooked the following day.

Calms and light south-easterly winds prevented us from getting out through the reefs until the 12th, and the day following I arrived at Ovoulau, where the water was completed.

(To be continued.)

PUERTO VIEJO, SAN DOMINGO.—On entering from leeward keep close to a remarkable white cliff, which forms the south-western point of the great entrance, and where there are 9, 8, 7, 5 fathoms water, until you have passed that point. The passage to the inner port or Boca Corillo is between this point and a reef which lies nearly west from the great entrance. Keep the mid-channel between the northern cliffy shore and the south side of this reef. The water shallows gradually to three fathoms. Let go your anchor at four fathoms, the reef bearing north.

The eastern anchorage is exposed to the south-east wind. You may anchor in three fathoms, south of the loading place, the high mountain Martin Garcia bearing south-west.

As already observed, in my former remarks, the anchorage of Boca Corillo of Puerto Viejo leaves nothing to desire for small vessels that require no more than two or three fathoms water.—*Extract of a letter from Sir R. Schomburgk.*

CHINESE EXTRACTS.

(Continued from page 419.)

When all who had buttons to lose, from Governor Ching downward, were most dismayed by the contumacy of the pirates, a riot occurred respecting the salt monopoly, which was so extensive and formidable, that it might be termed an insurrection. The revenue arising from the salt *gabelle* is so great as to endear this form of taxation to all in power; but to the people it is peculiarly obnoxious, not only because it materially enhances the cost of an article essential to their existence, but on account of the great abuses attending its exaction. A Salt Commissioner at the provincial capital commits the collection of this tax to contractors, amongst whom the whole province is partitioned. The salt contractors are generally capitalists, who have devoted themselves to this department of business, which requires peculiar qualifications, and which is of such a character that men of opulence seldom covet; the best informed natives can give no reliable information concerning the nature of the arrangement which they make with the commissioner. That the system is cumbrous, is evident from the disproportionate expense of collecting the tax compared either with the original cost of the article or with the amount that reaches the imperial treasury. At the salt works, only a few miles distant from Ningpo, it is produced at from four to five cash per catty, whilst it cannot be purchased from licensed dealers for less than eighteen cash, fifteen of which make one cent. Out of this large profit less than four cash falls to the government, the balance is retained by the contractor, whose expences are always great. The proximity of Ningpo to the salt pans renders an illicit traffic very facile; and it is only by keeping up a large establishment, and by extreme vigilance, that smuggling is repressed.

The salt works are under the inspection of petty officers, appointed by the salt commissioners, who levy a small tax on all that is consumed in the immediate neighbourhood. Thus those who purchase from the inspectors procure the commodity at less than half the price which is charged by the contractor to all who reside within his limits. A large district of country, having a dense population, and near the city of Ningpo, has enjoyed the privilege of dealing with the salt inspectors, and it is in consequence of long-continued efforts on the part of the contractor, encouraged and sustained by the authorities, to extend the monopolies to that place, that a series of riots extending over many years have occurred.

A contractor, the late Mr. Kiang, employed a large police force to repress the sale of salt brought directly from the works, which occasioned much discontent, and collisions became frequent between the police and the villagers. When any were discovered with salt in their possession which had not been purchased from the licensed pedlars, they were taken to the nearest of Mr. Kiang's salt shops, and tortured

until redeemed by large sums of money. In this manner every year witnessed the death of many poor people, who were tempted to engage in the private traffic by the profit which it yielded.

Mr. Kiang's licensed pedlars and his police at length carried oppression and insult so far, that six years ago the people rose and destroyed all his out stations, put some of his agents to death, wounded others, and scattered the rest. A year afterwards the attempt to introduce the monopoly into that quarter was again made with the aid of the civil and military authorities; but the people of each village organized themselves into bands, and under the direction of a bold man, named Tsiang, burnt down the new shops, and defied the Mandarins. Their success emboldened many to smuggle salt into the city, and in a short time the monopoly ceased to be profitable.

Mr. Kiang, who was an aged man, did not long survive the last disaster; he died impoverished, partly owing to that and partly to the unfortunate issue of a lawsuit. His sons attempted for a while to carry on the business, but were unsuccessful. Every effort was made by the authorities to place the *gabelle* on a firm footing, as their numerous proclamations in relation to it bear witness. One of these, issued by the Prefect, is mainly designed to suppress a practice which is common among the licensed pedlars, who, it seems, club together for raising the price of salt, which, says his worship, "is an evil of great magnitude, inasmuch as its consumption is thereby lessened,—both to the detriment of the revenue and the comforts of the people." He then details the trials and severe punishment of pedlars found guilty of this crime: and orders all pedlars to carry about their necks a tablet, indicating that they alone are permitted to sell salt, and the price which they shall charge.

In another, stringent prohibitions are issued against all who purchase from other than licensed dealers. And a third, denounces the adulteration of the article with ashes, dirt, nitre, and the like; and forbids dealings at the salt-pans by other than authorized persons under severe penalties. About this period the salt department throughout this and the adjacent province of Kiangou was in such confusion, that the imperial commissioner Keying was sent hither on a special mission to restore order. The impulse thus given was soon felt in what the authorities consider the "infected districts," east of Ningpo. Last year the monopoly was committed to an opulent merchant in one of the neighbouring cities, who, for security, was obliged to transfer his residence to Ningpo.

Crafty attempts were gradually made to bring the eastern villages within the monopoly limits. Until recently it was thought that the people would eventually consent; but a few weeks since the head of the last riot collected a few men, and led an attack upon some salt agents, whom they beat unmercifully, at the same time seizing a boat-load of salt. Orders were immediately given for the arrest of Tsiang, which, like previous ones of the same description, could not be carried into effect. Not long afterwards, however, whilst smoking and drinking in a liquor shop, he was set upon by a party of police and carried off in triumph

to prison. The capture was reported to the Governor, who expressed himself highly gratified: it was quickly reported to the people, too, who received the information very differently. The tocsin was instantly sounded. Messengers, beating gongs, were sent to every village, and a population of a hundred thousand was aroused to anger. After several conferences they resolved to demand the release of their champion, or, if they were denied, to effect it by force. This determination was well known, indeed two days before it was put in force a placard was posted up in public places summoning all who were "opposed to the establishment of salt shops, as well as to the imprisonment of Tsiang, to meet on the first day of the ensuing month (Feb. 21) in the forenoon, at the Great Parade Ground, there to await until the district magistrate came out to arrange matters."

On the morning appointed an immense concourse of country people crowded the parade ground, numbering, according to their own estimate, forty thousand, marshalled under small white flags, indicating their respective villages. Of these a large number came from compulsion; the leaders had threatened to burn every house which was not represented, and in some instances women appeared to answer for male members of the family, who were absent from home or otherwise detained.

It is not easy to understand how Chinamen manage their public meetings without the machinery of chairman, secretary, resolutions, and the like; but they are all dispensed with. When the meeting was organized, if that term be applicable, a deputation of aged men was sent to the Magistrate's Court to "reason with the city father." The delegates were not only denied admittance, but received rough usage from the guards. A report was soon spread among their constituents that the magistrate had inflicted corporal chastisement upon them; when forthwith they marched in a body to the yamun or court, drove away the guards, broke into the prison, released Tsiang, and then entered the apartments of his worship the Chehien, intending to subject him to Lynch law in his own office. But the "city father" had escaped, having fled for shelter in the Prefect's yamun. When they had done all the mischief they cared for in that place, they crossed the city, in admirable order, to the residence of Mr. Kiang, to execute their threat of burning his house. None who have visited Ningpo will forget the beautiful residence and remarkable flower-garden belonging to the family of the salt inspector. In the former were accumulated a great variety of curiosities and specimens of Chinese vertu; the latter exhibited the perfection of Chinese gardening, being adorned with rocks and grottoes, encircled by serpentine shady walks, and interspersed with pools of gold fish, and numerous grotesque objects.

This elegant residence was surrounded by the mob, who, after securing the person of the late contractor's brother, and allowing the rest of the family to depart empty-handed, set fire to the whole establishment. Whenever any thing was taken out except articles of food, they were seized and thrown into the flames. Curiosities, costly furniture, splendid dresses, and even silver, if found in the possession of

persons coming out, were treated in the same manner. The order which they observed, their cool determination to accomplish certain specific objects, was admirable, however deplorable the mode of exhibition. Had they not imposed a restraint upon themselves, and had they committed excesses, there still would have been much to extenuate their proceedings. Resistance to established authority is an unpardonable crime only in those who are in the possession of their political rights; but where suffrage is unknown, and where petitions are unheeded, resistance often becomes a duty, and is the only resource. If the charges which this model mob preferred against the authorities and salt monopolists are well founded, they are to be blamed rather for not offering earlier resistance, as continued submission to injuries is adapted to perpetuate wrong.

The Governor was aware of the riot, and sent a message to the Colonel in charge (the General having gone to intimidate the pirates) to collect the troops and disperse the mob. The latter declined compliance, except under written orders; on receiving which he mustered his force of "tax-eaters," as the Chinese naively call the military, and went through a formidable series of evolutions in a field about half a mile from the fire. These Chinese soldiers are, comparatively speaking, very innocent creatures—sheep in wolves' clothing—perfectly guiltless of harming any body except by fright. Peace societies would not be called for if these amiable traits characterised this profession in the West. Our Colonel, when he had been informed by his scouts that the fire was extinguished for want of fuel, and the mob had retired, marched to the scene of devastation, and—"made a thundering noise with gongs and guns." From thence he rode in a sedan at the head of his troops, marching them out at the Spiritual Bridge Gate, then back again into the city through the East Gate, up Broadway, and brought up in front of the Examination Hall, the temporary court of his excellency the Governor. These military proceedings gave entire satisfaction to that functionary, as indeed they did to the entire population,—“Least done soonest mended,” being a received maxim.

The mob had carried off Mr. Kiang, whom it was reported they had put to death. Those who were well acquainted with the Chinese, however, doubted the story; not that it was incredible in itself, but because, as a general rule in China, one should believe only the hundredth part of what he hears, and the half of what he sees. It soon became known that the prisoner was confined in the Stone Pool Temple; and after several days he was allowed to receive visits from his family. He was detained there several weeks, as long in fact as the peasantry chose to keep him; the authorities, though they had a large body of troops at their disposal, not only dispersed about the city, but in encampments without the walls, dared make no demonstration for his rescue. They were in a dilemma. Two members of the family of the rank of Keujin were on their way to the examinations at Peking, by whom the burning of the house, and the kidnapping of Mr. Kiang, would doubtless be reported to the imperial government. On the other hand, the sympathies of the whole city and of the military were

with the villagers, who could not be subdued without calling out the Manchu troops at Hangchau and Chapù, which would have been acknowledging that the province was in rebellion.

In this emergency recourse was had again to *hush money*, which, however, was hard to raise, so much being required to soothe the pirates and their imperial master. Negotiations were accordingly entered into with the insurgents for the release of their captive, and with the Kiang family for indemnification.

Whilst these were going on, the villagers issued a declaration of their wrongs as an apology for their proceedings. From which we shall make some extracts.

“Manifesto of the people of the Eastern part of Ningpo districts.— From the origin of the Empire to the present dynasty, there have been salt-pans and salt-furnaces at the sea-side, which have served above to enrich the national exchequer, and below to nourish the people. The virtuous government of the blessed dynasty had hitherto favoured us with immaculated rulers and equitable laws, thus manifesting abounding goodness and overflowing excellence.” The paper then goes on to state that—

“Years ago it was decided by the imperial government that the inhabitants of this district should enjoy the privilege of buying salt at the works, and next, that about fifty years ago Mr. Kiang gradually usurped the monopoly. He established salt shops, enlisted above a thousand armed rascals, who paraded yellow flags in every direction, and entered people’s houses, and when they found a little salt they made much of it, bullying, and making false accusations. If they merely discovered a handful the owners were dragged in chains to their shops, where they would hang them up by the queue, wrists, or thumbs, or beat them, till they extorted money, so far even as to make the sufferer part with his estate or sell his wife and children. When their prisoners were without money or friends, they would be either beaten to death or crushed to death between millstones. By-standers, who would interfere, would also receive stripes; and though their brothers were tortured to death, they could only commiserate them by weeping. Once a widow, who was found carrying a basket of salt, was taken by boat to the salt shop and violated by seven persons, extorting also from her several thousand cash. At another time a mother who had died and was laid out in the hall, and when the son was absent to purchase articles for the funeral, they entered, and finding a few pounds of salt, carried the coffin to their shop, and would not give it up until 30,000 cash were paid; meanwhile the corpse putrified and could hardly be coffined. There have been about eighty outrages of this description. Thousands and myriads of families have been angered how the chief of such mischief escape the visitation of Heaven. The sum of our injuries cannot be reckoned. Alas! alas! He violently scattered to the winds and rain the decaying bones of Mr. Wang, to make place for his own remains. He destroyed the only male survivor of the Ching family, thus cutting off ancestral offerings. By connecting himself with corrupt officers and vile policemen on the

one hand, and with a set of blackguards and ruffians on the other, he was able to insult and abuse without cessation. From the Prefect Le he could get proclamations issued of any kind, and was to him as fangs and claws. The anger of the people runs mountains, and the hatred of each one to this monopoly is as deep as the ocean. Has not every living soul of us got parents? Who of us has no brethren? When have they had merciful protection? In their slaughter how great has been their iniquity! Why! on account of these injured ones the very devils yell, and the gods (Kwai and Shin) roar again; while men's eyes are distressed and their hearts wounded at the spectacle. Though we had the luck to be born men in this flourishing world, yet are our lives dependent on the detestable Kiang clan! Is not this a painful business to think or talk about? Recently, thanks to the high authorities, the monopoly has been taken from that clan; but they have nevertheless been scheming with some low fellows to re-open salt shops among us, and they have had one of our number, Tsiang, beaten and imprisoned. We memorialized for his release, but were unheeded. The repetition of these injuries we could not endure, and we therefore issue this notification in the hope that all benevolent men and honourable gentlemen will excuse the affair, i. e., the burning of Kiang's house."

The tortures said to be inflicted upon those engaged in what was pronounced an illicit traffic, are not overdrawn, as is well known to the residents of Ningpo generally. Men are often hung up by their hands or thumbs, which are cruelly tied behind them, until they meet a lingering death. The desecration of a tomb by a member of the Kiang family, mentioned above, occasioned the pecuniary ruin of the whole of them, in consequence of prosecution brought against them in the courts. The guilty person was in prison for that offence when the English captured the city; the keepers of the city joined in the general flight, and the inmates all escaped.

It is believed that many hundreds have suffered death, and many thousands have been ruined, by the salt agents. The Chinese sometimes manifest a decided resistance to oppression not easily reconcilable with their natural character. I was once sent for to administer relief to a man at the district magistrates' yamun, who had at two blows amputated his left hand rather than perform some work which was unjustly required of him. So the private salt dealers often suffered with the most determined resolution.

When negotiations for the release of Mr. Kiang had been completed with the villagers and he was set at liberty, the governor issued through a toutai a proclamation in relation to the rioters, which is as long as a president's message, and cannot therefore be given in full. After stating the case in general terms as brought before him in a memorial from the district magistrate, he gives a dispatch, which he had received from the governor on the same subject. His Excellency says:—

"After learning that Tsiang had been engaged in riots, I ordered the apprehension of the culprit; whereupon the bad people of the

eastern villages had the temerity to come in thousands to his rescue, entering the yamun, and causing a scuffle in the hall, and after releasing the criminal marching to the residence of Mr. Kiang, which they burnt after taking him prisoner. Thus acting in contempt of the law, and with perverse feelings uniting like banditti, they show themselves to be a rebellious people, whom the laws of the empire cannot regard with favour. It incenses every body, and it matters not whether reference be had to leaders or followers, killing is too good for them. I have ordered the general with all the land and naval officers to assemble several thousand picked soldiers to meet at my yamun, with cannons, guns, and every kind of fire implements, and proceed to the apprehension or extermination of the whole body, in order to illustrate the majesty of the law. If they presume again to rely on their numbers, and offer resistance, the military shall make a thundering fire upon them until they are annihilated; they are not to be shown any pity."

The toutai, after quoting the above, refers to the burning of Mr. Kiang's salt establishment and the execution by Lynch law of one of his agents named Wang, all of which was done under the direction of Tsiang, and then adds:—

"Because the officers had not the strength to apprehend them, and the case having been left in abeyance, they had grown bold, and so obstinately bad in wickedness as to go to the extreme of audacity, and with several thousand men to enter the city by broad daylight and riot without the least apprehension. Entertaining the governor's sentiments, 'Killing is too good for you,' I certainly ought to have followed his orders and have exterminated you as a caution to villains generally. But considering that though the flags were borne on that occasion by the rascals indicated, there were above ten villages in the same quarter which stood aloof, and further that amongst those who entered the city there were many who came under compulsion, there should be some distinction made."

In view of the danger of involving the innocent with the guilty, and of "destroying gems with rubbish," the toutai says, that he went before the governor and implored a respite for the villagers to allow them time to seize, bind, and bring in their leaders.

"Thanks to his clemency," proceeds the proclamation, "the governor has allowed ten days for you to procure pardon by finding and delivering up your leaders. I cannot restrain the gratification which on your account I feel at the governor's goodness. And though you have just shown your respect for the laws by releasing Mr. Kiang, yet the culprit still remains to be given up; it behoves me therefore to make known that absolutely the local officers cannot as heretofore be dilatory in apprehending you, (particularly as the governor understands the whole case,) and that when we once more come down upon you, there will be no escaping the meshes of the net. Bethink yourselves of the governor's favour, and hasten to bring in Tsiang and the leaders of those villages that they may be tried and punished within ten days. This is an important matter,—Yield precept and trembling obedience. If they rally in thousands and, presuming on their power, force you into strife, then

you are to unite heart and strength and bring them before us. Why should you fear them? Moreover you can thereby escape present troubles and avoid their oppressions in future, so that one single act will effect two good things. Seeing that you are stupidly ignorant I try to save you, and do not mind taking trouble about it. If you screen the villains, and instead of delivering up the leaders purchase substitutes, it would be a waste of feeling to delay sending the military to make an end of you."

It is understood that before this proclamation was issued the whole affair had been amicably arranged. The Kiang family admitted that the outrage had been provoked, and declined bringing their case before the government. The villagers were not to be molested in their rights, at least for the present, and Mr. Kiang was set free. It was arranged further that if the case should be investigated at Peking, that the requisite number of lives should be made up to answer the demands of justice. True the toutai expressly says that substitutes shall not be allowed; but that is recorded for appearance only, and not with the expectation that any will think him in earnest. Less than fifty dollars will at any time be a sufficient inducement for innocent men to lay down their lives for the guilty. It is not long since that in the neighbouring city of Fungwha a fight took place between two religious processions, in which a life was lost; but there were so many persons actively concerned in the murder that the crime could be fixed on no one. Nothing but life would satisfy the clan to which the deceased belonged, and accordingly a poor man was hired to acknowledge the deed and to expiate the offence. The sum paid was thirty dollars. Happily for him, the magistrate coveted the fee, got possession of it, liberated the prisoner, and managed to put an end to the matter without any serious disturbance.

Nearly three weeks have elapsed since the last proclamation was fulminated, but no regard was paid to it. No dealers licensed by the salt monopolist dare to appear in the infected district, and as for the hero Tsiang he considers himself perfectly secure; the Mandarins would indeed be sorry to see him brought before them in custody. After several weeks of painful turmoil, the officers soothed down all difficulties and enjoyed the new year in quiet.

On New Year's Day the gayest visitors at the levee of the Toutae were the Pirate Chiefs, who were received with marked attention. Pu, the Commander, has gone, it is said, to Canton to build some vessels by which he will be able to cope with any number of Pirates. As not less than three hundred of the most daring escaped, it is probable they only want suitable leaders to become formidable again.

(To be continued.)

PROCEEDINGS OF H.M.S. "FANTOME."—*J. H. Gennys, Commander.*

After coasting round the south and west sides of Van Diemens Land, sighting the Black Pyramid on the west side of the Hunters Group, and examining the west coast of King Island, for the missing steamer *Melbourne*, we anchored in Franklin Road, between New Year Islands and the N.W. end of King Island, lat. $39^{\circ} 41' S.$, long. $143^{\circ} 51' E.$, in five fathoms.

Franklin Road is tolerably sheltered, except from the north and N.W., but full of kelp and so strong as to prevent boats from forcing their way through, in some parts, and I should think dangerous from being liable to interfere with the action of the rudder. There are also many rocks under water and a strong tide sets through the islands. Ships may obtain water from a good stream in King Island, about east from the anchorage, and wood in abundance. Parties were sent to explore but found no inhabitants, nor any signs of the missing steamer, but, apparently, a fine grazing and agricultural country, well watered and wooded, with numerous marks of Kangaroo.

Leaving Franklin Road we examined the north and N.E. coasts of King Island, standing off to the eastward during the night, and, on the following day, anchored off the S.W. end of Three Hummock Island, in the Hunters Group, about $1\frac{1}{2}$ miles off the sandy beach, in $10\frac{1}{2}$ fathoms.

Ships should give the south end of Three Hummock Island a wide berth as the water runs shoal for about a mile or more off it. A strong tide sets between the islands and the anchorage does not appear desirable; it may, however, do for a ship waiting for a wind through the straits, and perhaps better than Franklin Road. We did not, however, observe any good watering place for ships.

Having sent a boat to Long Island (the largest of the Hunters Group) they found living there a party of sealers; and there is anchorage on the east side of it.

From the Hunters Group we sailed for Port Philip and arrived the following day. The light-house on Shortland Bluff, at the entrance of Port Philip is in lat. $38^{\circ} 17' S.$, and long. $144^{\circ} 41' E.$ The entrance between Port Philip Heads (being formed by Point Lonsdale on the west and Point Nepean on the east side) is nearly two miles wide, but a reef of rocks runs out from either point, so that the deep water is little more than a mile wide. The light-house on Shortland Bluff stands about $2\frac{1}{2}$ miles inside Point Lonsdale, bearing about N.E., and, with a leading wind bring the light-house to bear N.E.b.N. keeping in mid-channel between the two heads, and anchor in about seven fathoms, the light-house bearing west. Should it be desirable to go up to Williams-town, (about thirty miles from the Heads,) it will here be necessary to take a pilot, as the passage is very narrow between the sandbanks off Swan Point, after passing which the port opens out to a width of twenty miles.

Williams-town lies in Hobsons Bay, at the mouth of the river

Yarra, about six miles below Melbourne; between the two small steamers run several times a day. There is also a steamer to Geelong, in Cores Harbour, at the extreme west of Port Philip, once a day.

The gold diggings in the neighbourhood of Melbourne are at present creating great sensation. People are arriving by thousands from all directions; and about a hundred ships without crews to take them to sea are idle in Hobsons Bay. All seem to wish to try their luck at the diggings, notwithstanding very many are doomed to be disappointed. The hardships and labour are very great, and the most common necessities of life at an exorbitant price. The crowd in Melbourne is so great as to prevent all possibility of finding lodging for them, and the evil daily increasing. At the diggings it is of course far worse; the roads scarcely passable and robberies of frequent occurrence.

At Sydney also the gold mania prevails but is not so much felt as at Melbourne, being so much larger and longer established; besides the diggings lie at a greater distance. Very many ships, however, are lying idle at Sydney, not being able to obtain crews; even the contract steamers for carrying the English mails were in a similar dilemma, and we were obliged to supply the *Australian* with seven seamen to enable her to proceed on her return voyage to England with the mails. They were paying ten pounds per month to the seamen and yet not able to obtain a crew.

The following is extracted from the "Australian," which we noticed in our last number:—

"Little do those who seem glad to leave their country for a new one, dream of what they must bear when far away; the scenes of privation and misery they must witness among the new comers is beyond description; un-housed, ill-fed, miserably unprotected from the weather, hundreds perfectly ignorant as to when they will get their luggage, or what to do with it when they have got it. No one can describe the consternation, the confusion, the sickness, the difficulty of getting anything to eat or drink, unless provided with it among their own stores, and then unable, perhaps, to get at it. The head of a family should go alone, and when once settled anywhere, he can send for his household, but half a man's means will be exhausted in keeping a family, where everything is dear, while he seeks a place of final location. One who has been brought up a gentleman and unused to labour, is a pitiable object here, and the female branches of such a family soon find the difference between here and home, however homely it may have been; yet, even in all the misery of a camp of unsettled emigrants, there are flashes of pleasure. 'Music hath charms to sooth the savage breast,' and it is curious to observe how soon those who have a taste for it are brought together: all distinctions of rank are forgotten. Tom Styles, an old guard of a coach, sounds his cornopean, and forthwith all those who have an instrument, and can use it, are down to the spot; Jack Nokes asks questions and brings his flute, and broken-down squires follow the same impulse, and in a day or two we have a camp band, and no bad one, though some notes do grate on the ear a bit. We were as fast as any one of them; we soon let it be known that we would do

a trio in our own tent, flute, clarionet, and a right good cornopean. In the midst of music people are diverted for a time from their thoughts. The passion for sweet sounds is increasing among the population, and musical instruments are a safe investment; it will be a growing passion, and humanise some of the ruffians who now seem half savages. It would be well if those who contemplate coming out were to take a few lessons in music, because they can improve themselves by practice coming out and after they arrive; certainly no man should come into this colony without his musical instrument of some kind, and enough knowledge of it to improve himself by practice. Among all that there are in use, there are but few good instruments here, the chief having been picked up second-hand, apparently after being thrown by for some fault or other, for we muster sometimes pretty strongly, and compare instruments as well as notes."

"Here we are, after as rough a journey as we ever experienced; and such a sight as beggars all the descriptions given. An ant's nest is not more active than the surface of the earth as far as we can see; holes of all sizes and depths, some only begun and abandoned, others deep—in fact, some in every stage, from three feet deep to thirty. Tents as far as the eye can reach; groups of men busy at their labour, are in groups conversing; shouts of laughter, and far too much swearing: it was a scene for which we were not prepared. Everybody towards resting were firing off their pistols or guns, and reloading them for the night. When we had pitched our tent, and set up the van also as a tent, it formed the luxury of an up-stairs bed-room, and the one on the ground was our sitting-room. We cast lots for the turn to stay at home and provide; and our servant was highly useful in both ways—he stayed with the one whose turn it was to keep the tent and provide the dinner, and when he could be spared he worked with the three of us who were at the diggings.

"The most difficult point we had to settle was the choice of our 'claim,' as it is called. The whole place, as far as we could see, appeared occupied; but, on approaching, we found there were untouched claims between them. There was nothing to guide us in the choice but hap-hazard: we took one, the nearest we could get to our tents. Every now and then there was a 'Halloo,' and men running to a spot; but it was only to witness a slice of luck—some bonny nugget: we made up our minds to be quiet over these matters, but it was many days before we could say much of our luck. We contrived, however, by downright hard labour, to get enough gold to pay our expenses; and, after a fortnight, either we got more handy at the work, or the soil we came to a little richer, for the quantity per day increased upon us; yet we were in what was called a hard-working claim. More than once, when we heard of lucky fellows picking out nuggets, we talked of changing; but again we heard of some who could not make ends meet; so we finally agreed, that if our daily quantity decreased we would move, but keep on while it paid.

"The people about us were friends; we made acquaintances who would take tea with us, and smoke, and some who could play an in-

strument or two, so that after being regularly tired at work, we played music to rest ourselves; but we were not the only musical party, and we occasionally in fine weather mustered all our forces, and formed no bad out-of-door band. When we were alone we could only manage trios.

“Every now and then, we heard accounts of murders perpetrated on the road to and from the diggings, several in which the object was to secure the booty a man was taking to sell. We stowed all our gold in our bedroom, in the best and strongest box we had, and with few adventures worth recording, except our increased success by perseverance and hard work, we contrived in two months to get five thousand pounds worth of gold among us. Our horses were disposed of soon after we arrived, and we took it in our heads to pack up and go to Melbourne to dispose of our gold, for there had been some very serious robberies; we therefore engaged with the owners of a return dray, and hired bullocks to draw our waggon, or van, to which our up-stairs room had been again converted, and made the best of our way, all being well armed. On our road we had many inquiries made by suspicious-looking characters, but as we all showed our pistols in our belts, no one attempted to molest us. We passed rather a sluggish conveyance soon after we left the diggings. The day after we arrived at Melbourne we heard they were attacked, all their gold taken, themselves very much injured, and the plunderers escaped; but this is a common occurrence, so that it created no surprise among the people of Melbourne, where everything is disorder; and we fancy, from all we see, that some of the police wink at the depredations of thieves. We disposed of our gold, placed the money safe, and prepared for another excursion; but, although everything went pleasantly, as before, we were unfortunate; we changed from one place to another without bettering ourselves, and at length contented ourselves with washing the refuse of some more lucky gold-finders. Here we made up for our bad fortune, and obtained more than we had at our last previous digging, and here it was we wished for the London sweep-washer’s apparatus. It would not have taken a tenth of the time to pound all the lumps of quartz and stones small, that it did to pick them out, and we might have made pounds where we made only pence, for while there are stones it is impossible to wash clean, and even small ones require more force to wash out than the dust can resist, so that a good deal washes away, whereas, if it were all pounded small—into mud, as it were,—it would wash away with very small force and the gold would all remain in the bowl or whatever you wash in. We reaped a golden harvest for a time, and having obtained as much as we cared about, we once more made for Melbourne. We had partly become weary of the increased numbers of diggers: the police became very arbitrary, the diggers quarrelsome and noisy, there were frequent assaults, and in the affrays which took place there were more and more began to join in them. Seeing the evil spreading, we thought we could not do better than leave them; we had got as much as we cared for, very nearly £3,000 for each of our shares, after deducting ten per cent. for

as hard-working and trustworthy a fellow as ever served a company, and we sold all the traps we did not want, and left him in a fair way to increase his store. Once more at Melbourne, we found houses, apartments, and everything that man requires, so exorbitant, that we pitched our tent outside again, resolved to make the best shift we could until we had settled our plans for the future. The chances are, that we remain here awhile to see how things turn up, and then turn cattle-keepers and breeders on our own account, for a bush-life cannot be worse than life at the diggings, and there is no danger of getting our throats cut."

Sailed from Sydney November 2nd, and was off Port Nicholson on the 8th, but meeting with a S.E. gale and being unable to weather the Seal Rock, we bore up and anchored inside the Island of Mana, in Cooks Strait, in five fathoms.

This anchorage is sheltered from the prevailing N.W. and S.E. winds, and abreast of it is the Harbour of Porarua, about sixteen miles, by the road, from Wellington. There is a dangerous bar across the entrance of the Harbour, and boats should not attempt it with the wind from N.W.; but it is safer to land in Titi Bay or a small cove to the south of it called Coevers, formerly a whaling establishment, opposite and inside Mana. The *Fantome's* galley and jolly boat were swamped on the bar of Porarua; the latter was hauled across the neck of land between the Harbour and Titi Bay, in order to communicate with the ship.

Teranaki is in lat. $39^{\circ} 3' S.$, long. $174^{\circ} 4' E.$; high water at full and change 9h. 30m., range twelve feet. It was founded by a company in 1841, and is near the S.W. extreme of the northern Island of New Zealand. It may be known by the Sugar Loaf Rocks, three in number, about two miles west of the settlement. The highest Sugar Loaf is 503 feet high, being on the mainland, the others are small islets, one 266, and the third 190 feet high. There is deep water close to the two last on the north and west sides.

This is an open roadstead and the best anchorage for large ships is in about twelve fathoms, rocky bottom and sand, with the Seal Rock open between the two insular Sugar Loaves. Ships may here ride with a long scope of cable in the summer months, but it is prudent to put to sea should the wind come round to the north of east, after which it usually draws round to N.W., with a heavy sea. A N.W. wind in Cooks Strait is generally W.S.W. off Teranaki with the roadstead tolerably sheltered by the Sugar Loaves and other rocks. A pilot boat will come off on a signal being made, and there is no landing except on the beach, which is not practicable in strong N.W. and northerly winds. The land in the neighbourhood appears well cultivated, and numbers of sheep and cattle, &c. The white inhabitants are about 2,000.

Mount Egmont, immediately at the back of Teranaki, is 9,000 feet high, and may be seen in clear weather upwards of 100 miles. It is always capped with snow and is a grand object but frequently obscured

with clouds. The lower range, to the N.E., may often be seen when the peak is obscured. Willis's ships mostly call here from England once a month, but landing cargo and getting water are both very inconvenient. There is a walking post, by natives, once in three weeks, to Wellington. The distance by sea is 180 miles to Wellington, 150 to Nelson, and 120 from the Harbour of Mamekau.

Anchored in Nelson Roads, (Middle Island,) December 18th, lat. $41^{\circ} 15' S.$, long. $173^{\circ} 16' E.$; high water full and change 8h. 50m. Spring tides rise 13 feet. The entrance to the inner harbour is very narrow, with dangerous rocks and a rapid tide. The roadstead is quite open to the north and N.W.

Sailed from Nelson, December 22nd, and arrived in Croixelles Harbour the same evening, the distance being about twenty-two miles, N.W., lat. $41^{\circ} 4' S.$, long. $173^{\circ} 45' E.$ This fine harbour has three arms, which may be distinguished as the north, the east, and the south arms. The north arm is again subdivided into three branches and forms a most excellent harbour, perfectly sheltered from all winds, with several streams of water, and wooded all round. The best watering place for ships is about two miles up the north arm, on the right hand side going up, and about a mile from the head of the right hand branch. Here the stream falls from a height into the sea and may be led by a canvas hose into the boats which lie in smooth water under it, except at low water, when a large boat would have to wait for the tide. Fish are numerous in the bays, &c. On the left hand side of the north arm is a curious bank of smooth stone, apparently formed by the tide, it is steep-to, with a flat even surface good for exercising a field-piece and small arm men. In the east arm, facing the entrance to Croixelles Harbour, are many excellent spars, fit for topmasts, top-sail yards, &c.; here, also, is good anchorage, but, as a harbour, is not equal to the north arm.

From the head of the north arm, across a ridge of hills and about two miles in an easterly direction, lies the Pelores, which has been called a river but is in fact a deep and narrow inlet of the sea, with deep water and numerous bays and islets, running to the southward for about fifty miles. It has not been surveyed. The entrance opens into Admiralty Bay, Cooks Straits.

There is but one Englishman living in Croixelles Harbour, who has been for about twenty years among the natives, with whom he lives. He cultivates some wheat, potatoes, &c., and has numerous live stock, many of which go wild in the bush. The natives are but few in number and scattered about.

OCEAN CURRENTS :—*Remarks on Maury's Wind and Current Charts, as alluded to in Lord Wrottesley's speech, in the House of Lords, on the 25th April, 1853.*

Of all the dangers which beset the navigator in his daily vocation, those arising from currents are the most insidious and difficult to discover. They may be compared to the approving smiles of a false friend that end in deception, for they often deceive the navigator to the loss of his ship with all on board, and then discover themselves in the ruin which they have occasioned.

As in every day life, to discover fraud requires experience and knowledge of the world, so does the seaman require the same experience and knowledge or refinement in the application of the noble art of navigation, to discover that he is under the influence of a current. Embarked in his stately castle, he traverses the ocean in all the pride of that power which navigation gives him; and yet that stately ship is but a mere dark speck on that ocean. He has recourse to those simple appliances of mechanical means, handed down to him by his forefathers and improved by his cotemporaries, for ascertaining whereabout he is. Ingenious and admirable as they are to accomplish their purpose, and scrupulously correct as he may be in their application and in making those allowances which a seaman can only make, he yet fails! His calculations tell him that he has made certain progress, that he has sailed a certain distance in a certain direction. But are they sure? His resources are exhausted, and he trusts that they are so until he finds (to his cost, perhaps,) that he has been deceived. The surface water of that ocean on which he has been sailing, to which he was compelled to apply the means of keeping his reckoning, has itself been under the influence of exciting causes. Those waters which have lashed the sides of his vessel with angry foam, or were gently playing in her wake, have also been hurried along in some direction, perhaps across his path, perhaps in its same direction, and he is far away from his expected place, for he has been under the influence of a current! Such is navigation without the aid of astronomy, and such the uncertain condition which compelled our forefathers of old, when their LOG had failed them, to trust to their LEAD and LOOK-OUT. The navigator of these days, without the friendly aid of astronomy, is but little in advance of the ancient Genoese, who visited Britain some centuries ago for the sake of commerce. The modern ships of the merchant, to be sure, are larger; but are they more secure than theirs? Let our insurance laws answer that. But give our navigator his sextant and his chronometer, these finished gems of art, along with those unerring rules of science by which he may apply them to ascertain his real position at sea, independent of his reckoning, —to find the spot which he occupies on the "wild waste of waters," where no friendly beacon points his way, then indeed is he endowed with a power far above his prototype of old; then indeed while the glorious sun and moon and all the "heavenly host" are unobscured to

his view by murky clouds, then he can and does compete successfully against the direful influence of currents. Let him not forget then to take the hint they give him, to learn the lesson which they hold out, to look heavenward, as his instruments teach him, for his ultimate safety as the port of eternal rest, and avoid those evil currents which beset his path through life and hurry him to destruction.

The question of ocean currents has been recently placed in a prominent point of view to the nautical world, and has certainly not met with more attention than it deserves. It has been extensively taken up on the western side of the Atlantic; it has been brought forward in both Houses of Parliament in this country; and it has even formed the subject of a deputation to the Admiralty. Such exertions at least show that navigation has good friends on both sides of the Atlantic.

We have already alluded, in former numbers of this journal, to the labours of Lieut. Maury, of the United States Navy, on the question of currents. The great pains and trouble which this officer has taken to enlighten his brother seamen on the subject of prevailing winds and currents of the ocean are highly commendable, assisted and encouraged as he has been by the liberal support of his country. Having exhausted the few logs at his command, (for these are the sources of his information,) he succeeds in obtaining the approval of his government to a certain form of log, drawn up by himself, to be kept by the *mercantile* ships of his country, along with a chart, on which their tracks at sea are to be inserted with observations on currents. These, it appears, are supplied to them and are returned to him, with their logs, at the conclusion of the voyage, from which he constructs current and pilot charts. His *current chart* of the Atlantic Ocean, now before us, is so covered with tracks that it would defy the most "expert" ship-master to lay down another on it, notwithstanding the tracks made in the different seasons of the year are distinguished by colours, four only being necessary, for those of spring, summer, autumn, and winter. The construction of these charts would suggest others, which Lieut. Maury designates *pilot charts*; whereon, the winds experienced by these vessels are expressed. They are intended to show, in any part of the Atlantic, what wind a vessel, making a passage, may expect to meet with in that part. Lieut. Maury's system has been so fully described in Lord Wrottesley's pamphlet,* that we cannot do better than show by his Lordship's words (now circulating in a second edition) the reasoning on which Lieut. Maury has founded his conclusions, contained in the pilot charts.

"The whole ocean is divided into squares, the sides of which represent 5° of longitude and 5° of latitude. In the midst of these squares the figure of a compass is drawn, with lines representing sixteen of the compass points, the intermediate points being omitted; the

* "Lord Wrottesley's Speech in the House of Lords, on the 26th of April, 1853, on Lieut. Maury's Plan for Improving Navigation, with some Remarks upon the advantages arising from the pursuit of Abstract Science."—London, James Ridgway, Piccadilly, 1853.

log books are then searched for observations of the directions of winds and of the proportions of calms in each of these squares. In the centre of each compass so drawn are placed two numbers, one representing the total number of observations obtained in the square, the other the per centage of calm days. By the side of each of the lines representing the sixteen points of the compass are written numbers which denote the per centage of the winds that have been found to blow from that quarter; and at the extremity of each line are numbers which show the per centage of miles a ship will lose if she attempt to sail 100 miles through that particular square in the particular direction indicated by the line in question. Now that number is obtained as follows:

“By the resolution of simple problems in sailing, it is known, that if the wind will not allow a ship to lie within six points of her course, that is, if it be a head wind, she will lose 62 miles (omitting fractions) in every 100 that she sails, or, in other words, after sailing 100 she will only have made 38 good in the wished for direction. In like manner, if she can sail within four points she loses 29 miles; and if within two points only 8. Having, therefore, the per centage of winds that will make such deviation from the desired course necessary, it is easy, by a common proportion, to calculate the total amount of space lost on detour (as Maury calls it) for every given direction for every 100 miles sailed within the square.”

We cannot help thinking, there are few of our ship-masters who will trouble themselves with this kind of calculation as to the wind, and that they would rather have the result of such calculations placed in plain English before them. Indeed such would appear to be the desideratum to be gained, and the figures within the several squares on the chart the means whereby that desideratum is to be arrived at. There can be no doubt that the commander of a ship, who is making a passage across the ocean, is glad of all the information he can find on subjects affecting his progress; and among these are principally winds and currents. In seas, where trade winds and monsoons blow, the seasons in which they occur return with such regularity, that few observations may be necessary to arrive at the desired conclusions in comparison with districts of the globe beyond their limits. The “doctrine of chances” is there set aside. But in the extra tropical latitudes of the Atlantic, a large number must be collected before any approach can be made, within tolerable limits of success, in predicting the wind likely to be met with in a part of that ocean at a particular time of the year.* This number is not yet collected even in the squares already occupied. Lord Wrottesley considers “the blank squares are a reproach to the civilization of the present age.” For our part we doubt the advantage of sending ships to them for the purpose of filling them up. If the object to be attained were merely the mode of making the most rapid passage, the seaman has already before him the system

* About a quarter of a century ago, the theory was taken up by the Editor of this Journal,—but was soon found to be so gigantic a labour as to be inconsistent with his daily duties.

of Great Circle Sailing. It is quite true that Lieut. Maury's doctrine is applicable to the subject along with that, but then the latter is a "doctrine of chances," while the former is one of certainty. Besides, we already have the results of observations made in parts lying between those places, where ships are perpetually running to and fro, and although "it is no part of Lieut. Maury's plan to send out surveying expeditions," as Lord Wrottesley says, we should be very much surprised to see a surveying expedition sent out by this country for the mere purpose of exploring the blank spaces left in Lieut. Maury's chart, with the view of establishing the doctrine of the chances of what winds are to be found there!

Doubtless a good treatise on the best mode of making passages in different seas, would be a valuable boon to the seaman. A plain, intelligible account of what winds are most likely to be met with in their different parts, and what course is best to be adopted when making passages, he may look for in vain at present. Some information on the subject is scattered through our works of Directions, but the subject is well worthy of being separately treated, although much information is yet wanted. Thus, the best mode of making the passage from this country direct to the Cape, was a subject of experiment by our screw mail steamers before it was determined by them, and yet how many thousand times has even that passage been made. Much stress has been laid by Lord Wrottesley on Lieut. Maury's discovery of the best place for crossing the Equator among other passages. We thought it had been settled long ago that in doing so it was better to keep to the westward than to fall into the calms which extend from the African shore. The following is by no means new to naval officers, although it is the experience of one who has crossed the Equator outwards no less than 74 times. He says, "After having passed the Cape de Verd Islands, my chief aim has been to make all the southing I could, during the N.E. trades, without any desire to make westing; and on first meeting a breeze from the southward, I have invariably trimmed on the *port tack*, the ship's head frequently off as far as W.b.S. or W.S.W., and she has always come up on the same tack without risk of getting too far to leeward. I have seldom crossed the Equator to the eastward of 26° W., and have often crossed it in 30° and 31° , and sometimes as far west as 32° . I have frequently made Fernando Noronha and *passed to the westward of it*, and never had any difficulty in clearing the Pernambuco land without a tack, or Cape St. Augustine, if bound further south." "I remember about five years ago speaking an American ship, while becalmed; when a southerly breeze sprung up, we made sail on the port tack; the American stood to the south-eastward (we were then in about 3° N. and 28° W.) when we parted company. We arrived at Pernambuco, remained in port 48 hours, and sailed for Bahia, at which time the American ship had not appeared on the coast." Was this one of those Americans alluded to by Lord Wrottesley when he said, in reference to this passage, that the faith of navigators is liable to give way at the critical moment of trial: having adopted the new route up to a certain point,

they find their hearts fail them when they reach the belt of equatorial calms, and go *fanning and flapping away* to the eastward, whereby they only increase their troubles, and pay for their backsliding by several days spent in that ocean purgatory the *equatorial doldrums*, as Maury calls it," which ocean purgatory termed the "equatorial doldrums," we will venture to say has been well known to seamen for ages past. In these remarks, however, we must not be considered as slighting the exertions either of Lieut. Maury, or the zeal of Lord Wrottesley, in pointing them out. The field of hydrography is a very large one, and there is plenty of room for many more labourers in it yet. But reverting to the "new route," the superiority of which is to prevent vessels from going "out of their way 700 miles to the east instead of sailing nearly as the crow flies (which Maury showed to be practicable), and they did this to avert a fancied danger, which turns out to be a mere bugbear," we presume that he means American vessels, for that "current setting on Cape St. Roque," seems to have been little heeded by the sample of our navigators whose experience we have given above.

But let us come to currents, those fruitful "sources of disaster," as Lord Wrottesley justly terms them, to which we alluded in the commencement of these remarks. And first of that gigantic current known by the name of the *Gulf Stream*, flowing from the Gulf of Mexico, the combined effect of the trade winds. We are told by Lord Wrottesley that this stream "in the Florida passage flows up hill." There was no necessity for such an assertion to augment the importance of this vast current. But where shall we find the proof of it? We should like to know what proof there is that the Gulf Stream adds the phenomena of water running up hill to the others which it displays. Is it because the depth decreases from 500 fathoms in the Florida Passage to 200 fathoms off Cape Hatteras? Where is the proof that the body of water 300 fathoms deep below the level of the bed of the sea off Cape Hatteras, is flowing upwards and passing the Cape in the same way as that of the surface? What proof is there that this 300 fathoms is flowing at all, and if in motion that it may not be moving in quite another direction? Among seamen of former days we have met with this opinion, but we never expected it to be delivered formally in our House of Lords.

There is a river called the Saguenay, a tributary of the St. Lawrence, that joins it from the northward, with an impetuous force which reaches far into its stream, and is occasionally dangerous to navigation, by hurrying vessels upon reefs when under its influence. Now the bed of this river is 30 fathoms deeper at its mouth than that of the St. Lawrence into which it flows, being a very remarkable instance of a tributary stream being deeper than its recipient at its junction with it. But are we to suppose that the waters of the Saguenay, below the level of the St. Lawrence bed, actually flow into this river? It appears more consonant with natural laws, that the waters of the Saguenay above the bed of the St. Lawrence *can* and do flow into it, while those beneath them form a stratum over which

they pass and cannot flow, and therefore are in a state of comparative rest. Suppose the St. Lawrence for an instant was dry to its bed, and the Saguenay also to that depth, the latter would become a lake, for it cannot flow up hill, up the barrier which forms the bed of the St. Lawrence. And how can the water of the Gulf Stream in the Florida Passage below the level of 200 fathoms beneath the surface flow up hill, past Cape Hatteras, over the barrier which it meets there? We may be told that the warmer water is at the surface, to which we fully agree, but until we learn that the temperature of the water at 500 fathoms is higher than that above it by actual observation, we must dissent from the doctrine that the Gulf Stream flows up hill.

The Government of the United States has for several years been carrying on a survey of its shores in the Atlantic, and the Officers employed in it have recently been exploring the Gulf Stream, a work which belongs exclusively to them. For rushing as it does past their very doors, they must naturally be jealous of the honour of developing not only the natural limits of it, but its depth and extent; and indeed all those interesting phenomena which it must present. These gentlemen have already brought to light some remarkable facts, which are well worthy of our attention here. Their observations already show that the inner or *western* edge of this stream of warm water, which off Cape Hatteras is 30 miles distant to seaward, extends in a N.E. (true) direction, gradually becoming E.N.E. and nearly East in the latitude of 39° in about 67° W.; which edge is so remarkably distinguished, by the sudden change of temperature reaching 82° and even 84° of Fahrenheit in summer, as to have obtained for it the name of the "cold wall." This warm water is considered by them as "the main body of the Gulf Stream, which in lat. 36° (that of Cape Hatteras) extending to a depth of some 80 to 100 fathoms, rests finally on a bed of cold ocean beneath. The temperature of 50° was reached at 500 fathoms in lat. 36° , long. $72\frac{1}{2}^{\circ}$, the surface being 84° Fahrenheit, and a temperature of 37° was reached at 1500 fathoms in lat. 38° , long. $69\frac{1}{2}^{\circ}$, the surface being at $76\frac{1}{2}^{\circ}$ Fahrenheit."

The observations of the American officers also establish the fact that between their shores and the "cold wall," the current sets to the southward generally, and towards the shore; that the main body of the Gulf Stream off Cape Hatteras is about sixty miles across, in a transverse or S.E. direction; and that a volume of cold water, about 36 miles across, then divides it from an outer stream of warm water, which is about a hundred miles across; the whole breadth of the stream off Cape Hatteras, including the volume of cold water in it, being about 240 miles across. The attention of the navigator is particularly directed to this stream of cold water; and he is warned, when he meets it, not to suppose that he has crossed the Gulf Stream, but that he is to expect a more sudden change in the main body of it, about thirty miles further west. We further learn that within the limits examined, which are between 32° and 38° N., extending to 67° W., "the rate is from two to three knots per hour," that, "The law of change of temperature with depth which developed itself was that

of the condition of heat through a liquid. The low temperatures reached, showed that the Gulf Stream is, comparatively, a superficial current, and is underlaid by a vast ocean of cold water; so cold as not only to compensate for the increased warmth of the earth in descending, but to carry to the southern regions the temperature of the far north.

"This underlying water where it 'crops out' on shoals or at the shore shows a sudden decrease of temperature in the surface of the ocean." It appears also that in these proceedings of the American officers the whole Gulf Stream was crossed in sections as nearly at right angles to its axis as possible, and that

"The temperatures were observed from the surface to the depth nearly of 500 fathoms, varying at first by depths of 10 fathoms and afterwards, as the difference of temperature in descending became less considerable, by greater differences of depth; in a few cases the depth reached was 1,300 and 1,500 fathoms,—one mile and three quarters, nearly."

These observations are highly interesting as well as useful, and it is gratifying to find our brethren in the United States surveying their own waters, and bringing to light facts of the highest importance to seamen; and it is no less gratifying to find the subject appreciated as it should be in these sentiments expressed by Lieut. Maury in a paper read by him before the National Institute, at its annual meeting, so far back as in April 1844. After alluding to the deficiency of information on the subject and relating the fact which Dr. Franklin obtained from the Nantucket whaler, he says, "Therefore the Gulf Stream offers a field of investigation *peculiarly American, and we, the Americans, are in duty, as we are in honour, bound to show ourselves curious and diligent in whatever there may be about it of undiscovered mystery or of philosophic interest to navigation, or other branches of science.*" In such sentiments as these, men of science "on this side of the Atlantic" must cordially concur. The Americans *are* in honour bound to give to the world a good account of that wonderful stream and all its phenomena, left by their great philosopher Franklin to his countrymen, and to consider it, as Maury justly says, "as a field to be reoccupied by them at some future day and with a like spirit of philosophical research." That day has happily arrived, and the officers of the United States are now making good progress in laying open the treasures of their own "proprietary field of investigation," which lies at their door.

But let us now turn to the opposite shores of the Atlantic. Of the currents there, that running perpetually through the Strait of Gibraltar is another remarkable one, the originating cause of which lies yet concealed in mystery. For our own part, we are content, at present, to attribute it to the active volcanoes and evaporation of that sea, and to suppose that the water which is constantly flowing into that remarkable basin, from all points of the compass, is disposed of by those agents. Still it would be desirable to know more of this current, and the day may not be far distant when the Spanish Government, awakened by the rays of light which the officers of the United States are throwing over the phenomena of the Gulf Stream, may

institute a similar inquiry into that interesting subject, Such determination of a country celebrated of old in the annals of maritime discovery we may be certain would be well seconded by the French Government. Of this there is a good pledge not only in the energetic character of our neighbours in all matters of science, but also in that splendid collection of charts which they have made of their own shores, both in the north and in the south. We know as little of the Gibraltar current as we did of the Gulf Stream before it was in the hands of the American surveyors; how far below the surface it extends, or how far superficially or vertically it reaches from the strait, although we doubt the assertion that it extends to 400 miles. But what had this current to do with the loss of the *Medusa*, quoted by Lord Wrottesley as an instance of its effects. Surely they could not extend to the bank of Arguin, some 1,200 miles away from the Strait, in the neighbourhood of the Cape Verdes? In these days of refinement in navigation, we look back to those in which the *Medusa* was lost as well as to those in which Major Rennell was engaged in these subjects, as a period in which seamen were wandering on the ocean amidst the darkness of error that was too often fatal; which error even affects the conclusions arrived at by that eminent man regarding currents of the ocean, and taints them at their very source. As a general index to the great prevailing currents of the ocean Major Rennell's memoir is a valuable present to the mariner, although one, after a life-time of experience, went so far even as to doubt his "*Rennell current*." But who that has seen his current charts can look on the accumulation of observations, noted down with the most scrupulous care, of currents setting to all points of the compass, can look on these, we say, without a feeling of regret that so much pains have been lost. Those symbols, which are scattered in such terrific profusion over his charts, have been obtained from ship's journals of days when, although the observations of chronometers were good, the dead reckoning was not to be trusted, for the all powerful influence of compass deviation was not then considered and allowed for! General results we believe may have been attained; but for the establishment of single, simple facts, regarding the existence of a current having influenced a ship at the end of any twenty-four hours, Major Rennell's charts! what are they worth?

There are certain currents which, from their great effects, force themselves on the attention of seamen. Such are the equatorial current,—the source of the Gulf Stream, that of the Strait of Gibraltar, and the Guinea current, in the Atlantic (to which ocean we are confining our observations); and they are so marked and so powerful as to be well known in their effects to seamen;—all of them, indeed, for it would be difficult to say which was unknown to any one navigating in their locality. And, admitting the desirableness of extending our better acquaintance with all their peculiarities, as advocated by Lord Wrottesley, in his speech, who can help thinking it unfortunately infelicitous that he should have selected a *condemned slaver* to illustrate our ignorance of this latter current. A condemned slaver is

generally in the hands of a naval officer belonging to a man-of-war on the station; and no man-of-war is sent to the African station without a chart constructed on purpose to show the limits of this same Guinea current among the liberal supply of charts on board of her furnished by the Government. This very chart is constructed by Captain Vidal, an experienced officer, to whom the Navy is deeply indebted for his many valuable surveys, both of the African coast and the Azores. It shows certainly how the limit of two opposite currents may be crossed by "a few yards," perhaps, and therefore, although, to use his Lordship's words, "the lives of all these wretched beings on board of her might be sacrificed by persevering in sailing in the adverse current," the information by which that might be avoided is absolutely placed within her reach, as a copy of this chart was in the reach of this officer before he left his ship. Again, if she be not in the command of a naval officer, the same chart is on sale to the public for a mere trifle. Therefore, should such a sacrifice take place through sailing in the "adverse current," as mentioned by his Lordship, the fault must be attributed to the same apathy respecting charts that we find in certain of our merchant shipping,* and not the fault of the Government. But there is no fear of such results happening to slavers, condemned or not, either in the hands of those who command them or of those whose duty it is to intercept them. And as this paper, Mr. Editor, has now reached a reasonable length if you will make room for the following announcement of further interesting discoveries in the Gulf Stream, by the United States surveying officers, to the "American Association for the Advancement of Science," at their present meeting, we will, with your permission, take a future opportunity of returning to the subject of current charts.

PHILO NAUTICUS.

• THE SOUTHERN BANK.—*Notice of the Discovery of a Deep Sea Bank in the Examination of the Gulf Stream in connection with the Coast Survey, by Lieut.-Com. T. A. Craven and J. N. Maffit, U.S.N., Assistants in the Coast Survey, with Remarks on the Character of the Bottom, by L. T. Pourtalis; communicated by Professor A. D. Bache, Superintendent U.S. Coast Survey.*

The Gulf Stream has been explored in connection with the Coast Survey, by running sections perpendicularly across it at different points in its course, and exploring the temperature, and, as far as practicable, other phenomena of the stream, at stations on these sections, and from the surface to depths of six and in some instances twelve hundred fathoms—the stations being selected at greater or less distances, according to the less or more rapid changes occurring in the portion of the stream where they were intended to explore.

In the exploration made in June last, the hydrographic party of Lieut.-Com. Craven was instructed to explore the stream in four sec-

* Only a few days ago, a vessel was reported as being very nearly lost on Newfoundland, through a light being placed where there is none on a chart of that coast published by Mr. Henry, of the Minories.

tions, beginning with one from Cape Canaveral, Florida, perpendicular to the direction of the stream; next taking up one across it from St. Augustine; next from St. Simon's Galveston; and last from Charleston, South Carolina. That of Lieut.-Com. Maffit was to run the same section from Charleston, and then to take up others in succession further north.

The section from Charleston was explored by Lieut.-Com. Maffit's party, between the 2nd and the 11th of June, and soundings were kept entirely across the stream at depths of less than 600 fathoms, the bottom being brought up. The longitude reached was $77^{\circ} 12'$.

On the 11th of June, Lieut.-Com. Craven having crossed the Gulf Stream without finding bottom at more than 1000 fathoms, came upon a deep sea bank at the depth of 460 fathoms, in lat. $28^{\circ} 24' N.$, and long. $79^{\circ} 5' W.$ This bank was again met on the section north of this at similar depths, bottom being brought up, and tracked thus to a position corresponding with the Charleston section, where it had been struck by the other party, and bottom brought up from 300 fathoms, in lat. $31^{\circ} 37'$, long. $78^{\circ} 33'$, on the 7th of June. This bank is supposed to be an extension of the Bahama Banks, and will be carefully explored. Its discovery is claimed for the officers whose names are at the head of this notice, and for the work with which they are connected.

The following interesting remarks in regard to the nature of the bottom brought up are made by assistant L. F. Pourtalis, who has examined the specimens deposited by Lieut.-Com. Craven in the Coast Survey Office, and has compared them with those from the coast north of Cape Henlopen, formerly examined by him. I propose to present the details of his examination to the Natural History section.

Mr. Pourtalis, in a letter to me, says, "I have in hands now the specimens of bottom from the Gulf Stream obtained by Lieut.-Com. Craven, I can say that they are among the most interesting I have ever seen. You recollect that I said in my report, that with the increase in depth (in the greater depths) the number of individuals appeared to increase. The greatest depth from which I had seen specimens was between 200 and 300 fathoms. There the sand contained, perhaps, 50 per cent of foraminifera (in bulk). The specimens now before me go to 1,050 fathoms and there is no larger sand containing foraminifera, but foraminifera containing a little or no sand. The grains of sand have to be searched for carefully under the microscope to be noticed at all. The species are the same as found in the deeper soundings in Section II, but the specimens look fresher, and appear somewhat larger. The globigerinosea of D'Orbigny, which forms the majority, has frequently that delicate pink colour to which it owes its name, but which I cannot recollect to have noticed in more northern specimens. There are also some pieces of coral and dead shells from the depth of 1,050 fathoms. The corals do not look much worn, but still appear to have been dead. There are some delicate shells of *Molines* from depths beyond 500 fathoms, where they were certainly living."

PIRATES ATTACKED BY AN ENGLISH SHIP OF WAR.

In the prevailing unsettled state of the northern ports, the Chinese pirates have been actively pursuing their merciless calling, knowing well that the imperial naval forces had no time to attack them, were they even willing to risk an engagement. These pirates, however, have had a most signal thrashing from H.M. steam-ship *Rattler*, Commander Mellersh, although not without severe loss on our part, including that of a brave young officer, Lieut. Pidcock, who imprudently ventured to capture two junks with boats and small-arm men despatched to arrest the fugitives making their escape to the shore. The affair altogether was a very gallant one. Commander D'Orville, who bore a prominent part in the engagement, goes home by this mail in charge of dispatches, which will probably find their way into the *Gazette*. The *Friend of China* affords a full and correct version of the matter, and which is given below :

On the 5th of May, in a letter from Mr. Acting-Consul Walker, it was intimated to Commander Mellersh, of H.M.S.S. *Rattler*, then at Amoy, that a formidable fleet of pirates was at anchor about Namquan, (Namquan Harbour is in lat. $27^{\circ} 15'$, long. $120^{\circ} 20'$;) a harbour above the Min River, and that the *Spec*, a small British schooner employed on the coast in convoying Chinese junks, had been so riddled with the pirates' shot, that she had been obliged to leave the vessels she was accompanying to their fate; the result of which was, that the pirates took the whole, and held them to a ransom of ten thousand dollars. On the receipt of this intelligence, Captain Mellersh immediately coaled from the ship *Garland*, and, working all night, at daylight got underweigh, and about 7 P.M. succeeded in reaching White Dogs, at the mouth of the Min.

The whole of the next day it unfortunately blew so fresh, and the weather was so thick, that communication with the shore was impossible. About four A.M., of the 10th, however, Captain Mellersh despatched Mr. West, the master, in a cutter to reconnoitre; and about 3 30 P.M. he returned, with the schooner *Spec*, and intelligence that the piratical fleet was still in Namquan, waiting for the ransom money, which they were advised had been despatched to them overland. Taking the *Spec* in tow, the *Rattler*, about 5 30 P.M., proceeded onwards. Day of the 11th broke in a thick fog, and the approach being dangerous, the *Rattler's* engines had to be eased until about 8 A.M. The fog lifting, Single Rock was at that hour seen about a mile and a half a-beam—the pirate's haven some seven miles distant. Without delay the *Rattler* dashed on, the fog still hanging so thick over the hills that the pirates' look-outs did not see her until she was right in amongst them. Then commenced a species of panic. Cutting cables and making sail, they stood for the entrance of the harbour; but a strong flood tide swept them inwards, and then, hoisting baskets of stink-pots to their mast-heads, they prepared in earnest for close action. The *Rattler* opened the ball with a shot across the bows of one vessel

making for the river; whereupon the whole fleet, consisting of seven heavily armed junks, and lorcha No. 19, belched forth broadsides of round shot, grape, and pieces of chain about a foot long tied together. Their aim generally was too high, only a few of the guns taking effect on the *Rattler's* hull. Giving them two broadsides from her starboard battery, the *Kattler* passed up, turned, and took position stem on to the tide; then, steaming towards them, she opened fire. Upon this the pirates bore up with intent to board. Lieut. Pidcock, (afterwards killed,) tending the large eight-inch gun, thereupon taking precise aim, sent a shell right into the pirate chief's large junk, which, catching the magazine, caused her to blow up with all hands; the explosion having also the effect of sinking a vessel alongside of her. The lorcha then dropped astern, ceased firing, and hoisted Portuguese colours at the mizen, with French at the main. The other vessels made the best of their way to the shore, and getting as near as possible the crews jumped overboard, and swam to the beach. There, however, they were met and knocked on the head by the villagers, who showed them no mercy; many being speared and stoned to death in the water.

The *Rattler's* boats were then lowered, manned, and despatched in charge of Commander D'Orville, Mr. West, and Messrs. Willcox and Elliot, mates; possession of the rest of the fleet being effected with little or no further resistance. Up to this period casualties on our side were inconsiderable; but news was shortly afterwards brought that some of the pirates who had escaped had captured a small junk, killed the crew, and were doing their best to get up the river. Upon this Lieut. Pidcock gave chase in the cutter. It appears that he was not very long in coming up with the miscreants in two junks, one of which he had boarded, when the other dropped alongside, and some fifty men, who were hid in the vessel in possession, rushed up from below and overpowered them. The last seen of Lieut. Pidcock alive was on his knees, (with his sword through a Chinese,) borne down by half a dozen spears. Two had fallen by his hand just before he dropped. George Ryder, quarter-master, and John Phillips, able seaman, both went down with him, side by side, fighting desperately to the last. The rest of the cutter's crew were driven overboard, all of them bearing honourable testimony to a brave defence of their gallant though less fortunate comrades. Edward Ward, ordinary seaman, has no less than fifteen spear wounds, some very deep ones, and it is doubtful whether he will recover. The people on shore behaved admirably, sending off sampans to pick up our men as they were repulsed; and by their aid the wounded men succeeded in getting back to the *Rattler* about half-past 8 p.m. The whole of this encounter being out of sight of the steamer, the grief felt on board at the painful and unexpected result, may be easily imagined. Immediately the gig and a cutter were manned and despatched in charge of Commander D'Orville, Mr. West, and Mr. Willcox; but the night was so dark that although they pulled on until 2 a.m., nothing whatever of the junks could be seen. Soon after daylight, too, the pinnace was hoisted out, a gun got into her, and manned and armed, the three boats again started, in charge of Con-

mander D'Orville, Mr. Bronsdon, purser, (volunteer,) and Messrs. Willcox and Elliot. They returned about 7 30 P.M., having seen nothing of the pirates, but having succeeded in recovering the bodies of Lieut. Pidcock and George Ryder.

To return to the captured junks. The burning one was speedily towed on shore and scuttled, and at low water no less than 170 pounds of molten silver were taken out of her, a few burnt dollars, and three bags of cash. Five junks and the lorcha were the following morning taken in tow; but it coming on to blow, one of the junks was sunk, and the lorcha had to be cast off. (She subsequently arrived at Amoy.) Four junks, however, were taken into the Fuhchow, together with fifty prisoners, who were all given up to the Mandarins.

Thus ended one of the most valuable achievements we ever remember to have seen recorded as the work of one vessel in China. The piratical fleet destroyed has been the terror of the coast for a long time; the detestation in which the crews were held being evinced by the conduct of the people on shore. The number of guns captured, of all sizes, was 84, of which the pirate's commodore junk alone mounted sixteen; viz. two 32-pounders, two long nine feet 18-pounders, two 18-pounder caronnades, four 12-pounders, and others of various calibre.

Where all appear to have done their duty it is hard to say more in praise of one than another. Commander Mellersh, we learn, for three successive nights, never knew what sleep was; and from continual action was hardly able to stand on his feet, which had swollen so much that he was unable to go on shore to inform Mr. Acting-Consul Walker of the success his promptitude in notifying to him had brought about. To Mr. Willcox (of whose gallantry as senior mate under the Admiral's flag at Martaban and Rangoon we have heard most honourable mention) Capt. Mellersh has given the acting lieutenancy, an appointment which we have no doubt will be at once confirmed by Admiral Pellew. Commander D'Orville, whose services with the *Rattler* were specially alluded to in our issue of the 5th of March last, bears with him from China another well-earned laurel. Of poor Lieutenant Pidcock an officer writes—

“He was dreadfully wounded about the head. Poor fellow, his messmates have lost a kind-hearted friend, and the service a clever and most zealous officer. He died a warrior's death, and we buried him, between Namquan and the Incog Islands, with all military honours.”

The lorcha, No. 19, has been given over to the Portuguese government. Well manned and handled by the pirates, it was only by superior sailing the *Spec* succeeded in escaping her clutches.

Killed: George A. Pidcock, 2nd lieutenant; George Ryder, quartermaster; John Phillips, A.B.

Wounded: William Boyce, painter, severely; Edward Ward, ord., dangerously, 15 wounds; Peter Doige, A.B., severely; George Wright, A.B., severely; Douglas Collins, A.B., severely; William Capon, 1st class boy, severely; Thomas Kelly, A.B., slightly, stone bruises.

RECENT BOTTLE PAPERS.*

(Continued from page 440.)

Atlantic Ocean.

The following note was picked up in a sealed bottle on the morning of the 19th April, four days after it was thrown overboard, by a fishing boat of Mr. F. Meyers, whilst turtling in the bay called Yellow Cliff, or the Salinas Crab Island. As the drift of current in this case was so short, and the finding of the note not of recent date, the information may not be of much value, nevertheless we publish it in accordance with the request of the writer particularly as the *Magdalena* is now in port:

“14th April, 1853.

“*Magdalena*, R. W. I. Mail Packet (Lieut. Chapman, R.N., Commander; Lieut. Newenham, R.N., Admiralty Agent), *en route* for Saint Thomas and England. Left Jamaica 11th April. at noon; Jacmel 12th, at 6 30 P.M.; Pto. Rico 13th, 4 P.M.; and now off Sail Island. At daybreak, 15th, this bottle being thrown overboard to ascertain the drift of the current. Please when this is found to state when and where in the newspapers, giving all particulars respecting it fully. All well on board of the ship.

“W. P. NEWENHAM, Lieut. R.N., Admly. Agent.”

St. Thomæ Tidende.

DERWENT.—Track No. 93 a.

The following was picked up at sea on Sunday morning the 5th inst at the east end of this Island, by a fishing boat, and handed to us for insertion:

“*Derwent*, R.W.I. Packet, Captain Ellison, *en route* from Demerara to Barbados, with H.M. mails, in charge of Lieut. Wm. Pearse Newenham, R.N., Admiralty Agent. Moderate and fine, wind E.N.E., course N.b.W., going 9 knots. Left Demerara April 25, 6 P.M. At noon this day, lat. 9° 28' N., long. 58° 41' W., this bottle was thrown overboard. Please say in papers when and where picked up.

“26th April, 1853.”—From the *St. Croix Avis*, June 7.

H.M.S. DAUNTLESS.—Track No. 101 a.

H.M. Consulate, Galveston, June 24, 1853.

SIR,—I have the satisfaction to transmit the following extract from a periodical published in this city, bearing date the 21st instant.

A bottle containing the following was recently picked up on the beach near Matagorda.

“This was thrown from H.B.M.S. *Dauntless*, on the 2nd November, 1852, when in lat. 17° 42' N., and long. 67° 4' W.”

I have also to state, that a notice was thrown from H.M. sloop *Electra*, on the 16th March, 1848; the Lighthouse at the S.E. pass of the Mississippi bearing W.S.W. about eighteen miles, and was picked up on Galveston Island on the 27th July of the same year. At that time I forwarded this notice to Capt. F. W. P. Bouverie, R.N.

I am, &c.,

ARTHUR T. LYNN, H.B.M. Consul.

Sir Francis Beaufort, K.C.B., F.R.S.

[It has made good about 1740 miles in 230 days (about 7.5 miles per day). There appears to be a tendency of the bottles in the Gulf of Mexico to fall on

* For Chart of Tracks see number for November 1852.

shore in this vicinity. This is the eighth that has gone there. The outset of the Mississippi may have something to do with it; that of the *Electra* is remarkable as being to the Eastward of that outset.—Ed.]

ST. IA.—Track No. 45 c.

British Consulate, Pernambuco, January 7, 1853.

SIR,—In accordance with the request contained in the accompanying paper, I enclose it with the translation of a letter from the proprietor of the *Engenho*, in which it was contained. The nearest shore to Genepapo is in about lat. 8° 35' S., and long. 35° 37' W.

I am, &c.

H. AUGUSTUS COWPER, Consul.

To the Editor of the *Shipping and Mercantile Gazette*.

Translation.—Most illustrious M. Consul of H.B.M.—Enclosed I transmit to your lordship a paper which was found by a fisherman, and supposing that it may be sufficiently interesting to the commerce of H.B.M., I hasten to communicate it to your lordship, making known that the said paper was found on the 28th December in a bottle. I avail myself of the occasion to offer my services to your lordship, at whose disposition is your lordship's obedient and obliged servant,

Mar Camp, Engenho, Genepapo, Jan. 3, 1853. FRANCISCO D'ALBERG.

“Thrown overboard from the barque *St. Ia*, on her passage from Coquimbo for Swansea, in lat. 8° 44' S., long. 28° 50'. The Captain of the said barque requests the person who finds it to report the situation in which it is found to the Editor of the *Shipping and Mercantile Gazette*. November 28, 1852.”

[The place where it was found is near Cape St. Augustine; the course is about West 360 miles. The date of departure appears wanting.]

AMITE—Track No. 44 b.

Extract from the Remarks of H.M.S. *Polyphemus*, Comm. G. Phillips, for 1852.

“A bottle was picked up near Cape Shilling, in Sept. 1852. It contained a paper stating that it was thrown from the Spanish polacca *Amité*, Capt. Don Felis Alzeno, on the 19th July, 1852, at 11 A.M., in lat. 0° 20' S., long. 16° 30' W. of Cadiz, on a voyage from Barcelona to the River Plate. A request appended that it be notified to the Café de Manan in Barcelona. Picked up at Cape Shilling, on the 18th Sept., 1852.”

[This bottle appears to have found its way into the Guinea current, and, similar to the bottles No. 43 a and 32 a, to have been drifted on shore on the African coast. But it started close from the place of No. 44 a, which went to Martinique in 155 days, leaving in February, whilst this left in July.]

H.M.Tr. DILIGENCE.—Track No. 21 a.

Coast Guard Office, 21st July, 1853.

SIR,—Herewith I have the honour to transmit the enclosed information received this date from the officer in command of the Dunkeehan District, Co. Mayo, the same having been picked up in a sealed bottle on the 17th inst. at 8 A.M.

I have the honour, &c.

E. OMMANNEY, Dep. Comptroller General.

The Secretary of the Admiralty.
NO. 9.—VOL. XXII.

3 P

"H.M.S. *Diligence*, Arctic Expedition, 30th of May, 1853, lat. 55° 2' N., long. 16° 24' W., this bottle was thrown overboard by Lieut. Jas. E. Elliott, thick fog, *Desperate* and *Phanix* not seen since last evening, in tow of *Baracouta*, *Breadalbane* in Co.

"J. E. ELLIOTT, Commander."

H.M.S. MYRMIDON.—Track No. 14 a.

Government House, Grand Turk, 6th May, 1853.

SIR,—I have the honour to forward the accompanying paper contained in a sealed bottle found by an inhabitant of these islands on the eastern shore of Salt Cay at 2 o'clock P.M. on the 5th inst. (May, 1853).

I have the honour, &c.,

The Secretary of the Admiralty.

FRED. FORTH, President.

"H.M.S. *Myrmidon*, 29th Aug. 1851, lat. 36° 19' 10" N., long. 12° 24' 57" thrown overboard at 1 P.M., having run since noon true S.W. 7 miles.

"W. KYNASTON JOLLIFFE, Lieut. Commander."

[It will be seen that No. 14, the *Emerald*, starting from close to this in Dec. 1831, went to Anegada in 387 days; while this, starting in August, 1851, has gone to Turks Island, further West, in 614 days.]

U.S.M.ST. PHILADELPHIA.—Track No. 117 a.

H.M. Consulate, Galveston, July 2, 1853.

SIR,—It is to be presumed that to ascertain the force and direction of the currents in the Gulf of Mexico is the object of the notices of the positions of vessels which from time to time have been thrown overboard; and I consider it therefore of sufficient importance to state, in addition to the information contained in my letter of the 24th June, that a bottle was found on the beach 28 miles east of this city on the 30th ultimo, containing the following:—

"U.S. Mail steamer *Philadelphia*, 25th April, 1853, at M., lat. 22° 8' N., long. 85° 48' W. When found mention date and place, and communicate to Lieut. Maury, National Observatory, Washington.

"JAS. P. M'KINSTRY."

I am, &c.

Sir Francis Beaufort, K.C.B. F.R.S.

ARTHUR T. LYNN.

[This bottle has taken the same course as all the others which have passed between Cape S. Antonio and Cape Catoche. There may be many strewed about undiscovered on the shores of the Gulf, but those about Galveston seem to have the advantage of being the first found.]

THE FIDELIA.

British Consulate, Bayonne, April 16.

SIR,—I enclose a copy from a paper found in a bottle on the 14th of this month, about three miles to the north of the mouth of the River Adour, at Bayonne.

I am, &c.

F. J. GRAHAM, Consul.

"On board ship *Fidelia*, off the Banks of Newfoundland, becalmed. J. H. Wait and William Barwick, of Newcastle-on-Tyne, March 13, 1852."

Times.

[We preserve this in our list, but have excluded it from our chart as the place of its departure is not given.]

MEDITERRANEAN BOTTLE PAPERS.

We now commence a series of Mediterranean Bottle Papers, which we propose to continue as they turn up. We have affixed the letter E or W to the papers according as they may have started in East or West Longitude from Greenwich, distinguishing each by an Italic letter following the degree of longitude, and between which degree and the next the place of it will be readily found by means of that letter. For instance, the first, E 2 a, will be found between long. 2° E. and 3° E. We purpose adding hereafter those which we may find already published with the view of keeping our collection complete with all such known experiments in this sea.

E. 2 a.—H.M.S. RODNEY, *Capt. C. Graham.*

Algiers, March 15, 1853.

SIR,—I have the honour to transmit you herewith a letter which I have just received from the British Vice Consul at Philippeville, enclosing me a paper which had been dropped at sea from H.M.S. *Rodney*, on the 23rd of February last, in lat. 37° 9' N., long. 2° 36' E., and had been found enclosed in a bottle and picked up by a Neapolitan fisherman on the 8th inst. at 9 A.M., lying on the beach in a creek of the bay of Stora, Philippeville, between Cape Filfila and the first point of the River Saf Saf, in lat. 36° 50' N., and long. 4° 40' E., or thereabout, of the meridian of Paris, according to the Vice Consul's report.

I have the honour, &c.

JOHN BELL, Consul.

To the Secretary of the Admiralty, London.

British Vice Consulate, Stora, Philippeville,
March 12, 1853.

SIR,—I have the honour to transmit to you hereby a paper which seems to have been launched at sea from H.M.S. *Rodney*, on the 23rd of February last at the lat. of 37° 9' N., and long. 2° 36' E., and which has been found enclosed in a bottle by a Neapolitan fisherman named Francesco Niglio, who soon after brought to me, yesterday, 8th inst. at 9 o'clock A.M., lying on the beach of a creek of the bay of Stora, Philippeville, situated between Cape Filfila and the first point of the River Saf Saf, bearing lat. 36° 50' N., and long. 4° 40' E. or thereabout (meridian of Paris).

I have the honour, &c.,

JOHN M. EUNT, Vice Consul.

To the Secretary of the Admiralty, London.

“ H.M.S. *Rodney*, 23rd February, 1853.

“ Lat. 37° 9' N., long. 2° 36' E.

“ CHARLES GRAHAM, Captain.”

It has made good one hundred miles E.B.S. in seventeen days, equal to about six miles per day.

E. 10 a.—H.M.S. BRITANNIA, *bearing the Flag of Rear-Adm. Deans Dundas.*

British Consulate in Albania,
Prevesa, Feb. 24, 1853.

SIR,—I have the honour to transmit to you the annexed paper, partly destroyed by the individual on extraction from the bottle containing the same,

which was found in this neighbourhood off Mitica Bluff, on the 23rd instant, after heavy gales from the S.W.

I have the honour, &c.

SIDNEY SMITH SAUNDERS.

The Secretary to the Admiralty.

“ H.M.S. *Britannia*, 2nd September, 1852.

“ Lat. $37^{\circ} 29'$ N., long.

on her passage from Gibraltar to

Wind N.W.b.W.

bearing the flag of Rear Ad

“ JOHN DICKSON, Es ”

The longitude is lost from the paper, but it appears by her log that it was $10^{\circ} 16' 30''$ E. at noon, the lat. as given in the paper agreeing as at noon, on the 2nd Sept., and the wind also.

It seems to have passed between Cape Bon and Sicily, rounded Cape Pas-saro, and thence to Prevesa, taking 174 days to make good 540 miles; about 3.1 per day—to the eastward. The wind appears in the interval to have been principally from the westward.

E. 17 a.—H.M.S. SPITFIRE, *Comm. T. Sprutt.*

British Consulate General,
Tripoli, Sept. 18, 1851.

SIR,—The enclosed paper was sent to me by the Governor General of this Regency about a month ago, with a message importing that it had been found enclosed in a bottle, thrown up on the sands in the gulf of Sidra.

I requested His Excellency would have the kindness to ascertain from the person who had forwarded it the precise time and place when and where it was found.

A few days since His Excellency received a note from the local Governor reporting that it was found on Sunday, the 3rd of August, on the beach near the Syrt Castle; a fort lately built a little to the westward of Marza Zaffran, in long. $16^{\circ} 35'$, lat. $31^{\circ} 10'$.

I have the honour, &c.,

G. W. CROWE, H.M. Agent and Consul Gen.

The Secretary of the Admiralty.

“ H.M.St.V. *Spitfire*, 14th June, 1851.

“ Lat. $36^{\circ} 8'$ N., long. $17^{\circ} 58'$ E., light N.W. wind.

“ T. SPRATT, Commander.”

It has made good a S.b.W. course 300 miles in 95 days, about 3.2 per day.

HEATED AIR AS A MOTIVE POWER.

At an evening meeting in February last at the Institution of Civil Engineers the subject was the renewed discussion of Mr. B. Cheverton's Paper, “On the use of Heated Air as a motive power.” The construction of Ericsson's Engine, and the application of the Regenerator were first described, and it was then argued, that the action of the regenerator almost amounted, theoretically, to the creation of force, and that it was not of the utility that had been presumed. From the best accounts, it appeared that various practical difficulties existed in the application of heated air as a motive power; and, from calculations which were entered into, it was shown that the mean pressure of the air in the working cylinder being 4½lbs, the engines making eleven strokes per minute, a total power was developed, which,

after making a proper deduction for friction and waste, did not exceed 208 H.P. with the cumbersome machinery which was described. It was then contended that with such a fine model of a ship and under the circumstances of the experiments, a greater speed than seven miles an hour ought to have been attained with a less expenditure of fuel; and that therefore, at present, the Caloric Engine could not be practically regarded as a successful invention.

Tables and diagrams were exhibited for the purpose of showing the relative amount of power, obtainable from a given quantity of heat, applied in expanding air and in producing steam; showing that, after taking into account all the conditions of each case, the useful effect would be nearly the same independent of the regenerator; which, if not a fallacy, would turn the scale in favour of the use of heated air.

It was submitted by other speakers that the machine involved a mechanical fallacy, as the regenerator produced no mechanical effect whatever. It might be granted that the regenerator of Ericsson's engine received and redelivered the heat in the manner described, and that when the working piston was descending the heat was deposited, and that when ascending the heat was restored, but that operation could only result as a *consequence* of the motion of the piston and not as a *cause* of its motion—hence no mechanical effort was made. This result was easily shown by assuming the contents of the pump to be 1 and the contents of the working cylinder to be 2. If the working piston was at the bottom of the cylinder and in equilibrio with the external atmosphere, as regarded the pressure on an unit of surface, and then began to move and the air to be heated, in its passage through the regenerator, from 32° to a temperature of 512°, so as to double its volume, the lower piston would constantly produce a vacuity, so to speak, of 2, to be constantly fed by a supply of 1 from the pump, expanded into 2 by the increase of temperature—consequently, the piston, at every instant of its motion, remained in equilibrio with the external atmosphere, and no mechanical effect could result. Still in Ericsson's engine a mechanical effect had been produced, but then this mechanical effect was no greater than would be produced without the aid of the regenerator by the simple action of the furnace itself, and not so economically as by the use of steam.

Further investigations were entered into of the theory of the Air Engine, and the general result appeared to exhibit so much distrust of the accounts already received of the working of the Caloric ship, that it was suggested that the further discussion of the subject should be adjourned for a few weeks, and, meanwhile, another paper was proposed to be written, so that the question could be more fully discussed on the next occasion.

UNITED STATES EXPLORING SQUADRON.

A letter has been published describing the United States squadron under the command of Commodore Ringold, in which the writer says,—

“The manner in which this expedition is fitted out reflects credit even on one of the greatest republics that ever existed since the world began. Every new invention in mechanics that can be applied to lessen labour is there. Their magnificent six-oared whale boats (we have none like them) can be propelled by a wooden screw, that takes to pieces, by one of their respective crews, with a fair velocity; a neat contrivance turns them into a sledge or forms a cradle for carrying them over jagged rocks. The fashion in which their crews are armed makes one ashamed to look at our ancient firearms. Each man has a pair of neat seven barrelled revolvers and a rifle of the newest construction that primes itself, so that a man can fire several rounds without taking his eye from the sight vane. In addition to this, they have the bowie

knife, two feet in length, which is carried in a sheath on the right thigh. The utility of this assassin like weapon has never been proved in actual warfare, but I have always been of opinion that a shorter and lighter cutlass than that now supplied to the British Navy would be of more service in a *melée*—which all sailors' combats must be—there is no measuring swords in boarding. In all cutting out expeditions what an advantage the revolver must give the possessor; and, however we may put it off, the day must come when our Navy will be armed with them too. The *Vincennes* has twenty-eight chronometers on board; and, being a large ship, several cabins are full of every description of nautical and astronomical books, and instruments of the latest construction."

MAGNETIC VARIATION.

Table showing the mean monthly westerly declination, or westerly variation of the magnet, and the mean monthly dip, at the Royal Observatory, Greenwich, in the year 1851.

1851.				
	Variation, W.			Dip.
January	22°	20'	18"	68° 39' 58'
February	22	19	27	68 40·74
March	22	19	22	68 39·92
April	22	19	21	68 42·73
May	22	18	26	68 39·34
June	22	14	0	68 39·45
July	22	16	47	68 38·48
August	22	17	11	68 42·79
September	22	15	10	68 40·12
October	22	17	16	68 41·23
November	22	20	35	68 39·98
December	22	19	32	68 39·81

The mean variation has been found by the application of corrections (deduced by Mr. Glaisher from two-hourly observations taken during the seven years 1841-7) to the mean of readings taken at 9h., A.M., 1h., 3h., and 9h. P.M. daily. The mean dip by taking the mean of observation at 9h. A.M., 3h. and 9h. P.M., on one day in each week.

G. B. AIRY.
Astronomer Royal.

NEW BOOKS.

THE MAGNETISM OF SHIPS AND THE MARINER'S COMPASS; being a Rudimentary Exposition of the Induced Magnetism of Iron in Seagoing Vessels and its action on the Compass in different latitudes and under diversified circumstances.—By William Walker, Commander, R.N.

A handy little book with the above important title, fresh from the pen of Captain Walker, the experienced Examiner in Navigation at the Port of Plymouth, cannot but meet a welcome reception from that large class of persons for whom it is intended. We have displayed its pretensions in full; and for the reason why they have been set forth, we find in the preface that "the writer thinks that if more were known about the magnetism of ships and the mariner's compass, fewer misfortunes would befall the shipping of this and

other countries." It is enough to answer for our own, and of that we can adduce an instance in the Report on the loss of the *Victoria* in our last number. However, the fact is notorious, and let us hope that handy works, like that before us, and lectures similar to those of Mr. Towson, already alluded to, will have the effect of removing this slur on the reputation of our Mercantile Marine. The large body of owners, it is pleasant to see, are bestirring themselves at Liverpool and swinging their ships; let the example be generally followed and the wrecks of our merchant shipping will be reduced by one of the most prolific of causes. A glance through the elaborate bill of fare before us, in the shape of "Contents," assures us of our Author's determination that his book should be no less amusing than instructive. Few subjects afford more interesting anecdote in their early history than does that wonderful instrument, the magnetic needle. Looking at it in the hands of the Chinese before navigation was born, its introduction in the navigation of the Mediterranean, its variation discovered by Columbus, and its deviation of more modern discovery by our celebrated Captain Cook, the history of the mariner's compass is replete with intense interest and has claims on the special attention of seamen that surpass all the rest of his nautical instruments together. But we make these remarks with the hope of inducing our seamen to look more into such matters than they are accustomed to do, and assure them that they will find both amusement and instruction, given in their own blunt honest language, in the "Mariner's Compass" as expounded by Capt. William Walker.

NOTABLE WRECKS, ETC.

THE LARRISTON.—The Overland China Mail contains the following respecting the loss of this vessel on that coast.

"The screw steamer *Larriston*, Capt. Baylis, belonging to Messrs. Jardine, Matheson, & Co., was totally wrecked off Turnabout Island, at 10 o'clock on the night of the 1st of May; and thirty-one of her crew, who attempted to reach the shore on spars and by swimming, were carried to the S.W., and probably all drowned. How the *Larriston* managed to get so far out of her course, it is not easy to comprehend; but probably no allowance was made for a four knot current then running. The vessel, as above-mentioned, struck upon the rocks about ten at night, and next morning at eight o'clock pieces of the wreck were seen floating past the *Zephyr*, 30 miles distant. Capt. Baylis, in a letter to a local paper, speaks of a reef of rocks extending half a mile N.N.W. from the island; but we are assured that he is mistaken as to the distance, and that the reef consists of five or six solitary rocks, so small, that had the engine not been stopped when the first alarm was given, the vessel would have answered her helm more rapidly, and probably shot clear of them: as it was she was brought up by the outermost. The first person who observed the land is said to have been the Rev. Dr. Parker, who pointed it out to the second officer. The majority of the passengers and a portion of the crew got ashore in boats before midnight; but the rest remained on the bowsprit and jibboom in the utmost danger until ten o'clock next morning, when the boats succeeded with great difficulty in reaching the wreck, and removed all but Capt. Baylis, the chief and second engineers, and two lascars, who also, however, were ultimately landed in safety. All the passengers have since reached Hong Kong in the *Zephyr* and *Audax*."

"Turnabout" is a mere rocky islet not far from that of Oseu, at the northern entrance of the Formosa Channel, and is the very place pointed out by Capt. Cracroft as the proper site of a lighthouse! The excellent remarks of this officer will be found in his interesting journal of the *Reynard's* voyage in

our last year's volume, (p. 580,) and further alluded to in our number for May last (p. 252). Indeed so near are these two islets, that it matters little on which the light he proposes is placed. With respect to the remarks in the China Mail as to the reef reported half a mile from the island, they fully coincide with that officer's opinion from his knowledge of the coast, as well as the surveys of Capt. Collinson, that no reef projects off Turnabout in any direction whatever, a fact which he assures us he can vouch for from personal experience, having been within a cable's length of it. It is unfortunately the case that more than one wreck must take place to illustrate the want of a lighthouse, of which that on Cape Receife is a tolerable proof,—and therefore the sooner the subject of a light on Oceau or Turnabout is taken up the better. The loss of this fine vessel will fall heavily on the house of Jardine, for she had a valuable freight as well as mails. We trust that the circumstances of the wreck may become the subject of inquiry, for the benefit of navigation, which no doubt the presence of the Commander of the vessel as well as a gentleman of the firm being now in London, may facilitate.

THE ARGYLE.—The barque *Argyle*, Capt. Young, Master, and the greater part of her crew, has been lost off the eastern shore of Newfoundland, while on a passage to Quebec. The ship sprang a leak on the 19th of May, in terrible weather, and the exertions of the crew of nineteen men to reduce the water by pumping were thrown away. Recourse was had to the boats, but the jolly-boat went adrift in launching. Having obtained as much provisions and water as could be got at, the order was given for all hands to take to the long-boat. They numbered in all seventeen—three passengers (two of whom were females), first and second mates, eleven seamen, and the master. All being in readiness, the boat was pushed off amid a heavy sea, which every moment threatened to engulf them. Within an hour after leaving they saw the ship go down head foremost. They kept the boat head to wind the whole of that night and part of the next day, when they hoisted sail and made for a westerly course. On the third day their situation became alarming, the water and provisions were exhausted; the Master did all he possibly could do to cheer the men on, and one and all laboured to make way by pulling at the oars, &c. The next day, however, passed, and following night, with the succeeding eight days and nights, without sail appearing in sight. During that long space of time many miserably perished. On the sixth day two of the crew died from want. On the seventh, Capt. Young lost his two mates, the male passenger died also on that day. The eighth, several hands became delirious from drinking sea water to quench their thirst, contrary to the earnest appeals of the Master not to touch it. One seaman, whilst in this state, leaped overboard and was drowned. The female passengers possessed extraordinary constitutions, otherwise they must have quickly sunk under their awful privations. A heavy sea was continually running, with strong westerly gales; and it was as much as three men could do by bailing out the water to keep the boat afloat. On the evening of the ninth day their frightful situation was at length discovered by a French brig, the *Harmony*, belonging to St. Malo, Capt. Preville, who, observing at a distance the helpless condition of the boat, bore down to its assistance, and picked up the wretched people in lat. 50°, long. 52° W. Their condition when hauled on board was truly awful—some insensible and in a dying state. The Master of the *Harmony* placed every comfort he possessed at their disposal, applying every possible remedy to resuscitate those whose lives were in danger. Two, however, never rallied, but shortly expired. Captain Preville lost no time in making for Quirpon, a small port on the coast of Newfoundland, which they succeeded in gaining in a few days. By the last accounts it appears that the survivors were fast recovering. They had been taken on board of the government cruiser *Charles*, to be conveyed to Quebec. In

all the number who perished amounted to fifteen persons. The owners of the *Argyle* are reported to be insured.

THE COUNTESS OF WINTON.—The following tragical occurrence on board the British ship *Countess of Winton*, Cringle Master, while on a voyage to Liverpool from Shanghai, has been reported at Lloyd's:—She left the latter place on the 27th of April, and on the 17th of May the captain gave some order to the mate. For some reason or other he thought fit to disobey the order, and, high words ensuing, the mate armed himself with a cutlass and rushed at the captain, whom he murdered with the weapon. The crew then endeavoured to seize the mate, but, seeing the movement of the men, he immediately jumped overboard and disappeared. He was not seen afterwards. The second mate then took command, and the body of the murdered Master having been solemnly consigned to the deep, the ship continued her course to England.

NAUTICAL NOTICES.

PASSAGE FROM SINGAPORE TO AKYAB, COAST OF ARRACAN.

Singapore, April 15, 1853.

SIR,—Arracan being now so much frequented that there are generally in the rice season from fifty to eighty vessels at one time in the port, a considerable portion of which are chartered from the Straits settlement, a few observations on making the passage from the latter places may perhaps be useful.

These observations are principally intended for the Commanders of home ships, and have no claim to originality, being well known to all country wallahs, every one of whom I think will agree with me.

Leaving the Straits then before the 20th January, a passage to the eastward of the Andamans may probably be made as quickly as to the westward, by going through the Cocos or South Preparis Channels; but in February, March, or April, the unfortunate who attempts it may think himself lucky if he makes his passage in forty days, as nothing but N.W. and west winds are to be found, very light, with a current to east and S.E. of seldom less than thirty miles a day, and these winds and currents prevail in the whole of the channels between the Andamans and Cape Negrais, rendering working to windward work indeed. Added to which, he will find no N.E. monsoon on the coast of Arracan, but exactly as Horsburgh describes, winds veering from W.N.W. to north, but very seldom to the eastward of north.

The proper passage to take in these months, is to steer out through the Ten Degrees Channel, or Duncan's passage; or, if the former cannot be fetched, no matter, go on to the westward, through any of the passages between the Nicobars, and even to the southward of them, but as long as you can lay west or W.b.S., go on, and do not lose time working to the N.E. I own that it requires a good deal of what may be termed moral courage, to steer away to leeward, as we have been accustomed to consider it, but never mind, go on, you will generally one day with another make a W.N.W. course, and when between the meridians of 88° and 90° E. you may either work to the northward until you get the N.W. winds, or stand on as many do and probably make the coast or nearly so; but there you are sure of southerly winds, and running up towards the head of the bay, the wind will haul west and N.W., and the calms which prevail further from the land be avoided. Two ships which passed Penang about the same time as myself this season, followed this latter route, while I beat up on the meridians of 80° and 90°, and we all made the same passages, namely, twenty-three days; but they came in without

making a tack, describing a complete semicircle, while my track on the chart did not look so well.

The later in the season the farther east southerly winds may be expected to reach, and in 1851 my ship made the passages from the Ten Degrees Channel to Akyab in the last six days of March by running up on the meridian of 90° with the wind S.S.W. to S.S.E.

I made inquiries of several commanders this time in Akyab, and found that all those without exception who followed the tracks I now recommend made much more speedy passages than those who went to the eastward; the quickest passage I heard of by the latter route, was forty days, and one English vessel was fifty-nine days, almost ruining the unfortunate charterer, for rice was rapidly rising, and owing to the length of passage was so high on his arrival, that his money would not purchase a full cargo, and being bound to provide a full cargo, or pay freight for such, he had to borrow money at 20 per cent., all of which would have been avoided had he made a moderate passage.

On making Akyab ships should guard against a current increasing to one and a half miles per hour as they near the land, which is likely to set them to leeward; at the same time remember the Oyster Reef, which is very dangerous. The talented Master-Attendant at Akyab is about proposing to the Government to erect a lighthouse on it, which, with the two now in use at the river's mouth, will make the entrance easy enough.

I remain, &c.

E. M. SMITH.

To the Editor of the Nautical Magazine.

MIDLOTHIAN ROCK, ENDEAVOUR STRAIT.

Singapore, 3rd June, 1853.

Sir.—I have to inform you, for the benefit of Navigation, that on my passage from Hobart Town to this Port, via Torres Straits, in the *Midlothian*, I struck twice on a sunken rock off the S.E. end of Entrance Island, Endeavour Strait, distant from that Island about a mile. The ship was going seven knots at the time and dead low water, spring tides; it was so momentary that no accurate bearing could be taken; she had been just hove-to and no bottom at seven fathoms.

I. C. GIBSON, Master.

The above mentioned Rock is not in any of the latest charts.

AMOY HARBOUR, CHINA.—*Rock on which H.M.S. Rattler, Commander A. Mellersh, struck on the 15th March, when leaving that Harbour.*

A letter, dated the 19th of March last, from Commander Mellersh reports that H.M.S. *Rattler* struck on a sunken rock, not laid down in the charts, the lead at the time giving 5½ fathoms on the port side, and 7 on the starboard. The ship was going between three and four knots at the time; and the following cross bearings were taken from it afterwards: Joss House S. 37° E.; Flagstaff on Signal Hill N. 46° E.; Kulongsue, north end, N. 52° W., south end, S. 52° W. "It is quite a pinnacle, with only 2½ feet on it at low water, the top of it being so small that the lead rolled off it into 6½ fathoms on the side towards Amoy; while on the side towards Kulangsue there were 8 fathoms within half the ship's breadth."

ESQUIMAUX HARBOUR, LABRADOR.—*Rock on which H.M.S. Basilisk, Commander F. Egerton, grounded.*

A letter, dated 15th June last, from Commander Egerton reports H.M.S. *Basilisk* having grounded on a reef, without receiving damage, in Esquimaux Harbour. The Commander says, "I anchored at nine o'clock this morning, and an hour afterwards, on the ship swinging in shore, found that she was aground on a lime stone reef not laid down in the chart, which, on that spot or any near it, marks 5 fathoms. The reef is so steep that we had only 13 feet under the inshore or port paddle-box, 20 feet alongside the starboard side, and 9 fathoms within half the ship's breadth outside.

"In Captain Bayfield's directions (which, as well as the charts, we have generally found wonderfully correct) it is said, 'Do not anchor in more than eleven fathoms,' whereas we found ourselves quite near enough and good holding ground in fourteen.

"The bearing of our first anchorage were, Esquimaux Point E.½S.; north-east point of Island S.E.b.E.; north-west point of Island N.N.W. The bearings of the last anchorage were, Esquimaux Point E.b.S.½S.; north-west point of Island N.N.W. and Sea Cow Island well open of N.E. point."

The above positions depending on compass bearings are not entitled to that confidence which belongs to angles, and in an anchorage where under one paddle-box there are but 20 feet and half the ship's breadth from the other there are 9 fathoms, are totally untrustworthy. We do not consider they in any way affect the accuracy of Captain Bayfield's survey.

DIRECTIONS FOR THE STRAITS OF MINDORO AND BASELAN.—*By R. L. Fraser, "Lady Peel."*

The best entrance into the Mindoro Sea is, doubtless, that by the Northumberland Straits, as the North Rock, Pinnacle Rock, and the high land of the Calamianes mark well the south side, as the greater or southern Island of the Apoo shoal does the north side, the latter Island being a beacon also to avoid the sunken seven feet rock due west of it.

First, I recommend; get into the latitude of the north rock and steer for it; it may be passed on either side within half a mile (two or three miles west of it is a bank with eleven or twelve fathoms on it); the North Rock is of a dark slate colour, no trees, has two humps, and, when closely approached, appears excessively ragged. Steering from hence E.S.E., appears the Pinnacle Rock, too remarkable to need description, and next the Turrets, a collection of rugged pinnacles. Steering still the same course, you pass the two islands, which appear closer to the land than laid down, and a few miles further another collection of rocks, the northern something resembling a bottle, some trees on its summit forming the neck and head. The eastern group are now in sight, and, from their size and distance, likely to be mistaken for Ambolo and Ylin; the Mindoro shore being low hereabouts near the sea is scarcely seen yet. The course now must be altered to round the eastern group at a safe distance, and steer a course for the Quinilubans; this ground having now so often been run over without the discovery of anything but the Betsey bank, (least water five fathoms,) may be considered pretty safe, and better it certainly is to borrow on the west side than run any risk from the Semeraras, Panacatan and Camden shoals. Pass the Quinilubans at five or six miles distance; in this track you will scarcely make out Banco Seco or Dry Bank (seco meaning dry), notwithstanding it has now several trees upon it; and close in with the land about Antigua, Asloman Naso or Luegas Island, according to the wind; and in running or working to the southward give a good berth to the Golconda and Sultana shoals.

Horsburgh's positions so far seem to me the best authority we have yet; but, nevertheless, I give the *Conway's* for verification if opportunities offer. No dependence can be placed on the results of altitudes by the sea horizon in these Straits, the refraction being so great and variable.

		<i>Conway.</i>	<i>Sir E. Belcher.</i>
Centre of Quinilubans.	11° 29' N. 120° 47' E.		
Banco Seco.....	11 25	121 34	
Isle of P. Naso Luegas	10 29	121 55	
Samboangan		122 3	6° 54' 55" N. 122° 5' 13" E.
Coco	6 45	122 15	N. M. p. 375, 1845.
Sibago, east islet of ..	6 46	122 19	
Baseelan, east end	6 41	122 17	
Panagatan			11° 50' 56" N. 121° 18' 55" E.

Private Authorities.

Golcondas shoal 10° 5' N. 121° 47' E.

Sultanas shoal, 9° 43' 30" N. 121° 44' E.

Cuayayanas shoals are supposed to reach to 10° N.

Ames shoal: Point Caldera N.W.; Sangboys W.b.S.; Baseelan, eastern peak, S.E.b.E.; the eastern Santa Cruz Island E.½N.; western Santa Cruz Island N.E.½E., distant four miles.

Unicorn or Western shoal: the north end of western Santa Cruz E.b.S.½S., seven miles; Caldera fort N.½E.; Samboangan fort N.E.b.E.½E. (*Williams, N. M.*, 1843, p. 509).

Other shoals, it is supposed, exist, ten or twelve miles off, in the same direction as the last mentioned shoal.

Therefore I recommend making the land at Caldera and steering from it, when on a bearing of N.N.W., a S.S.E. course for Baseelan, taking care to allow for a strong tide athwart the course, either way. Should the weather be thick or squally, as commonly, objects in the Straits will be obscured, but the Sangboys rarely; and when the southern Sangboy bears W.½N. you may alter your course to E.N.E., being close enough to avoid the shoal bank from Malvanan Island, or five miles off.

There is a nice snug looking port and carenage apparently behind the Island. I observed three or four Spanish ensigns and some white flags flaunting gaily to the breeze as I passed, and a faluca or gun-boat, probably the mail, coming out; but time and a favourable breeze would not allow me to communicate.

ROCK OFF CAPE JAFFA.

While at Adelaide, on my outward passage to Sydney, I was informed by the Master of one of the coasting vessels of the existence of a dangerous reef, eighteen or twenty miles off Cape Jaffa, bearing about west, being directly in the track of vessels running down the coast by south from it, not marked on any of the Admiralty charts.

On my return from Sydney, I found that the ship *Margaret Brock* had been totally lost on it and another vessel, the *Rivals*, had struck on it but got off with slight damage.

On my arrival at King George Sound, homeward, I learnt that a Dutch vessel, carrying coals, had struck on a sunken rock in the channel between Michaelmas Island and the main, also not marked on the chart.

W. HALES FRANKLYN,
Commander Australian Royal Mail Steamer *Sydney*.

MAPLIN LIGHT.—The Masking of the Maplin Light having been carried into effect, notice is hereby given that the said light is not now visible to the Northward of the line of the Blacktail Spit, the S.E. Maplin, and Maplin Buoys.

OXÖ FIXED LIGHT, ENTRANCE TO CHRISTIANIA, NORWAY.—[No. 138.]—The following notice was issued by the Hydrographic Office on the 25th Feb. last:—Oxö, long. 8° 6' 35" E., lat. 58° 3' 25" N. Existing Light: 1 fixed light, with a flash every 4th minute; to be altered into 1 fixed light 2nd order; 135 feet above the level of the sea; visible at sea at the distance of 18 miles. Her Majesty's Government has now been officially informed that the above-mentioned alteration has been carried into effect, and that the light of Oxö reappeared on the 16th July.

SIMONS BAY.—The sunken rock which has been discovered near the Roman rocks in Simons Bay, has been marked by a Beacon, on which is legible the word "Rock," as it was not deemed judicious to alter the position of the Light vessel.

The Swedish Government has made Slitohamn, on the east side of Gothland, about 16 miles north of Ostergarn Lighthouse, so far a free port, that ships of all nations, coming in there from stress of weather, contrary winds, want of provisions or repairs, have to pay no ship's expences whatever, except pilotage, which is extremely moderate. The inlets and outlets of this harbour are very easy, and the depth of water admits of ships of any size to get in there, it being good anchorage with shelter from all winds.

WRECKS IN THE THAMES.—We understand that the Harbour Master of the Port of London has reported to the Admiralty the removal of the wreck of the *Admiral Drake* and that of the *Friends*, by the aid of gunpowder, which vessels were lying sunk in Sea Reach. The Harbour Master has also reported that there is now no known wreck in the river within the jurisdiction of the Lord Mayor.

THE LATE NAVAL REVIEW of the 11th of August.

Some faint idea may be formed of the late Review from the aggregate of guns, horse-power, and tonnage in the Fleet, and from the number of men required for the full complement of each ship. There were employed 1,076 guns, the power of 9,680 horses (nominally, but in reality nearly double that amount), 40,207 tons of shipping, and ships' companies that should altogether have amounted to 10,423 hands, although the actual numbers probably fell short of that by 1,000. The Fleet thus comprised about the same number of men as are encamped at Chobhani, only that instead of being distributed in tents stretching over two miles of heath, they are cooped up in 25 ships of war, 13 of which are screw steamers, nine paddlewheel, and three sailing ships of the line. The total steam-power employed, being stated at about half its actual value, probably represents a larger horse-power than all the Cavalry Regiments in the Service put together, and when the nature of this modern agent is considered, and its adaptability for the purposes of Naval warfare, the contrast which it illustrates becomes still more formidable. For giving certainty and rapidity to the movements of a Fleet, and for all the attendant advantages which are thus secured, the steam-engine far exceeds the standard by which its capabilities are measured, and in this respect those who did not witness the spectacle can hardly realize the effect which it was calculated to produce on all thinking minds. It is not that those influences have been almost entirely disarmed which invest the Seaman's life with such perils, but we have in addi-

tion the sublime idea fully realized of man controlling the sea and subjecting the winds by a mechanical power developed by the patient observation of natural forces and the happy application of them to our wants. If, however, the Fleet in its crews and steam-power had such a grand significance, when the number and calibre of its guns are taken into the reckoning, the result is truly astounding. There were no less than 1,076 guns, the smallest 32-pounders, and as large as the largest used in the great sea-fights by which our ancestors won the sovereignty of the seas. The largest throw 84lb. shells, which would be 104-pounders if solid shot were used, and the frightful destructiveness of these missiles may be imagined, exploding on concussion, according to Capt. Moorsom's recent invention. The great feature, however, of the armament of the present Fleet is its 68-pounders, which produced, when fired, a prodigious effect both upon the imagination and the tympanum of all who witnessed the review. This, by its floating batteries of the heaviest description, and by the power of steam to move them rapidly into any position that may be required, the British Navy has now become the grandest concentration of force for destructive purposes that can well be conceived. A tonnage of 40,207 tons in one Fleet dedicated to such an object, reminds one not only of the resources of a country providing such tremendous means of defence, but suggests also how vast must be the interests that require to be so guarded.—*United Service Gazette*.

THE NEW ACT FOR MANNING THE ROYAL NAVY.—The new act to make better provision concerning the entry and service of seamen, and otherwise to amend the laws concerning H.M.'s Navy, has been issued. The act has immediate operation, and its object is to extend the service of men and boys, and otherwise to amend the laws concerning the manning and discipline of the Navy. Former provisions, amended, are extended to men entering for ten years, or for any other term of continuous and general service. Boys under 18 entering are liable to serve till 21, and when 18 or upwards to serve for ten years, and so on. Extra pay is to be granted to men detained after the expiration of the period of service, in cases of emergency. Persons entering the Navy are to be entitled to such bounty as may be fixed by royal proclamation. The act is not to affect the right of the Admiralty to enter seamen for any period, and to discharge them. Men entering for continuous and general service, and boys, are to be entitled to pay while in sick quarters, under certain regulations. Spirituous liquors are not to be brought on board H.M.'s ships without the commander's consent. Men absent for 48 hours without leave, are to forfeit their pay during absence. Power is given to try and punish summarily persons guilty of desertion. Imprisonment, under sentence of naval courts, may be either with or without hard labour. It is provided, that persons making fraudulent representations, on entering the Navy, may be punished as rogues and vagabonds. Railway companies are, by this act, required to convey naval forces upon the same terms as the military and police forces.

THE PHENIX: Arctic Ships.—We find by letters from the *Phoenix*, that she was off Cape Farewell on the 14th June, all well on board. M. Bellot writes in terms of great satisfaction, and speaks of his "happy and agreeable cruise with Capt. Inglefield and his officers." He expresses himself with genuine good feeling, and concludes with saying, what less could he have expected from Officers of the British Navy. The fact is, M. Bellot is a good officer, a fine enterprising character, full of energy, and emulous of his duty. Such persons, whatever country they belong to, no less appreciate their companions in service than they are themselves appreciated.

GUANO.—Another immense deposit of guano has been discovered in the Indian Ocean, between Mauritius and Calcutta. The island containing this deposit is forty miles long by seven broad, and thus forty times the size of Ichaboe.

THE AUSTRALIAN DIRECT STEAM NAVIGATION COMPANY.

The route is divided into four stages:—The first from Milford Haven to Navy Bay, on the Atlantic side of the Isthmus of Panama—the distance to be run is 4,552 nautical miles; the second, the passage across the Isthmus, by rail, to the town of Panama, on the Pacific side—a distance of only 46 miles; the third, thence to Otahite, one of the finest and most densely populated islands in those seas, distant 4,488 miles; and lastly to Sydney or Melbourne (alternately)—a further stage of about 3,351 nautical miles: making a gross total from England to Australia of 12,437 nautical miles. The entire route—favoured by the smoothest seas, with moderate winds, a pleasant temperature, and the absence of adverse currents—presents, without question, the most unobjectionable navigation in the world.

The very designation of this Company, the Australian “Direct,” marks in an emphatic manner the nature of the seas to be passed over; for no adverse weather has to be encountered in the entire route, of sufficient duration and strength to impede the velocity of paddle-wheel vessels of 3,000 tons burthen—the size of the vessels proposed to be used by this Company (with proportionate horse power), or to cause their divergence from their track.

Although it is not intended to lay aside steaming for the entire voyage, to secure rapidity of communication and punctuality of arrival at the several stations, yet, as the Direct Australian Line is especially favoured by the winds for more than three-fourths of the voyage, all the steamers constructed for this Company will be efficiently masted; and from this arrangement an enormous saving of fuel is anticipated, as the steamers will, while running with a fair wind, use but two of their four boilers, and yet obtain the same maximum speed as a steamer unaided by canvas could from the use of four boilers and a double consumption of fuel; thus, steaming and sailing through these favourable latitudes, will save fuel and effect a great economy in that most expensive part of the engine-room equipments—the boilers. Another still more important object will be obtained from a due economy in the expenditure of the fuel; for every ton carried unnecessarily displaces cargo, for the rapid transit of which across these seas the merchant is content to pay a comparatively high rate of freight.

One other important feature of the intentions of the directors of this Steam Company ought not to be passed over, as it is very important where large numbers of passengers are proposed to be conveyed in a vessel, and this the paddle-wheel mode of progression enables them to offer, viz., an unlimited supply of fresh water; for each paddle-wheel will be fitted with two condensers inside the paddle-boxes for turning salt water into fresh; the condensation of the steam being effected by placing two flat pieces of iron a quarter of an inch or so apart, and exposing a large cooling surface. The steam is conveyed by one pipe from the steam chest to these condensers, and another carries the steam so condensed into tanks. The simple revolution of the paddle-wheels throwing the cold water against these condensers will enable more than six tons a day to be obtained from the two paddle-boxes of vessels of the size contemplated, viz. of 3,000 tons burthen; and this, too, without any appreciable increase in the expenditure of fuel.

The prospectus states that which all the world knows to be true, “that the produce of gold from the colony of Victoria alone is over £18,000,000 annually; with every prospect of a continuous increase, exclusive of the produce of New South Wales, which forms a large addition to this vast amount.” It will, therefore, remain for us simply to call attention to the dividends which the British and American steamers running to the Isthmus of Panama, upon the south and north-west coasts of Panama, are obtaining—and which lines must

be feeders of this *great trunk line*—to prove how remunerative the project is likely to be.

The (British) Pacific Steam Navigation Company, now long established, and which company run their boats bi-monthly from Valparaiso to Panama, have given twelve per cent. to their shareholders; and but last month paid £1 15s. on every £50 share, and a bonus of £18 14s. on every £50 share. The profits realised by the American proprietors on their lines from California to Panama are exceedingly large. It is notorious that, by that line, Messrs. Howland and Aspinwall, in the short time which has elapsed since the discovery of the golden region of California, have cleared immense fortunes; and by the same means, and in the same time, Mr. Vanderbilt has been enabled to visit Europe in a steam-yacht of greater tonnage and more superb appointment than the steam-yacht of any European Sovereign. We, therefore, see no reason to doubt the immense success of the Australian Direct Company, having golden colonies for its destination, and golden lands on either hand as its tributaries.—*Illustrated News*.

NEW AND CORRECTED CHARTS.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill.

ENGLAND, Needles Channel, Captain Sheringham, R.N., 1852	-	1	6
BALTIC SEA, sheets 4, 5, 8, Admiral Klint	-	2	0 & 1 6
" Gulf of Finland, 2 sheets, Russian Survey	-	each	1 6
" Kronborg	-	-	1 0
MEDITERRANEAN, Black Sea, Varna Bay, Russian Survey	-	0	6
" " Ynida Road, ditto	-	0	6
" " Kertch Strait, ditto	-	0	6
" " Berdiansk Road, ditto	-	0	6
" " Yalta and Ourzouf Roads, ditto	-	0	6
" " Odessa, ditto	-	1	0
" " Dniestr Bay, ditto	-	1	0
" " Danube River, ditto	-	1	0
" " Tendra Peninsula, ditto	-	1	0
" " Dniepr Bay, ditto	-	1	0
" " Sevastopol Harbour, corrected, ditto	-	1	0
SOUTH ATLANTIC OCEAN, Various, 1853	-	2	6
" " Tristan D'Acunha, Captain Denham, R.N.	-	-	-
1852 " " Para River, M. Tardy de Montravel,	-	-	1 6
" " French Navy, 1846	-	-	1 6
NORTH AMERICA, Richibucto River, Capt Bayfield, R.N., 1839	-	2	0
" United States Lights, 1853, (corrected)	-	1	0
CHINA, sheet 1, Entrance to Canton River	-	-	1 6

EDWARD DUNSTERVILLE, Master, R.N.

Hydrographic Office, Admiralty, August 22nd, 1853.

Our best thanks are due to M. Ste. Cl. Deville for his paper on "*The Temperature of the Surface Water of the Gulf of Mexico*;" also, for the two first numbers of the *Annuaire de la Société Météorologique de France*: and also to Lt.-Governor Sir Henry Young for the *South Australian Directory*.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

OCTOBER, 1853.

SAILORS' HOMES, 1750—SAILORS' HOMES, 1850.—*By K. B. Martin,
Harbour Master, Ramsgate.*

Sailors' Homes in 1750—Sailors' Homes in 1850,—in this short sentence we may contemplate changes which have occupied one brief century of the progress of the human race; and although the arena is but small, it may serve as an epitome of much that has also taken place on more extensive fields of action.

In the locality around us we can only trace the former sea line by the derivation of names. Fertile meadows stretch away into where high water mark visited the sandy plot upon every succeeding tide only a hundred years ago, while the rabbit-burrows farther inland exhibit mounds of oyster-shells thrown out by those busy miners as evidences of the once famed estuary over which the longer period of a thousand years has spread the homestead of the baron and the cottages of the more humble peasantry.

Who thought of Sailors' Homes a thousand years ago? Let the historian speak:—

“ When order in this land commenced
With Alfred's sacred laws,
Then sea-girt Britons, closely fenced,
Joined in one common cause.”

'Twas Alfred, a glorious legislator, at a glorious period of our naval
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history! Changes came over the spirit of the scene in succeeding reigns. But, let us ask again in a better defined period, who thought of Sailors' Homes a hundred years ago? What were the generation of men moving upon this little stage? and what the scenic aspect around them? "Sailors' Homes in 1750?"

In the memory of men now living, the crumbling cliffs have been receding before the wasting surge with incredible rapidity. Land and houses disappear from their summits, and artificial barriers to the destroyer would cost more than the value of the estates to which they might form a boundary. Here then the projecting cliffs a century back formed a deeper indentation and gave shelter to the little harbour and ville of Roman's Gatt. The adjacent haven of Sandewick emptied itself four miles farther to the S.W., leaving the walls of the Roman ruin of Riuchboro', and coursing along the sand hills called Caesar's Ships, so called from the tradition that these mounds were thrown up by his legions to form the causeys into which they hauled on shore their shattered galleys.

The River Stour lost its commercial importance as the levels advanced, and the depth of its water for navigable purposes decreased. Here then stood the ancient port of Roman's Gatt; and between the mouldering timbers of its buried jetties have been exhumed coins of the early Romans, and they too then had a home here for centuries at a still more distant period—but we digress.

Anno 1750, the little ville of Roman's Gatt contained a population of about 1,400 souls. It was chiefly inhabited by retired captains of the merchant navy, and eighty-four such residents appeared upon a list of that period, who were eligible to fill the honorary post of Pier Wardens. The present town, with a population of as many thousands, could not officer a single ship for foreign service. Like the stately cliffs which time has crumbled away, the debris only remains. In 1750, Roman's Gatt was an officers' home and sailors' asylum; and it cannot be gainsaid that to such nurseries around our British shores we are indebted for the veteran seamen, who, in the beginning of the present century, stamped an imperishable fame on the naval banners of their country. It was (from time immemorial) to the mercantile marine that the nation was indebted for their able seamen in time of need; therefore let us take a short review of what were the *habits*, and what the *training*, of those valuable men. Nine months of the year were devoted to the most strenuous exertions at sea; and in the North Sea and Baltic, and short trades, the whole crew shipped by the voyage, the captain being always a part owner (and in many instances sole) of the vessel he commanded. Emulation made it an honourable distinction to perform the greatest number of voyages in a given time. Then came the seaman's holiday, the winter months, December, January, February. Ships and vessels were refitting, and with the lengthening days of St. Valentine, or mid February, "The crowded ports echoed to the shout of hurried sailor," who,

As he hearty waved his last adieu,
Loosening every sheet, resigned the spreading canvas to the wind.

Such were our brave ancestors. The refitting was a period of blessed home associations, endearing the rough tar to every tie which ennobles and humanises the manly heart. Forty-three vessels were owned and registered in the "Ville of Roman's Gatt, port of Sandwicke," of which Cinque Port it was a limb. It had its rope-walks, rigging-lofts, sail-lofts, and boat-yards, with every other appliance calculated as a *school* for the youthful mariner to become proficient in the *detail* and *mechanical* duties of his profession; building, repairing, refitting, and keeping a ship in first-rate order, were always before his eyes. Thus the Sailor's Home (in addition to domestic ties) was the birthplace of early discipline, and nurtured those energies which carried them through all these trials awaiting them in their arduous career; while it endeared them to their native place and common country.

The seaman of that day felt that he was a Briton! Now, in our day, his habits are rapidly assuming more and more of the cosmopolitan character. In 1750, the retired master mariner watched the returning ships' arrival in the Downs, went off and welcomed home his former shipmates, assisted in the Thames pilotage, and through the difficulties of the navigation,—hence the clause in the old Pilot Act, "Any master or mate, owner or part owner, residing at Dover, Deal, or the Isle of Thanet, may pilot his ship or vessel in or through all the waters of the Thames or Medway,"—and impressed upon the minds of the rising youth those aspirations which led to a life of dauntless activity, with the hope of an honourable retirement in old age;—and such were the Sailors' Homes of the eighteenth century.

Where are now the retired master mariners of England? We see them not, except where they hide the remembrance of a life of hardships in parish unions—still more hard. And the legislature has deprived them of the alms-houses consecrated by their noble-minded ancestors in the name of that source of all human consolation, "*Trinitas in unitate.*" Do the wealthy and the proud consider the change which is rapidly coming over our mercantile marine? Do they shut their eyes to the fact that a commercial cupidity has deprived the officers of the merchant service (generally) of all those privileges which (in the olden time) gave them, "as labourers in the vineyard to eat of the fruit?" What has the master besides his bare salary to enable him to provide for the future? much less for sickness or accident? Such are the complaints heard on all sides, and to what overpowering temptations in too many instances do they lead! The captain, thus in charge of a highly valuable ship and cargo, has no earthly interest in its preservation but as a common (a very common) carrier; no private trade as formerly, and no chance, except such as misfortune to the ship, or accidental average, may throw in his way. Thus much for "muzzling the ox which treadeth out the corn;" a principle opposed to both our religion and our policy; for the cry still is—"our mariners degenerate." How can it be otherwise? Do not whole nations offer to our consideration the same example? Are pauperised Britons to rise superior to the causes which have sunk the descendants of the Romans

and the Greeks? or will poor human nature conform itself to a Utopian and mistaken policy? Facts, as they present themselves, deny this selfish assumption. Talk to a British sailor of "peace and plenty!" Unfortunately it is war only which enhances his value to an ungrateful country!

Let us now turn our attention more directly to a lower grade in the service. If *Officers' Homes* are at a discount, what is the position of the *Seaman's*? Sailors' Homes of 1850.

And here we find the most generous efforts are made to better the sailor's condition; but it leaves the officer untouched. It is a national as well as a professional question—Where is the remedy? If all hope of a future competence by untiring industry and risk is annihilated, a profession becomes contemptible,—its character is gone! The master mariner is sinking in the scale in a pecuniary point of view, while every effort is making to lift the common sailor above the position which he was wont to fill with satisfaction to himself and credit to his country. The prospectus of a Sailors' Home of the present day is to a certain extent most excellent. It provides for them every comfort which can be desired till another ship can be procured for the unemployed. It shelters them from low associations, and holds forth to them the means of religious exercise and moral improvement; and it offers an opportunity for book learning and nautical studies. But, unlike the Sailors' Home of 1750, it cannot give to the young an opportunity of becoming a practical seaman! It is confessedly the most serious evil in our mercantile navy the increasing number of what are called *half-and-half* seamen; men who cannot put two ends of a rope together in a quick or proper manner, strap a block, knot a stranded shroud, or patch a sail. How should they? They are not shipped till the day of departure; they are then shipped merely for the voyage. The vessel has been prepared by lumpers and riggers. They have had no hand in her outfit. On her return they are immediately discharged, and if steady may go to the Sailors' Home again for a fresh ship. If reckless they revel in dissipation while their money lasts, or become a burden to their friends or family.

There is no attachment to the good old ship and her officers as in days of yore. A seaman now very rarely goes two voyages in the same ship, and his associations and feelings are vitiated by constant change. He is paid money in advance, before he has put a hand to any thing which the voyage or the well being of the vessel may require; and he is totally ignorant of her sea-going qualities, or seaworthy state.

If a foreign vessel is in port, wind bound, we see the same faces, voyage after voyage, and continually recognise an old chief mate in the master. We find the whole crew busily employed, from day to day, making light sails, repairing those which are split or worn, repairing boats, spinning spunyarn, making shroud mats or gaskets, &c. This is all gone out of fashion in British vessels. If the master is asked the question, why is it so? The answer is soon given:—"If I set them to work they grumble, and will soon bolt;" and again, there

is not one British sailor in fifty can put a patch upon a sail, or prepare any difficult part of the rigging.

Apprentices to the sea are now dispensed with in most trades, and our rising youth are not trained to the practical duties of the profession. From a fishing-boat or steam-tug they find their way, as ordinary seamen, into a ship bound foreign and all ready for sea. They return. Follow them to the Sailors' Home. What will they learn there? The philanthropist replies, piety, morality, prudence. There is a library, teachers for navigation and nautical astronomy, an opportunity for studying hydraulics, hydrostatics, pneumatics. I wish to be serious but really I cannot help fancying Jack yawning, stretching out a leg, and longing for hop-tics and a fiddle. Yes, this is a serious subject for all that.

If the head declines and droops while the foot is lifted to usurp its place something very like a collapse must ensue. Now to teach sailors to be officers while an officer's position is a bare livelihood, is a contradiction in itself; independent of which it is something like attempting to "cut blocks of marble with a razor." It should be called an Officers' Home. Surely it would be better to have a laboratory in which all the manual and mechanical appliances of the profession might be taught; or the tyro in nautics, when ordered aloft by the boatswain to reeve preventer braces against the coming storm, may turn round and ask, "If it will not be time when he has carried his quadrant below and stowed away his epitome."

Fancy a mutinous or troublesome crew and a quadrant passing from hand to hand on the fore-castle. Would it not be a hint to the Captain that an additional means existed below for removing him from the quarter-deck? He has no marines to fall back upon in a merchant ship and temptations to mutiny are strong enough without adding this in an age of gold carrying traders. What fact has been better attested than the perfect helplessness of a mutinous crew when out of sight of land has been the only safeguard to their officers. There is no occasion for hotbeds of embryo sailors for promotion. Talent and good conduct will find its way without forcing, and it is the rough and ready tar which is now so sadly missed, and there are no nurseries for them in our merchant service. It would be more congenial to their habits to be employed in some useful labour, the produce of which would pay the whole or a part of their board and lodging at a Sailors' Home, than to have their noses continually jammed between the leaves of a book. Labour would make the reading a pleasure at its proper time; and a day of industry, a day usefully spent, would be the best preparation for evening prayers.

There appears to be a positive mania for *leveling* in the present day. A friend of mine had eleven letters delivered at his door by morning post, and but two were for the family,—the rest for the servant's hall. "Pens, ink, and paper in my kitchen," said he, "from morning till night, and Mr. Footman 'the Secretary of State for the Home Department.'"

Such are the features of the times, their form and pressure. But

how is this to affect our navy and national defences? Let those amiable and excellent men who (retired from the service) are pushing ahead this extreme philanthropy pause, or they may hand over to their successors an insurmountable difficulty in the training and re-establishing a state of discipline necessary to the well being of both officers and men.

It is easier to make men wiser than it is to make them happier. The complaint of intolerable tyranny in the service is in abeyance and heard no more; but we must be careful not to fritter down and refine till we find ourselves in the opposite extreme. The aspirants for promotion are sufficiently numerous without forcing on an unnatural development. We must (some of us) "bale out the long-boat," and it will be a black letter day for Old England when our philanthropists look around them in vain for characters so truly and graphically described in all its phases by the seaman's ballad master of the last century. His Sam Stedfasts, Tom Toughs, Jack Jollys, were not purely imaginary characters. They were instruments (however humble) in the hands of a Divine Providence which preserved a homestead of freedom for the world; and in that day of trial a Sailors' Home was found in the heart of every Englishman. *If he was a sailor*, and not allied to that legion of impostors who strolled about in rags and idleness to libel the profession and disgrace the name.

[We have also received among others a letter on this subject, of which the following is an extract, giving a sad picture, which we fear is too true.—Ed.]

"The present condition of our Merchant Navy is so bad in many instances, and so continually before my eyes, that it really distresses me to see it. We sent a mutinous crew to gaol last week, and I do not believe there was a thorough seaman among them. They get a month's advance, a month in the tread-mill, (in lieu of going the voyage,) and then ring the changes again. Our crews in merchantmen now are as much inferior to the Dutch, Danes, Swedes, Prussians, and Americans, as it is possible to conceive; and in my humble opinion it will soon become a very serious question. The masters have a worrying and difficult task without legitimate and generous encouragement on the part of their owners; and if it is to continue we may soon adopt the language of that unerring Word, 'The whole head is sick! and the whole heart faint!' What would I give to see such a crew as our present amiable and veteran Admiral of the Fleet left behind in the Baltic, when, to the best of my recollection, his words were, 'My lads, I am leaving you, and what I have to say will be said in a few words,—May you, my good lads, get a better Captain; may I get as good a ship's company!'"

PROCEEDINGS OF H.M.S. "CALLIOPE" AMONGST THE SOUTH SEA ISLANDS.—*Captain Sir Everard Home, Bart.*

(Continued from page 460.)

At Ovolau I was informed by Mr. Calvert that the Mission Station at Sandalwood Bay was in danger of being attacked or brought into peril by a Pagan chief in that neighbourhood, who was making war upon the Christians indiscriminately; that he believed that if Tue Vete was to use his influence he could prevent it, and strongly urged my assistance to that end.

I was unable to leave Ovolau before the 19th, and the same afternoon anchored in Sandalwood Bay, and, on the following morning, was joined by a chief sent from Tue Vete directing the chief who was carrying on this war to meet me and arrange a peace. I was accompanied by Mr. Calvert and Mr. Whippy. On anchoring in the bay I proceeded with those gentlemen and the messenger from Tue Vete to the Mission Station at a place called Bua, about three miles up a river; the best place which I had seen in Fejee. Here were two Missionaries, Mr. Williams and Mr. Moore, who, like the rest, wherever they are established, do the greatest good in promoting civilization and happiness in those about them.

The young chief of Bua came immediately upon being sent for. He is a young man, quietly disposed and well behaved, professing Christianity. He is the principal chief of Sandalwood Bay and has himself the power to put a stop to this war, but is influenced by the conduct of the old chiefs, who are determined heathens; the greatest enemy to Christianity amongst whom is the chief Gorothoker nu oto who has made the war upon all the Christians on the Vanna Levu or the Great Land. As it was necessary to see these elder chiefs, and as several of them were at some distance, I appointed the next morning to meet them at the Mission Station, and they met accordingly, except the chief Gorothoker nu oto, who would not come. They spent much time in debate, and it was at last determined that they should all go on board the *Calliope* the next day, and that whatever they decided upon Gorothoker nu oto would abide by. On the 22nd they came: Elijah, the chief of Vewa, the chief of Sandalwood Bay, and about fifty others. The chief Gorothoker nu oto did not come, but sent his son to say that he would confirm any decision made by the rest; and, after some conversation, it was decided that they had been wrong to make war upon a subject which they did not understand; they did not know what they had been fighting for, and that they would make peace; which I confirmed by making them all shake hands. They soon after left the ship.

The 23rd was calm, and on the 24th we sailed from Sandalwood Bay, and arrived at Ovolau on the 26th.

When at Rewa I received accounts of the wreck of a barque called the *Legerdemain*, on the Beveridge reef; and having seen Robert

Whitfield, one of the crew, who, with three others, had escaped in that vessel's jolly boat, and had reached Savage Island, where a Christian native teacher came off to them, wishing them to land; but fearing to do so had been blown off in the night, and were unable to return to the island. They took the native teacher with them, going in the first instance to the Island of Armagura, and from thence to Fortuna or Horne Island, where they left the teacher; and Robert Whitfield, with two others, proceeded with Samuel, the King of the Island, to the Fejees, who, being a Protestant, had been driven from his island by the Roman Catholics. By Whitfield I was informed that the captain, with the rest of the crew and passengers, thirteen souls in all, had constructed a raft upon the reef, and he believed that upon it and in the ship's long boat, they had reached Savage Island, where he had little doubt they still remained. I determined, without further loss of time, to make myself acquainted with the circumstances, and to visit that island.

On the 29th of October we sailed for Tongataboo, where I hoped to learn some tidings of the people of whom I was in search, and arrived on the 7th of November. I there learnt from a gentleman lately arrived from Hapaii, that a Swedish vessel of war had lately been to Foa; that she had been off Savage Island, and had observed English sovereigns and shillings hanging round the necks of the natives who came off to trade with them. They had also brought an English made sextant; and the officers of the ship believed that an English vessel had been wrecked and the crew murdered. The natives did not appear to know the value of the articles they had to deal with, and the captain of the ship left this information with the Swedish Consul, to be communicated to the first English ship of war that might arrive. I found the Island of Tongataboo in profound peace, and the Chief Lavaka, who had for so long a time resisted the authority of King George, living in a house at Nukualofa near to him. King George had called an assembly of all the chiefs, and had made regulations for the conduct of his people.

We left Tongataboo on the 10th of November, and on the 13th arrived off Savage Island. The ship was immediately surrounded by canoes, each having four men in her; they were the most eager traders of any natives that I had ever seen; the articles they brought were spears and clubs, fishing-nets, plaited hair, &c. One man had round him part of a flag. Several shillings were brought on board, and one sovereign, which were bought for trifles. One of the young gentlemen purchased an American gold twenty dollar piece for a fish-hook; and one of the natives had a portion of an English navigation book, covered with red cloth. Two persons on board understood a little of the Fejee and Tonga languages, and with some difficulty made themselves understood. After the natives had been on board some time, and disposed of several articles, I took two men, who seemed to be of rather more consequence than the rest, and having got them upon the lower deck, inquired what white men there were upon the island. They said there were none, but that they had gone away, and in one of them a native

teacher had left the island ; which latter part I knew to be true, from the man Robert Whitfield, who had given me the account of the loss of the *Legerdemain*. The two men who were below were then informed that they would be detained on board until all the white men upon the island were brought off, and were desired to send one of their friends to bring them off. A canoe was about to leave the ship for that purpose, but the other natives on board and alongside the ship prevented them from going. At the same time one of the natives on board took the master's sextant, which was on deck, and having put it in the canoe, left the ship, with three other men, and made for the shore. A quarter boat was immediately lowered, and the natives, finding they could not escape, gave up the instrument ; two of the natives jumped overboard and swam to other canoes ; another, on being brought alongside, jumped overboard, dived under the ship's bottom, and escaped to the canoes on the other side ; the man remaining was secured and placed in irons, as was another, who, running aft, seized the hat from the boy who was at the helm, and was in the act of jumping overboard.

Finding that there was little chance of communicating with the shore, I seized upon six canoes and seventeen of the natives, who were placed in confinement ; and the canoes some were hoisted up and others in board ; and the other natives were informed that there was an end of bartering, and that none of the prisoners should leave the ship until I had on board every white man upon the island. Some shots were fired over the heads of other canoes escaping, but care was taken not to injure any one. Soon after this, when standing in towards the island, the canoes came back, and the natives were as eager to barter away their things as if nothing whatever had taken place. Two native boys had been taken whilst swimming from the ship, and it was observed of one of them that when sitting under the half deck, the other natives kissed his foot, the greatest mark of respect made by pagans, natives of these islands. He was about fourteen years old. I caused it to be explained to this boy, who was in great distress on account of the anxiety which his mother would feel about him, who was, we understood, the Queen of the Island, his father being dead, and she acting as guardian to him, that I did not wish to injure any of them ; the ship had not come to trade, but to receive the white men who were supposed to be upon the island, and that as soon as they came off I should send all the natives on shore, and until that was done there would be no bartering whatever.

I stood off and on for the night, placing one of the persons I had on board, who understood a little of the language, to attend to the conversation of the two first natives taken, who were kept separate from the rest ; and the other to attend to what might be said by the other two prisoners, and to the rest generally who were upon the same deck. I sent for the two boys, and questioned them respecting the persons supposed to be there. They said that there were six white men on the north side of the island, and that they had been killed. I offered them some supper and some wine and water, which they would not

touch, believing that it might be poisoned. The man who had been talking to the two prisoners who had attempted to steal the hat and sextant, stated, that one of them had said that there were five white men on the north side of the island; the other then said that one had been killed, upon which he received a signal from his companion, and would say no more.

On the following morning, the 14th, the boys contradicted all they had said the night previous, appeared quite ignorant of every thing, and repeated the words put to them, but would give no sort of answer. The two men who had been first put into confinement, stated, as they had done at first, that white men had been to the island in three boats, but that they had gone away. During the night the coast was illuminated by numerous fires. On standing in near the shore, six canoes came off; the people in them asked where the prisoners were. I informed them that they were all safe, but that I should not part with them until I received all the white men from the island. They said they were in the hills, but should be brought on board the first thing the next morning. The natives on board remarked that it was not true, they only wanted to sell what they had got, and that the white men had left the island. I then stood off again.

The next morning twenty-five canoes came off; trade was their only object; the men were many of them painted black, with their hair tied upon the crown of the head as for war; the canoes had many spears in them, and some had stones for throwing; they did not, however, use any kind of violence, and soon returned to the shore, and no more canoes came off.

Having no positive proof that any of the crew of the *Legerdemain* were remaining upon the island, and the two men who were first taken, one of whom was a native Christian teacher of Samoa, still adhering to the statement they had made at first, and believing that the boys might have given answers to my questions which they thought might please the other natives who were present, or have misunderstood the question, and having been three days off the island, and not feeling justified in taking further steps without clearer proof of the crew being upon the island or having been murdered, I determined to release the people and their canoes, which I did, and sent them to the shore. The teacher, however, preferred remaining on board the *Calliope*.

On the 16th of November we stood away for the Island of Fortuna or Horne Island, off which we arrived on the 21st, and I landed in the afternoon of that day in the hopes of obtaining further information respecting the crew of the vessel in question. Here, as off Savage Island, there is no anchorage for large vessels. I there found a man of the name of Edward Stevens, a native of the United States of America, who arrived at Fortuna on the 12th of November in the barque *Terror*; from him I learnt that he joined that vessel on the 29th of August, when Mr. M'Leod, the Master, informed him that he had picked up the captain and part of the crew of the barque *Legerdemain*, which had been wrecked in the month of June previous, on the Beveridge reef; they were in two boats, and on being received on

board the *Terror* proceeded to Apia, Island of Upolu, Navigator Group. The *Calliope* had been at that place on the 10th of September, when they had not been there, or the Consul, Mr. Pritchard, made no mention of them.

On Fortuna there are about eleven hundred inhabitants, all Roman Catholics; the mission consists of three priests and one servant: there are besides eight white men, of whom six are Americans, one Portuguese, and one Englishman. I also found there the native teacher who had left Savage Island in the jolly boat of the *Legerdemain*; being a Protestant, and very anxious to leave the island upon which he was, I received him on board the *Calliope*. On showing him the navigation book before-mentioned, and asking him if he had ever seen it before, he answered, "Yes," that he had seen it in the boat in the hands of the second mate, James Bodimar, who gave it to a native on Savage Island in exchange for some sugar cane, telling him that it was a religious book. On showing him the twenty dollar piece before-mentioned, he informed me that Edward Johnson, another of the jolly boat's crew, had seven such coins in a box with other things, and believed that it had been given in exchange for bananas, cocoa-nuts, and other such things; the other articles given in barter were sovereigns, shillings, and axes. He informed me also that boats seldom land on the island, and few like to trust themselves amongst the natives. There are upon Savage Island two churches and four native teachers, two of whom were then on board the ship. There are about three hundred natives professing Christianity, and the total number of its inhabitants is about one thousand. The principal chief of the island is an infant of about three years old, and has been left under the guardianship of the two teachers then on board, and he will consequently be brought up a Christian. The inhabitants I am informed are not cannibals; their greediness for barter exceeds every thing I ever saw before. They have no pigs, poultry, sheep, goats, dogs, or cats, so abundant in other islands; the deficiency is probably owing to their having bartered away their last animal.

On the evening of the 21st of November, I left Fortuna, and in the morning of the 26th anchored on the south side of the Island of Rotumah. The number of inhabitants on this group is about three thousand; governed by two principal chiefs, one a pagan, the other a Protestant; there are eleven Englishmen, two Americans, and one West Indian; the religion is Protestant and Roman Catholic. There is no Missionary of the Protestant Church upon the island; there are four Wesleyan churches with congregations of about six hundred, and six native teachers. Of the Roman Catholics there are two priests and two churches, with about eighty natives of that religion; the rest are heathen. Wood is abundant; there is but little water, and no running streams; refreshments generally are plentiful, but there is little or no trade. The habits of the natives are mild; and, like those of the Friendly Islands, highly susceptible of civilization.

We sailed from Rotumah on the 26th of November, leaving the two teachers belonging to Savage Island according to their desire. The

provisions being reduced to twenty days, and the season having arrived in which hurricanes are to be expected, I did not feel justified in prolonging the cruise for the examination of the Island of Guadalcanar, or others in the Solomon Group, in search of Mr. Boyd. I felt also that I should have neglected my duty if I had not performed and seen finished in the best way that I was able, the things which I believed required attention in the places which had been visited. I therefore determined to return to Sydney, and sailed for the Island of Tanna, where the ship anchored in the morning of the 1st of December. Although a watering place is here marked by Captain Cook, the water at present is quite unfit for use; wood is plentiful. Two native Christian teachers are upon the island, but the inhabitants are all pagan; it is not safe for a small vessel to send a boat on shore with articles for barter, unless well armed, for the natives will sometimes attack and plunder them of the articles they may contain to trade with. Pigs are the common articles required for refreshment at the different bays round the island. From the two teachers and from a document left by a Mr. Mansfield, the Master of the barque *Eliza* of Hobart Town, I learnt that about December, 1851, the principal chief of the island had been killed by a Mr. White, Master of the schooner *Deborah* of Sydney, in a drunken affray on board that vessel, and thrown overboard: the consequence of which was, that the *Eliza* had four of her crew seized by the natives in revenge upon her arrival at the island, and their lives were saved by the two native teachers above-mentioned; the men being ransomed by payment of nine muskets and twelve pounds of gunpowder. These particulars I have communicated to the Colonial Secretary of New South Wales.

On the morning of the 2nd of December the *Calliope* left Tanna, and having sighted Walpole Island anchored off Observation Island, Isle of Pines, on the 6th. The fore yard being found defective, spars were cut and trimmed for the purpose of making a new one; but the wood was found too full of knots and so unsound, as to be unfit for the purpose. A supply of fire-wood was laid in, which is here to be procured in great abundance. The island is governed by a chief, who is also principal chief of New Caledonia, a very well disposed young man, twenty-three years of age. There are two other principal chiefs; their great desire is to promote Christianity and civilization, and to encourage Europeans to settle amongst them; but the people generally do not like it. There is no good water a convenient distance from the sea for ships to water at. Here, as at Tanna, there is a store of sandal wood, the property of merchants at Sydney, who, when it has accumulated, send vessels to ship it off to the China market. The religion of the island is Roman Catholic and pagan. There are two French Missionaries residing on the island. They have cattle, sheep, and horses, which are fast increasing. The natives were formerly all cannibals, as in New Caledonia; it has however ceased upon the Isle of Pines, or is very seldom practised.

A GLANCE AT MELBOURNE.

[A glance at the "sayings and doings" of our distant countrymen falls within the range of the *Nautical*, and the importance of those at Melbourne induces us to believe that the following summary, which appears in a local paper of that place, will be found interesting to our readers on many accounts.—ED.]

The Gold.

The stream of gold flows onwards from the mines continually, but with ever-varying volume. Numerous circumstances combine to elevate or depress it at intervals. Sometimes the dry weather prevents the diggers from washing out their heaps of auriferous earth for want of water; sometimes they are flooded out of a rich field by its superabundance; sometimes new diggings are discovered, and a "rush" from the old scenes of operation immediately takes place; or the bad roads, in rainy weather, render carriage to and from the diggings all but impracticable. Hence, no fair estimate of the yield of the mines can be taken from the returns for a short period; an annual estimate will be the most correct. The carefully compiled statistics of Mr. Westgarth, we may repeat, show that the total produce of the Victoria Gold Mines up to the end of last year—a period of about fifteen months from their commencement—was about 4,891,000 ounces, worth nearly twenty millions sterling. The escorts brought into Melbourne during the first three months of the present year, a total of 527,998 ounces; and since the end of March the returns have been as follows:—

By Government Escort.

		Ounces.
April	2.—From Mount Alexander . . .	6,337
"	9.—From " " . . .	11,613
"	9.—From Balaarat . . .	5,790
"	9.—From the Ovens . . .	6,135
"	9.—From " " . . .	4,082
"	16.—From Mount Alexander . . .	9,464
"	16.—From Balaarat . . .	5,084
"	16.—From the Ovens . . .	7,531
"	23.—From Mount Alexander . . .	32,906
"	23.—From Balaarat . . .	5,884
"	23.—From the Ovens . . .	2,837
"	30.—From Mount Alexander . . .	10,991
"	30.—From Balaarat . . .	6,307
"	30.—From the Ovens . . .	2,569
May	7.—From Mount Alexander . . .	10,800
"	7.—From Balaarat . . .	4,180
"	9.—From the Ovens . . .	3,332
"	10.—From Mount Alexander . . .	11,715
"	11.—From Balaarat . . .	4,396
"	12.—From Mount Alexander . . .	9,858
"	15.—From " " . . .	11,045

„ 16.—From the M'Ivor	1,410
„ 19.—From Balaarat	3,021
„ 19.—From Mount Alexander	13,756
Total	200,032

By Private Escort.

April 2.—From Mount Alexander	17,947
„ 9.—From „ „	13,982
„ 30.—From „ „	2,963
May 7.—From „ „	6,628
„ 15.—From „ „	7,000
Total	48,520
By Government Escort	200,032

Total brought down by Escorts 248,552

A comparison between the quantities conveyed by the escorts during the first four months of 1852 and 1853 respectively, will show that the yield of gold exhibits as yet no symptoms of diminution but very much the reverse. The amounts are as follows:—

	1852. Ounces.	1853. Ounces.
January	64,834	186,015
February	56,108	172,329
March	51,865	169,654
April	67,556	161,431
Totals	240,363	689,429
		240,363
Increase (187 per cent)		449,066

But upon this comparison two remarks are necessary. First, the amount brought down by escort affords only approximate data for determining the total yield of the gold fields, and there is every reason to believe that the proportion is smaller than it used to be. In proof of this we may adduce the evidence of the gentleman now acting as our Special Commissioner to report upon the various gold fields, who writes from the Eureka diggings to the effect that the amount sent by escort from that locality averaged about an ounce per man per week; whereas, all the testimony he has been able to collect from persons there the best qualified to form an opinion, strengthened by the results of his own observations, proved that the average individual gain was at least an ounce daily, or six ounces per week. But, secondly, it must be borne in mind that the increase in the number of diggers has been at least proportionate to the increase in the yield of gold, so that the larger quantities do not necessarily imply an increase in the average gain of individual diggers. Upon the whole, it may perhaps be taken as a fixed principle in gold digging that the average individual gain

will somewhat decrease according as the aggregate number of diggers increases; and, at the same time, the proportion of persons very fortunate, and of those wholly unsuccessful, compared with the whole number of diggers, will also diminish.

The pursuit is, in fact, rapidly assuming a more determined character. There is an observable decrease in the number of large prizes of a chance character, and a steady increase in the number of those persons who adhere to digging as an occupation at which they can gain a much higher remuneration, on the whole, than at almost any other employment.

New diggings are still being discovered. Within the last few weeks a spot named the M'Ivor Creek, about sixty-five miles north from Melbourne, and about fifty miles east from Mount Alexander, has been found to be richly auriferous, and already several thousands of diggers are at work in the locality. There is little doubt but that it will prove a new centre of operations. The diggers in many of the gullies at Mount Alexander and Bendigo have been much impeded during the summer from want of water; but they have been digging out large heaps of rich soil, which will yield immense quantities of gold now that the streams are beginning to flow, and the washing season is coming round. It is not improbable that the amount brought down during the present winter will exceed even that of last winter. The diggers at the Ovens, on the other hand, have been hindered by floods, by impassable roads, and, consequent, high prices of provisions. At Balaarat steady yields are still the rule, but even there the miners in many of the flats have been incommoded by the abundance of water. Thus it will be seen how singularly variable a pursuit that of gold mining is; and it will also strike the intelligent reader, that the colony must be amazingly rich in the precious metal to have yielded such vast quantities, in spite of all these disadvantages, backed by methods of working which are still grossly unscientific.

The Government has issued a new code of Gold Regulations, which are chiefly noticeable for the facilities they offer for the formation of companies for reworking the ground over which the diggers have already passed. There cannot be a doubt that such companies, provided they introduced improved modes of operation and were conducted on the co-operative principle, would prove highly profitable. The ordinary "digging" does not by any means exhaust the soil; it is impossible that it should do so, and the best proof of the fact is, that many men gain considerable profits by washing out a second time, or even a third time, the stuff thrown aside by previous workers. Much more than would scientific processes be profitable if so employed. Several such companies as we have mentioned have been projected since the regulations were issued, and it is likely that something considerable will, before long, be accomplished in this way. But we should again warn English readers that we are not giving any countenance, by these statements, to the numerous bubble companies which have sprung into existence in England, with the ostensible design of working our gold fields. These companies, from the very nature of

them, are almost certain to prove dishonest schemes, and some of them are known to be swindling concerns of the most nefarious character. Let no man who values his property have anything to do with them.

No masses of gold of striking magnitude have been brought to light since our previous summary; but, even if there had been, they would not have excited much attention here. Nuggets of a few pounds' weight have become too common to deserve special mention, and, after a time, people become tired of being told of even ten or twenty pound lumps.

The gold does not appear to be the only source of mineral wealth which the colony contains. An intelligent observer at the Ovens diggings was struck with the indications of tin ore he observed in that locality; and a little research has shown that there does exist there indefinite quantities of tin of the richest quality, and highly impregnated with gold. A fine sample of the metal in the shape of a bar, and which, from an inspection of the ore from which it was smelted, we have no hesitation in pronouncing to contain a large per-centage of gold, lies before us at the moment we write.

The population at the various diggings still continues rather to increase than otherwise. No decided indications of a reaction are yet perceptible, notwithstanding the accessions to our population. Whether it be that men are fascinated with the wild independence of the pursuit, or that they find it by far the most lucrative employment open to them, certain it is that the bulk of those who take to gold digging are steadily adhering to it. A few gain large sums and embark in other occupations, in this or the neighbouring colonies; a few more return to England; and some are disheartened by an unsuccessful trial of a few weeks or months, and fall back upon the various employments which the colony affords them. But the main body of male immigrants still go to the diggings, and the great majority of those who do so continue to remain there. The other departments of labour are gradually filling up; but by no means in proportion to the vast numbers flocking into the colony. Everywhere in the interior the cry of "want of labour" is still heard; and very serious consequences are impending over the colony for the want of sufficient hands to carry on pastoral and agricultural operations on a scale commensurate with our daily expanding necessities.

Steam Communication.

We were glad to observe that our representations respecting the "death-ship" *Ticonderago* and the other vessels which have furnished a more than usually large list of casualties, excited great attention in England, and caused measures to be adopted to prevent the recurrence of such frightful catastrophes. We should be equally glad if our complaints now should awaken English sympathy towards the colony for the mischiefs it has suffered from its steam communication. We say mischiefs, although it may appear very strange that we now have to denounce as an evil what we formerly prayed for as one of the greatest possible benefits that could be conferred upon us.

But the voyage of the miserable steamer *Adelaide*, just completed, has been so disastrous to Australia, as to compel us to acknowledge that steam communication itself, if conducted upon the principles hitherto adopted by the Australian Steam Navigation Company, would be a positive evil of great magnitude to these colonies. The proceedings of that Company have been unfortunate from the commencement; and have grown worse at each successive step. Every one of its steamers has made a wretched voyage, each outdoing its predecessor. The *Australian* proved itself a somewhat worse sailer than an ordinary sailing vessel; the *Sydney* proved itself worse than the *Australian*; the *Melbourne* proved itself very much worse than the *Sydney*; and the *Adelaide* caps the climax by proving itself immeasurably inferior even to the *Melbourne*.

To show the steadily increasing nautical sins of this fleet, we may refer to a letter from one of the passenger-victims by the *Adelaide*. He shows that the first, the *Australian*, took forty-four days to reach the Cape; the second, the *Sydney*, took fifty-four days; the third, the *Melbourne*, took seventy-five days; while the fourth, the *Adelaide*, took seventy-seven days. With a steadily descending scale like this, is it too much to wonder whether the fifth will ever reach this port at all?

Even while these remarks are in course of preparation, we are apprised, through the agency of the other companies, whose steamers *Hellespont*, by the Cape route, and *Shanghae*, from Singapore, are dashing side by side up to Hobson Bay, that once more the *Australian* is found to be all wrong. She has started for Australia forsooth, and put back "leaky." Her precise kind of disarrangement does not appear to be clearly known, but we find it somewhat quaintly described in our latest English paper, as a "defect which admits the sea into the ship but does not allow it to escape again,"—a peculiarity which, to our non-nautical ears, seems to indicate about as inconvenient a complaint as any sea-going vessel could be troubled with.

The preposterous length of the voyage is a minor evil in comparison with the anxiety occasioned by the dread of shipwreck which haunted this community for weeks in the case of the last two steamers. We were almost on the point of giving up the *Adelaide* for lost, when a lumbering old hulk was reported at last to have rolled into Adelaide. And if she did not suffer shipwreck, it certainly is not the fault of some, for the narrative of the voyage plainly shows that every reasonable precaution * * * * was carefully taken before she was sent out.

All this is the more provoking when it is considered that these very steamers carry the most valuable freights that could be placed in them. Thus, the *Australian* took home something near half a million sterling in gold dust alone; and the *Adelaide* brings out about £300,000 sterling in specie. Surely such treasures as these are worth being consigned to sea-worthy vessels.

The mischiefs inflicted on the mercantile community here by the detention of the *Adelaide*, and the fears for her safety, have been in-

tolerable. Mails have been postponed—goods have arrived before the advices or bills of lading had come to hand—correspondence has been confused—and business transactions have been utterly deranged. It is most provoking to think that a steamer holding the Government Mail contract, and for which the mails had been kept back for several weeks, should have left London on the 11th December, and arrive in Port Phillip on the 11th May following—a period of five months precisely!—while a steamer, belonging to another Company, which started *two months and five days after her* should yet be able to arrive *twenty days before her!* In fact, if anything could render more ridiculous the lumbering movements of our hitherto principal line, it would be the manner in which their vessels have been literally danced round by the *Harbinger*, the *Chusan*, the *Formosa*, and other steamers, of better managed Companies. We sincerely hope that this last experiment of the Australian Steam Navigation Company will either be the termination of its blundering proceedings, or that some other Company will quietly take the lead, and shelve the first-formed Company altogether.

We may be thought to be too severe in our remarks upon this subject. But no such opinion would be held by any one who had seen the irritation, annoyance, fear, and inconvenience to which this whole community has been for months exposed by the delays to which we have alluded. No one could blame us who saw, as we saw, this much vaunted *Adelaide* crawling up our harbour, at a rate of something like three knots an hour, throwing up little jets of momentary smoke, as if the sight of the anchorage cheered her on to the reckless expenditure of another scuttle-full of coals; and who felt as we felt at the thought that *this* was Great Britain's mode of postal communication with her richest colony.

Shipping.

We may remark, while on the subject of shipping, that the impression still generally entertained by English shipowners respecting the risk incurred in sending vessels to this port, in consequence of the desertion of the crews and the impossibility of replacing them, is not so well founded as it was some months ago. The desire to try the diggings is less general amongst seamen, and they can be procured in almost sufficient numbers at the wages quoted in the report given in another column. Large vessels returning to Europe find little difficulty in obtaining the requisite number of hands for the home voyage; and the intercolonial trade, which gives employment to a very large number of seamen, is now carried forward with the utmost vigour. We are of opinion that English shippers need no longer be deterred from freighting vessels to Port Phillip on the ground of the difficulty of obtaining crews for the return voyage.

The present trade of the port is indicated by the list of shipping in the harbour. The numbers are:—ships, 64; barques, 60; brigs, 30; schooners, 30; and steamers, 4; giving a total of 188 vessels of all sizes. There is no reason why every single vessel of this fine fleet should not be actively employed.

Social Condition.

The state of the City of Melbourne is daily becoming more critical under the pressure of the vast numbers which are continually landing in its streets. The arrivals during the month of April amounted to 12,292 persons; and the estimated population of the entire colony on the first of the present month was probably about 230,000 souls.

As a matter of interest in watching the progress of this singular country, we may remark that the estimated population of the colony at the end of 1851, was 95,000; at the end of 1852 it had risen to 200,000; and at present a moderate allowance for the balance of arrivals over departures, increase by births, &c., brings it, as above, to 230,000.

The following table, which is a pretty accurate return of the arrivals and departures at this port since the 1st January of the present year, will form a most interesting and instructive commentary upon our rapid rise and progress.

List of Arrivals and Departures from 1st January to 15th May, 1853, at Melbourne, by Sea.

ARRIVALS.					
	Males.	Females.	Children, 1 to 14.	Infants under 12 months.	Total.
January . . .	5419	2047	1704	278	9448
February . . .	4763	1426	1078	173	7440
March . . .	5874	1694	1275	175	9018
April . . .	8024	2319	1708	241	12,292
May 15 . . .	2842	776	437	64	4119
Total arrivals	26,922	8262	6202	931	42,317
DEPARTURES (Chiefly to the Neighbouring Colonies).					
	Males.	Females.	Children, 1 to 14.	Infants under 12 months.	Total.
January . . .	4353	482	350	11	5196
February . . .	3745	450	354	18	4567
March . . .	3318	506	328	19	4171
April . . .	2693	382	293	10	3378
May 15 . . .	1229	202	108	6	1545
Total departures	15,338	2022	1433	64	18,857
Surplus population for the portion of the present year ending 15th May.)	11,584	6240	4769	867	23,460

The immense immigration would be the greatest benefit the colony could receive if there were immediate steps taken to draft off the surplus numbers into the interior. But by the wretched policy hitherto adhered to by the Government, it appears either unwilling or unable to do its duty in the impending crisis, and the probable results are inducing most serious forebodings in the minds of the more humane and thoughtful colonists.

The majority of the new comers still continue to go to the diggings, where they remain if successful, and if not they return to the city. Those of them who have useful trades find ready employment at very remunerative wages; and all who are able to work hard may gain a livelihood. But those who do not belong to these classes have to face expenses which are enormous to them, and to find employment as best they may. The expense of living in the city, indeed, is rapidly becoming almost incredible. House-room is hardly procurable at any price. Anything having the shape of a shop will let at almost any rent the owner chooses to ask. A little wooden cottage of four rooms—such as in England would be considered dear at £10 a year, will let in Melbourne for nearly that sum per week. For good shops in the principal streets upwards of £2,000 a year is demanded, and given. A section of city property which was bought a few months ago in one lot for £20,000, was sold the other day in detail by auction for £62,249. A Government land sale was held last week, which lasted four days, and it realized nearly £180,000. Sections of building-land in the vicinity of the city were eagerly bought up at the rate of more than £3,000 an acre. Land for cultivation, within a few miles of the city, readily brought from £40 to £60, and in one instance as much as £75 an acre. Land at a distance of twenty miles from the city sold for from £8 to £12 an acre; and so on in proportion. The land sold would, probably, still have realized the same prices if the quantity put up had been four times as great.

This will give some idea of the singular disproportion existing here between money capital and the means of investment. Nearly six millions of pounds sterling—a larger sum than the average "Rest" of the Bank of England—are still lying idle in the local banks. These amounts are chiefly made up of the deposits of large numbers of successful diggers. The principal and almost the only natural outlet for all this money is the public land, and yet this has hitherto been insanely withheld by the Executive. The natural consequence is the waste of large sums which cannot find investment and a prevalence of drunkenness which it is frightful to contemplate.

Meantime, building is going rapidly forward in the city and for miles around it; but the erections are principally confined to small tenements, the demand for house-room being so excessively disproportionate to the supply; and that disproportion still increases daily. Nothing very extensive in the building of public works has yet been attempted; and perhaps it is impossible, as the prices of building materials are beyond all precedent—almost beyond belief. Bricks, for example, are upwards of £12 a thousand; timber is so dear that a

wooden erection here will cost as much as a substantial stone building of equal size would cost in England. Stonemasons are paid as much as £8 a week with board and lodging; and labourers get from 10s. to 14s. a day. So that it is calculated that every brick used in a building costs about five pence, and every dressed stone about nine shillings! At such prices men are not anxious to build, especially as it is evident that a maximum of rent must some day be reached, beyond which it will be impossible for tenants to go. An enterprising shopkeeper has just finished a four-story brick shop and store, in the principal street, at a cost of nearly £20,000—perhaps ten times as much as a similar erection would cost in London. Such prices may well make men pause before they undertake large erections, although a remunerative return for their outlay, even at such rates, seems certain for some time.

To add to the difficulties of new comers, and the expenses of all, provisions are exorbitantly dear, and are getting dearer. Many of the necessaries of life are rising to very high prices. The luxuries of life are unattainable except by those fortunate persons who are making money so fast that they scarcely know what to do with it. We are assured by a gentleman of perfect veracity that his outlay for the article of *milk* alone now actually exceeds his whole expenditure when he arrived in the colony a few years since.

In respect to imported goods, we are not in a much better position than with those of colonial produce. The truth is our mercantile community has no more been able to keep pace with the march of events than our weak Government. The imports of all kinds are miserably inadequate to supply our wants. Fortunes have been made readily by men who have had only the energy to import goods, of almost any kind into the colony. Cargoes are bought up, at immense advances on the invoices, before they arrive. Prices actually seem to rise when a large consignment of goods comes in, because there is then created an activity in the market, which before was languid from sheer want of something to work upon. To judge by past appearances, we could absorb almost any amount of goods and pay almost any price for them, and a glut in the market seems next to impossible—so vast is the demand, and so great the willingness and ability to purchase. This is all literally true with reference to articles of general consumption; but it is no less true of expensive luxuries. The high price of luxuries does not deter men from purchasing them. They will have them at any cost; and very often they indulge in an extra supply of them out of mere bravado, and to exhibit their wealthiness and generosity. The fortunate digger frequently comes down to the city with his earnings; spends it in one excessive debauch, and returns to his work again.

We must not be understood to counsel unlimited shipments. The British merchants will be advised more accurately, and more in detail, by their correspondents here. But it is our duty to record the fact that their provisions for our wants, hitherto, have proved miserably inadequate to our requirements, in almost every article of usual consumption. The advice given them is, therefore, shown either to have

been incorrect, or they have not properly acted upon it. We are not traders; and, as entirely uninterested in any considerations of profit or commission, our opinion has at all events the advantage of perfect disinterestedness. The extensive shipper, we conceive, should watch the cargoes now leaving British ports, and endeavour to estimate their sufficiency to supply the people already here, and the additions to our population which the same ships convey. But he should ever bear in mind this remarkable peculiarity of our circumstances, that the usual trade axiom of a high price checking consumption, very feebly applies to an inordinately wealthy colony like this. On the contrary, the consumption of many articles is actually increased by the pleasure of indulging in a little extravagance. An example may convey more than volumes of argument. The article of bottled beer has long been extravagantly dear, averaging from 20s. to 30s. per dozen, its natural price here being probably about 10s. or 12s. But when a fortunate digger is asked double price for his bottle of beer, so far from declining it, he orders another bottle to show his wealth and his spirit to expend it; and he thus consumes two bottles instead of one, simply because *it is dear*.

Amongst other articles exorbitantly high, the price of horse-food is worthy of special mention. Oaten-hay is selling at from £40 to £50 a ton, or more than double the price for which good sugar can be obtained. Oats are sold at about 20s. per bushel. As there is no immediate prospect of these prices decreasing at present, we think it would pay to export such articles from England, bulky as they may be. The "keep" of a horse at this rate may be calculated probably at £200 a year, and the high rate of cartage of every description thence arising is a very serious evil and inconvenience. But building materials of all kinds, articles of general consumption, articles of luxury,—in short, every thing consumable, might at present be poured into our port; for there is a sure and ready market for them all, at rates which cannot be obtained elsewhere.

To meet the pressing exigency of the occasion, the Government are being constantly importuned to bring large quantities of land into the market at frequent intervals. If this were done, there would be an outlet for the oppressive numbers crowded, and still crowding, into the city. But this is precisely what the Government cannot be induced to do. The inevitable result will be, that an immense amount of privation and hardship will await the coming immigrants this winter. Private benevolence has done much, and is ready to do more, to avert these evils; but the only real remedy is drafting off the superfluous population into the country. The Government which refuses to afford the means of doing so, is morally chargeable with the consequent evils. It is an exasperating consideration that mischiefs so great are due to such a cause. An incompetent and unfeeling Governor can inflict misery on thousands of innocent people, whom he is bound by virtue of his office rather to protect: and his negligence goes unpunished,—nay, he is lauded in official despatches from home as a very paragon of rulers.

There is, however, some consolation in the fact that the disposal of the waste lands will shortly be vested in the local legislature; and, possibly, the wants of the colony will be then supplied.

One feature of the present immigration should be particularly pointed out. By far the majority consists of males. It is estimated that there are about 60,000 more males than females in the colony at this moment. Although Victoria is not the most desirable place on earth for ladies to come to just now, yet the preponderance of the other sex is a circumstance worthy the attention of unmarried females; however ominous it may appear in the eyes of the political economist. Female servants are in pressing demand at good wages. Each successive ship-load is soon absorbed, and still the market is empty; for successful diggers will marry, and that class of young ladies is the only one they have to choose from. But for every reason, it is a matter of the most momentous importance that there should be a growing equalisation of the sexes; and at present the case is just the reverse.

Our present condition with regard to the prevalence of crime is more satisfactory than we have hitherto been able to report it. Whether this arises from a mere temporary lull, or whether a slow improvement in our police system, and the wholesome severity of our judges, are producing a perceptible effect, we scarcely feel justified in saying. Bush-ranging, robbery of individual diggers, attacks upon stations, &c., are still far too prevalent; and our gaols, stockades, and hulks, are gorged with criminals to a frightful extent: but there is more security felt for life and property, and in the towns particularly, society is in a far more peaceful condition. The prevalence of drunkenness, however, is beyond description.

In concluding this head of our summary we again warn intending emigrants of the difficulties they will have to encounter: and would urge upon them the necessity of providing against those difficulties as far as possible, especially with reference to the article of shelter. It would be well if every emigrant could manage to bring his house with him; or, failing that, a good substitute for one.

It would be unjust to the people of Melbourne to omit mentioning that they are evincing a truly generous disposition to avert the sufferings of new comers, resulting from the limitedness of the accommodation for them. From time to time large sums of money have been raised for the purpose; and the various religious bodies effect privately a great amount of good in the same way. A few days ago another public meeting was held to devise means for alleviating temporary distress amongst newly-arrived immigrants, at which it was resolved to appeal to the public for £10,000, and to the Government for £40,000 more, to meet the emergency; £1,300 were subscribed on the spot, and the subscription-list already amounts to several thousand pounds. We have every reason to hope that the movement will be successful, and that an immense amount of benefit will be conferred on those who may stand in need of such assistance during the coming winter. But, as we have said before, the whole case cannot possibly be grasped by private charity, however beneficent or extensive it may be. The suf-

ferings of immigrants are temporary, and are wholly referable to the fact that thousands are being weekly thrown into a city already overcrowded, and where the necessaries of life are raised in value by the extraordinary wealth of the place. People, therefore, are met at the outset by the greatest difficulties attendant on colonial life; and nothing but invincible effort will bring them safely through.

We repeat with emphasis a statement we have already frequently made in these summaries, namely, that only those persons are really fitted for coming to this colony, who have the virtue of self-helpfulness in a high degree, and who are accustomed to hard bodily work. We repeat this, because the struggle will, as a matter of course, grow intenser for each just in proportion as the aggregate immigration grows larger. The country will not be overcrowded whatever number of people may flock to our shores; but the various relations of capital and labour, of trade and commerce, and of social life in general, cannot readily adjust themselves in the face of such an unparalleled influx of population as now pours in upon us. The force of circumstances, in such a case as ours, is perfectly uncontrollable. A person leaving England for Victoria must leave all his old ideas behind him; for he is coming to a *new* country, in the most comprehensive sense of that term,—a country where he will find that he must inevitably bend to the force of circumstances, or be driven back again. If, then, men have not been accustomed to rely upon themselves exclusively, if they have been delicately brought up, and habituated to self-indulgence, if they belong to the learned professions, or are of a literary rather than a practical turn, in a word, if they are incapable of *manual labour of some kind*, we think they are hardly justified in risking the many chances against them even in this gold-gathering country. In particular we would warn clerks of every description, young men whose range of acquirements extends no further than to the ability to occupy a desk in a counting-house, or a lawyer's office, we would warn all such against the delusive hope of finding congenial employment here. If they do come, they will, in all probability, be compelled to resort to gold-digging, shepherding, or working on the roads. There is not the same demand for clerks here that there is in England, even in ordinary times; but in such times as the present, clerking really ceases to be an appreciable element in the industrial occupation of the colony. Let a young man by all means ask himself what else he can do besides merely writing a good hand, before he ventures to Australia: for it is upon that *something else* he will be compelled to depend for support if he does come.

We should add, that it is not advisable for invalids or persons in delicate health to come here, but especially during the winter months (that is, *our* winter months); because the inconveniences to which they will be subjected cannot fail to be prejudicial, and might possibly prove fatal to them. And in speaking thus we are not intending to damp the ardour of any person who feels impelled to try his fortune in the gold colony; but we are faithfully setting before him the real state of the case, in order that he may be enabled to take such measures beforehand as shall save him from subsequent bitter disappointment.

CHINESE EXTRACTS.

(Continued from p. 468)

Of all the disasters which the Ningpo authorities have been called upon to encounter within the past few months, none filled them with greater apprehension than the prospect which was held out of a grave collision with France, supposed to be impending in consequence of riots in Chusan, in which Roman Catholics severely suffered, and which led to the desecration of the tomb of M. Levoisin, late Bishop of the province of Cheh-Kiang. M. Montigny, the able and energetic Consul of France at Shanghai, was sent for in great haste by the mitred shepherd of the scattered and unlucky flock, and he lost no time in making a personal investigation into the circumstances of the case, and as those are of general interest they shall be briefly related.

The injuries of which the native Christians at Chusan complained have been stated in general terms above. On the other hand, the pagan population accuse the neophytes of banding together under foreign protection for the perpetration of a series of outrages upon society at large. These difficulties appear to have originated in the seizure of many of their temples, which were converted into Romish chapels. Probably the success that attended the first audacious robbery of this kind so far encouraged one party and disheartened the other, as to render subsequent spoliation a matter of course; and for which there could be no redress. As it will be necessary to a correct understanding of the Chusan troubles to describe this bold adventure, the following account is given, which, having been published in the Hong Kong Government paper, and derived from official documents, will not have its accuracy called in question.

“Père F. X. Danincourt, apostolic missionary of Ningpo, (now Bishop of Chehkiang,) figured as principal in an affair which took place on the 15th of August, about 40 le from Tinghai, the capital of Chusan. It appears that some native Roman Catholic converts, who had an interest in one of the temples, were desirous of turning it into a Catholic chapel, in opposition to a majority of persons to whom it belonged. From words the disputants came to blows, in which the converts had the worst of it; and two of their numbers, after being severely beaten, were handed over to the magistrates of Tinghai.

“As soon as M. Danincourt received news of their imprisonment, he went to the Tontai of Ningpo and insisted on their liberation, and that their opponents should be apprehended and punished. His demand not being attended to, M. Danincourt hired a Portuguese lorch, No. 21, and with about thirty volunteers from the other lorchas in port, sailed to Chusan. The natives, frightened at seeing so many armed foreigners, deserted their houses and made off towards the hills, but six or seven were overtaken and carried to Ningpo in chains.”—*China Mail*, Sept. 28, 1848.

This picturesque island is diversified by numerous lofty hills and small intervening vallies which open towards the sea and are so flat as to be almost on a level with it. The inhabitants, who are congregated on these plains in small villages and hamlets, have selected the most beautiful prospects as sites for the temples which their piety has erected to the lares, penates, or to some god of Budhist Pantheon, and which always serve by their appearance to enliven if not to beautify the landscape. Some are situated in copses at the passes, others are concealed in dense foliage at the entrance of glens, and one is always found in the centre of each valley, surrounded by graceful bamboos and majestic camphor trees. They are used more for recreation than for devotion; within their walls all the Thespian exhibitions take place; and as they are open and free to all, they are places of great resort on festive occasions for families far and near. When unemployed for purposes of worship or amusement, these utilitarians turn them into workshops, where handicrafts, which the people cannot conveniently carry on in their small dwellings, are pursued. Oftener they are used as places to stow away water-wheels and other large implements of husbandry. But all of them are found useful as places of rest and shelter. Some indeed appear to have been erected at the way side for this express purpose, hence Justice Gutzloff (they were all under the jurisdiction of the quondam Missionary, when he was police magistrate at Chusan) used to designate them "Chapels of ease." All these temples are common property, erected by subscriptions of the neighbourhood generally; and although in a few cases they may have been mainly erected by several of the wealthiest families, yet even in these the whole populace possess more or less right to the building and land, and none of them can be justly appropriated to other uses than those to which they were assigned, except by a consent nearly or quite unanimous. One of the best temples fell into the hands of the Roman Catholics in the manner described in the *Mail*. It is not easy for the uninitiated to ascertain whether the adherents of this unscrupulous sect were instructed to imitate their apostolic father or not; but this much is clear, the example furnished was not lost upon them. The cupidity of priest or people or both led them to intrigue and scheme for the possession of other choice temples. Some of the people seemed at times stiff-necked and mulish, their heathen prejudices making them loth to part with objects entwined around their earliest and fondest recollections; but fear so far predominated, that none presumed to resist the aggressors. They knew that the power which would be arrayed against them was greater than that of their authorities, and that these had been already bearded and bullied by the Christian party; how then could they, poor villagers, have the temerity to interfere.

Both officers and people were from time to time intimidated by intimations respecting the power of France; and a course of jesuitical chicanery was pursued by which British officers were so far duped as to contribute to the same end. Reliance, however, was mainly placed on the zeal and devotion of lorcha men, those faithful sons of Mother Church, who are

“ Of such as do build their faith upon
The holy text of pike and gun,
That prove their doctrine orthodox
By apostolic blows and knocks.”

In this manner the papal form of Christianity has been propagated in Chusan, and with such rapidity, that in all probability ten years will suffice to bring that beautiful country under the dominion of the holy see. Violence has been resorted to only in extreme cases; the course adopted by the very reverend or right reverend (I forget which) M. Retourd in Tangkiang appears to have been pursued in Chusan. That worthy prelate tells us with what happy results he distributed beads, crosses, and medals, among the natives in his district whose importunate entreaties for the meretricious gewgaws were same to him. The more showy medals and crosses he offered as premiums to any who would bring in a convert from idolatry. Father Retourd informs us how he managed in the distribution of such articles:—

“ I often became very displeased, I raise the tone of my voice, I assume a repulsive air, then they become silent; but if unfortunately they perceive that I am suppressing a smile (how could he help laughing) they presently return to the charge, and I cannot dismiss them until after having found in the bottom of my box some old medals, which I give them, and which they receive with inexpressible contentment and joy.”

The medals here spoken of are doubtless like those bestowed upon upon the Ningpo and Chusan Christians, and what are probably termed in ecclesiastical parlance “ Medals of the Immaculate Conception,” and which, apart from the superstitious and idolatrous ideas connected with them, are prized for the cabalistic power supposed to reside in the foreign writing and figures which they contain. Our Tangkiang divine assures us, that by his measures “ the greatest sinners suffered themselves to be caught in his net.” There may be a little exaggeration here, but I can vouch for the literal accuracy of such a statement were it made respecting our Roman Catholic brethren at Chusan. Each chapel became a very cave of Adullam, “ every one that was in distress, and every one that was in debt, and every one that was discontented, gathered there.” The Chinese are fond of forming themselves into small societies, the members of which are sworn friends, and no one of whom can be offended with impunity; thus they frequently set law and justice at defiance. Connection with a rising sect of such power, was eagerly sought by men who felt the restraints of their families and of the laws to be irksome. Were any entangled in broils with their own or any other clans, or concerned in lawsuits, or implicated in crime, the ready way of escape was to join a society which enjoyed the protection of a foreign flag, and the members of which were free from molestation unless their spiritual fathers took cognizance of their misdemeanours, and it was well known that whatever tended to reduce pagan power, or to extend papal influence, would be regarded with favour, and that the means sanctified the end. Had these neophytes confined their attacks to the religion of their con-

freres, and been content with seizing temples and land set apart for religious purposes, the people would have looked on with comparative indifference; but such was far from being the case: instances of injustice inflicted on the heathen were of frequent occurrence, and the only redress afforded, the only way to preserve peace and property, was to join the apostolic party. A Roman Catholic at Chusan frankly confessed to an English visitor lately there that he had joined them to avoid the payment of a debt, which the native bystanders all assented to.

The fact should not be concealed, that Popery, in this part of China at least, is virtually an *imperium in imperio*: its adherents are no further under the jurisdiction of the native authorities than comports with the pleasure of his lordship the vicar apostolic of the province of Cheh-kiang. The Mandarins are not ashamed to acknowledge their inability to cope with foreign priestly power; an illustration of this was given not long since by a district magistrate, who described the manner in which the sacerdotal occupants of a temple at Chin-hai were induced to quit their premises by the worshippers of Mary. The description was not verbal, and is more susceptible of explanation by the pencil than the pen. His worship, sustained by his left pedal extremity, threw the other forward with spasmodic violence, evidently meaning to intimate that the process was what is familiarly called kicking out of doors. Whether this is to be taken in a literal or figurative signification is uncertain. Corroborative of the former supposition may be cited the proceedings at Chusan from the episcopal invasion already described up to the latest dates; but as the Chin-hai temple is said to have been in the possession of priestesses and runs, it is more in accordance with propriety and delicacy to interpret the description figuratively. What with those members who were brought in with beads and crucifixes, and the prospect of oppressing with impunity, and what with those who were put to the right about in the manner described, the new religion increased rapidly, and multiplied its chapels as occasion required, no less than thirteen pagan temples have already been converted into mass houses. The principal of these are:—The Temple of Rising Goodness—Little Carem Mountain—Flower Peak Temple—Forest Family Temple—White Spring Hall—Eternal Succour Monastery—Great Tranquil Convent—Duke Twin Lion Shrine—Hall of the Liwei-wei Pass Pagoda.

New names were no doubt bestowed on these, probably on the occasion of baptizing of the bells, for that apostolical ceremony could hardly have been omitted if bells had formed any part of the spoils.

Let it not be supposed that those arbitrary proceedings were an unmitigated evil to the natives of Chusan; to say nothing of the sublime and purifying doctrines of the Christian faith which are blended with Romanism, all of which are new to this people; but merely regarding those points wherein Popery and Buddhism bear a close resemblance, it will be seen that the changes have been improvements highly conducive to the fine arts, and thus favourable to a higher civilization. The imposing paraphernalia of the new worship as a whole is far better

adapted to strike the senses than the puerile ceremonies of the effete system. It is true that both propose to propitiate high heaven with the incense of pastiles, but the fragrance of the Christian so far transcends that of the Pagan service that to the olfactories of corporeal intelligence at least, the former is infinitely more acceptable. In like manner the rosary, the bell, the lighted taper, the multiplied genuflexions, the tonsure, the purgatory and services for deliverance from thence, with a host of other things common to both sects, indicate a marked superiority, showing that the taste in the West has made decided improvements on the superstitious mummeries of the East. It is in the equivocal virtue of celibacy alone that the model does not exceed the original. As regards the aids to devotion employed which disfigured the old temples compared with those which adorn the new, it is hardly necessary to speak, the dull natives themselves fully appreciate the difference. Instead of a grim image of Budha of the rudest style of art, you see a representation of Jesus which, if not a *chef d'œuvre*, yet cannot be regarded without emotion. Instead of an uncouth figure of the Goddess of Mercy, you meet pictures of Mary, or of some other saint, elegantly engraved and splendidly coloured.

A good madonna indeed seldom fails to captivate a Chinese, man or woman. The superiority of Romanism over Buddhism obvious alike in points where they agree as well as in those where they differ, is too palpable to escape observation; and it is only necessary to preserve judicious measures in order to attach these idolaters to the self-styled infallible church, into which they will readily enter by fits of easy transition.

The measures pursued at Chusan for the propagation of the faith, though rather exceptionable in some respects, were attended with the desired results. Patience only was necessary to secure the ascendancy of foreign priestcraft throughout the island; but impetuosity, insolence, and presumption so characterised the proceedings of some of the native Christians recently, that the people rose and declared that Christianity should be exterminated.

The immediate occasion of the Chusan riots was the desecration of the tomb of a Buddhist saint; a brief narrative of which was given by an intelligent native of the island in a letter addressed to a friend at Ningpo. The writer, after adverting to the fact that ever since the establishment of the "Lord of Heaven's" religion at Chusan there had been crowding into it some of the most lawless of the inhabitants, who, relying on the powerful influence of the sect, were guilty of getting up false accusations against innocent people, usurping their fields, gardens, and the like, he says,—“There is in the country to the west of the city the Monastery of Rising Goodness, in the garden of which stood the tomb of a good priest, who was interred above two hundred years since. The body had been placed in a great water jar, covered, and over all a stone pagoda was erected. The Roman Catholics tore down the pagoda for building materials and exposed the jar; whereupon the priest appeared sitting just as he was placed two hundred years ago, not altered in the least! Observing that, they prepared a frame on

which to burn the body; but as soon as they touched the jar the priest vanished in a dark vapour—he became invisible, and nothing was left but some dust. The villagers were startled at this great spiritual occurrence, and were thereby greatly incensed against the Lord of Heaven's folks. The people of every valley assembled, forced themselves into the chapels and houses of these bad persons, destroying everything they could not take away, and pulling down or burning several houses. The money and things found were used for defraying expenses, and they made clean work of it, but only attacked the bad of the Lord of Heaven's sect. It has been bruited about that the members of this sect have asked the Bishop to send war steamers to kill us all, and I write this to beg you will condescend to give me early information about it, that I may make off with my family."

The writer of the above also says, that he thinks the Bishop was not aware of the wrong which his followers had inflicted, although the number of those who have suffered cannot be numbered.

His statement with regard to the preservation of the old priest's body and its sudden disappearance perfectly accords with well known facts. Light and moisture having been excluded from the jar for a long period, the corpse returned to dust *in situ*, retaining the original appearance until disturbed. In like manner the sacred Ibis which, enclosed in jars and entombed in Egyptian catacombs, is found apparently unaltered until disturbed, when it crumbles into an impalpable powder.

The phenomenon naturally created astonishment and awe, and the place became invested with a sacred character, just as tombs in the West have been owing to some marvel connected with dead men's bones. Feelings of wonder gradually gave place to angry passions amongst the populace, whose resentment at the desecration could not be repressed. They had long submitted to injustice and oppression from the authors of this outrage, but a fear of incurring the displeasure of foreigners, whose power they had learned to dread, caused them, as they expressed it, to "swallow their indignation." Hence no small provocation could have stimulated them to acts of violence, nor could they deliberately have gone to the extent they did on slight causes. They proceeded to the tomb of M. Levoissin, late Bishop of Cheh-kiang, demolished it and exposed and tore the coverings off the corpse. The inhabitants of the villages rose almost *en masse* and violently expelled the Roman Catholics from their borders, destroyed their furniture or seized it to defray the expenses of the turn out, and did not spare the temples which had been converted into chapels.

For some time no member of the proscribed sect dared to appear in public; large numbers quitted the island. Here too the mob showed moderation, clearly distinguishing in their attacks upon chapels between those which had been wrung from them and those that had been erected by the Romanists. This time, the Bishop, instead of taking the matter in hand himself, sent for the French Consul from Shanghai. By the time M. Montigny arrived the authorities were impressed with the heinous nature of the offence, so that they were prepared to

make any concession to avert Christian vengeance. They soon decided to acquiesce, with the mere show of reluctance, to almost anything. The pirates and the salt rioters caused them so much distress that they were now anxious for peace, everywhere, at any price, above all at Chusan, and with the foreigners.

Conferences were accordingly held at Tinghae, at which were present the French Consul of Shanghai and Ningpo, the French Roman Catholic Bishop of Cheh-kiang, the Deputy of the Governor of the Province, and the Magistrate of Chusan, the result of which may be gathered from the following proclamation.

Wang, the Magistrate, after stating that the afore named officials had deliberated respecting the altercations between the people and the Roman Catholics, orders that, "every thing which had been taken from the latter should be restored, that recompense should be made for property destroyed, and that they should be allowed to return to their homes without molestation. If there should still be disturbances then you people are to inform against them, bringing evidence, but you are not to harbour resentments concerning former disputes. It behoves me quickly to issue this proclamation requiring you, gentry, leaders, and constables, to make a careful investigation respecting the loss and damage which, in violation of the laws, led to the destruction of property to fighting and plundering have been owing to injuries inflicted on the people of Tai-wi by the Roman Catholics and the propagation of this religion; and its adherents being excessively covetous and perverse, compelling the people to swallow their anger so that these could no longer restrain their resentment but made disturbances therefore there shall be no unnecessary rigour in their punishment. Now, I have conferred with the French Consul in the matter, and it has been decided that the Rising Goodness Monastery, the Great Tranquil Nunnery, the Pagoda Hall, Twin Lion Shrine, and the Eternal Succor Temple shall be sustained by the Roman Catholics; and while you are to arrest nothing you are also to see that there be no unfounded or exaggerated returns; such things should not escape the eyes of the neighbourhood. If any needlessly quarrel with them bring the offenders before me for trial. You must act justly."

This proclamation caused no small discontent among the people; who, conscious of their power and the justness of their cause, were not disposed to see their rights bartered away by such summary proceedings. It became necessary then to make other arrangements, which were soon after made public by the Prefect in the following proclamation:—

"Whereas the riots be returned to the people. The disorderly and wicked members of the sect of the Lord of Heaven shall be punished sufficiently to show you that I am just and am anxious to tranquillize your minds. But after all lest ignorant villagers should think that forming mobs, pillaging and destroying property, is no great matter and thus cause themselves to fall into the meshes of the law, I hereby issue this stringent prohibition against everything of the kind. You will all understand then, that you are to mind your own business, to

keep the laws, to pacify your clans, and harmonize the neighbourhood, that unitedly you enjoy the pleasures of peaceful happiness. If you should again receive insult and injury you are to inform against them truthfully. If you again riot and fight you shall surely be apprehended and punished without forbearance."

This proclamation does not appear to have given satisfaction to the other party. Nor could it be well expected that the "Right Reverend Father" would so easily part with the temples procured at such personal risk and trouble. Let us hear the Prefect's next proclamation, and observe how this difficulty was met.

"Wang issues this perspicuous proclamation to tranquillize people's minds respecting the quarrels between the people of the village and those of the Roman Catholic chapels. I have examined this matter in connection with the Governor's Deputy and French Consul Montigny. The Consul has apprised the Religionists who may trouble or injure the people that they shall be sent to me from the chapels for trial and punishment, and if they terrify people out of money the affair shall be strictly examined and the money returned. The Bishop has investigated the case of the desecration of the priest's grave, and reprimanded the authors and sent them off the Island. Bishop Danincourt and Consul Montigny have appointed to restore the tomb. Although written agreements have been given you, the people of You-Chang and Peh-chang villages, with their temples to the Roman Catholics, I will nevertheless have them returned to you if you are still unwilling to let them remain in their possession. *But the improvements made on the chapels shall be estimated and given to them.* If, hereafter, the members of this sect are to rely on its power and influence and create disturbance, you may come and inform me of it or go to Ningpo and tell the Bishop, who will punish them rigorously. You are not to take up quarrels and disputes yourselves. Reparation must be made for injuries which they have already received. Moreover let the leader be apprehended and brought before me, which pertains to justice. It is necessary that this matter should be quickly cleared up, to enable the Consul to send an early reply to the Minister of the great French Nation residing at Canton, that the two states may not lose their peaceful relations. And for this purpose I issue this proclamation to you people that with one accord you yield implicit obedience. Your great officers are anxiously striving to harmonize Chinese and Foreigners, whether they have become members of this sect or not. All of you are to rely upon reason and not on violence."

Nothing was said publicly respecting the desecration of the grave and corpse of the late Bishop, but for what reason it is not easy to conjecture. By requiring the people to pay for the repairs and improvements made on the buildings taken from them, it is probable that these so far from reverting to their owners will remain as they now are, and that too under legal sanction.

Observe the progress of priestly encroachment as manifested in the document given above. By what means a Chinese Magistrate was induced to make his countrymen amenable to papal laws we cannot

know; though it were well worth knowing. It has long been notorious that Romish priests exercised judicial functions in this part of China, but hitherto it has been, it is supposed, in defiance to civil authority. Happily the power thus assumed or conferred promises to be exercised with goodness and wisdom; and as we have given place to documents issued by authorities appointed by the Peking Cabinet let us hear what the new power delegated by the Vatican promulgates touching the same grave questions.

“Shawulioh Danincourt, by *Imperial* appointment Fung la fû of China, Bishop and Regulator of Religion in the Province of Chch-kiang, issues this proclamation to all included in the religion. A careful examination of the intentions of the Lord of Heaven in establishing his sacred religion shows that it was for the information and perfecting of mankind that the members should strive to save and to love men. Moreover, its laws strictly require respect and obedience to the Emperor and rulers and a careful observation of the laws of the land, wherein these do not lead to sin against God, or to disobedience of the commands of the Church. Now it appears that members of the religion and the learners thereof have not kept the laws, and, relying on its influence, have been wicked; causing those without to contemn and hate our faith; and on which account God has permitted these calamities as a caution. Contemplating these things, our hearts are excessively pained and our tears flow in consequence. We experience favour from that great officer the Consul of France, whose heart is eager to protect our holy religion, and who is kind towards its professors, as is everywhere known. With him we shall strictly examine the transgressing members, inform the officers that they may be punished according to their offences, by which all may hereafter know that our religion does not tolerate bad men who transgress morality and break the laws. There are hired servants in our chapel from other places who have been acting improperly at Tinghai, whom I have sent away. Henceforth, members of our religion, whether high or low, who act disorderly shall not only receive no shelter from me or the associates, but we shall immediately inform the local officer against them. Let all sincerely keep this in mind. It is not just that the conduct of bad men should involve good men in calamity. I have come here to deliberate with the Consul and Chinese officers: and amongst us there is a concurrence of opinion that our conscientious and respectable members on receiving any injury should appeal to the local officers for justice. The officers will see that you are treated equitably and will protect you, that you receive no damage at the hands of evil men. You must act sincerely and not slight the three following rules, which I write for your guidance:—

“First.—Let the heads of each village inquire into the conduct of members, and if they know of anything unfavourable or hear the like from others they are to report it to me.

“Second.—Hereafter if chapels are to be established it is necessary that the local men of the place agree on the presentation of the temple

for that purpose. And before receiving it there must first be a proclamation issued to that effect by the Magistrate.

“Third.—None of our catechists shall enter the courts unless with permission from us, and they are not to usurp authority over the people. All that disobey shall certainly be condignly punished. Henceforth let each one yield trembling obedience. Do not oppose these special commands.”

There is much to commend in the foregoing document and nothing to censure, though exception might be taken to the concluding of the commands of the religion or church with those of God in the same category, when laying down rules for subjects or citizens, as their accordance is not perfectly obvious to all minds. There are not wanting, indeed, persons versed in history who assert that the religion of Rome has a political tinge; if so, a conscientious Chinese Roman Catholic must sometimes be sadly perplexed when, for instance, he discovers that the laws of the Son of Heaven, those of the vicegerent of the Almighty, and those of God himself, are all at variance.

It may be remarked that provision appears to have been made for procuring more temples; and if the consent of some of the leading men can be obtained, unanimity is of little consequence; a proclamation is easily procurable from almost any magistrate for a trifling *douceur* in the form of a few foreign “bis ruits,” as dollars are termed, which, it must be confessed, is infinitely better than invading the island at the head of armed Portuguese, and with the aid of such iconoclasts converting temples into chapels.

What the Right Reverend Father means to imply by the designation Fung lah fū, which, literally rendered, signifies the officer of unbounded delight, is by no means clear. Nor is it easy to conjecture whence he derives the designation of *Imperial*—a term which carries great weight in China. If it be premised that no member of the sacerdotal hierarchy ever did, or ever could, perpetrate a pious fraud, it will be difficult to come at the truth in this matter. Surely it is not derived from the “Neveu de son Oncle,” for he has not yet been forcibly invested with the purple, and certainly the immaculate Pio Nino never bestows such titles; if then it did not come from above where could it have come from?

Our latest intelligence from Chusan states, that proclamations had failed to tranquillize some of the refractory denizens of Tinghae, and that the Prefect was compelled to have recourse to the bamboo. It was applied in the usual manner to a party which had assailed his worship whilst passing through the streets in a sedan; they not only failed in beating him, but were captured by his attendants. Numberless petitions have been presented to the Yamun protesting against the concessions made to the Romanists; and considerable discontent exists owing to the banishment from the Island of some Fkien priests, champions of the popular cause.

Governor Chang, it is said, returned to the provincial capital in a sulky mood, everything seemed at sevens and eights, as the Chinese

phrase has it, and he was conscious that he had gained no laurels. His Excellency's repugnance to foreigners and their religion was notorious, but whether the travesty of Christianity which he saw induced him to entertain more favourable views regarding us and our religion is a question.

In giving publicity to the occurrence narrated above, the writer has been actuated by no unkind feelings, he has never even had the pleasure of meeting his neighbour the prelate whose conduct gave rise to them. Nor has illiberality prompted it, for he professes an earth-wide Catholicism; but the proceedings have been exposed and rebuked solely to check their recurrence, and it is hoped that the effect will be salutary, as the method of proselyting hitherto pursued at Chusan and Ningpo have been inimical to every good cause and derogatory to the foreign character and the Christian name.

The occasion appears one for animadverting on the conduct of the Romish priesthood generally in China. So far as they labour to enlighten and elevate the natives, every good man will bid them God speed; but when they turn aside and defame men who are professedly devoted to the same noble purposes, doubts arise respecting their goodness and wisdom, however much their zeal may excite our admiration. Secresy is so strictly observed as regards their proceedings in China, that definite information can seldom be obtained; there exists, however, abundant evidence that the sentiments expressed by Count de Bési, Lord Bishop of Shanghai, in a Chinese proclamation, are common to the apostolic order in China generally. This proclamation (a translation of which, as well as the original, may be seen in the *Chinese Repository* for 1847) enjoins upon the members of the Church, and upon all others, either of burning all books they can find which Protestant Missionaries have issued, or, what amounts to the same thing, of delivering them up to the "Spiritual Fathers." These commands are religiously obeyed; an illustration of this was afforded, not long since, on a large scale. When H.B.M.'s steamer *Reynard* went to the Peiho, near Peking, some one on board took passages of sacred scriptures and other books, which were left there for distribution. Unhappily, they fell into the hands of the native Christians, who made a bonfire of the whole collection. Translations of the sacred scriptures, works on morals and science, are prepared with much trouble and published at great expence and, whatever their defects, certainly merit a better fate, at least until these Right Reverend Fathers prepare others. Were they to translate the scriptures according to the ability God has given them, Christians generally would aid in their distribution, and if they care to enlighten the Chinese by works on science, they will, in that department, receive the hearty co-operation of all men. But the promulgation of such a needless *Index Expurgatorius*, in the present state of China, seems rather premature, and, moreover, it is a species of despotism to which the Chinese mind is wholly unaccustomed; nor will these people generally comply with such demands until priestcraft reduces them far below their present abject position.

To return to the Apostolic and Holy Roman Catholic proclamation, where, besides denouncing the sacred scriptures and books on religion and science as being "corrupt and obscene works of the devil," the poor Chinaman who accepts and the reprobate foreigner who distributes them are alike pronounced "children of the devil and consigned to the torments of hell!"

Holy Fathers! Do suffer a word of expostulation. Why so economical of Catholicism? Waving any objections which might be started as to the legality of sending your Protestant brethren so summarily to the devil, let me ask if it could not be done with less ostentation and without calling the attention of the people of the Middle Kingdom to the transaction? If you are thus explicit and unreserved before the world, what, one naturally inquires, is the nature of the homilies addressed to the sons and daughters of China in the confessional recesses? As regards the latter class of neophytes, the absolute purity which, in every age and in all lands, history accords to you, is a sufficient guarantee as to the character of your whisperings in their ears; but, judging from the animus of the foregoing document, your aim is not to improve their manners and ennoble their minds, and your teachings will not make them better members of society. If our Roman Catholic brethren in the interior are so instructed, and if they carry out their principles after the style of the Chusan converts and their spiritual leader, what wonder is it that their necks are sometimes wrung or that occasionally some luckless head is taken off? It is well that the very Catholic process of roasting the contumacious alive has not been adopted by these ignorant heathen, or, it is to be feared, the country would often prove too hot for them.

Let me exhort you, Holy Fathers, to relinquish book burning, and in your renunciation of heretics to affect a little suavity. Do not set yourselves in opposition to the circulation of the Bible nor to the dissemination of works on science amongst the Chinese. Both are designed of God for the enlightenment and elevation of our race, and are worthy your profound consideration. Until you pursue a more liberal and genuine apostolic course, the assertion which the immortal author of *Les Lettres* on Provincials wrote respecting your predecessors will be applicable to you. "Know then," said the learned and truly Catholic Pascal, writing of the Jesuits of his day, "that their object is not the corruption of morals, that is not their design, but as little is it their sole aim to *reform* them—that would be bad policy."

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from page 405.)

The next day (Sunday) the Bishop, who had taken up his abode with Dr. Bettelheim during our stay at the Island, came on board, and performing divine service, giving us a beautiful sermon from 6th Hebrews 19th verse, "Which hope we have as an anchor of the soul both sure and steadfast." His Lordship was not sorry to get ashore again, for the weather looked very threatening—before sunset it was blowing a heavy gale; but we rode it out very well with top gallant masts on deck and yards pointed to the wind. I am very much pleased with our anchorage which is called in the chart Barn Pool.

I was to have received a notice from the authorities at what hour it would be convenient for me to meet them the next day; but instead of that I had an intimation that the Viceroy, or chief authority next after the king, was too unwell to move that day, and hoped I would allow him to postpone the meeting till the following, which of course I consented to do. As this then was to be a *dies non* as far as business on behalf of Dr. B. was concerned, I took my gun and had a long ramble over the country as far as Sheudi, the capital, a collection of buildings surrounded by a double wall, situated on a lofty hill about five miles from Napa. Here, it is reported, the King of Loo Choo resides; but in what state or style we are totally ignorant, for no European has been permitted to pass the portals of the city gates. We attempted it but in vain, and although Mr. Columb, one of the Mids, and my steward, succeeded in climbing to the top of the outer wall, the crowds of people collected inside who, but for my double-barrelled gun, would have sent them back again quicker than they got up, effectually prevented any examination of the interior of the city. The view from this point is very beautiful, the country every where well cultivated, principally with the sweet potato, and the road hence to Napa broad, well paved, and partly macadamised; although there is abundance of wood, we were disappointed at not meeting with any game: a few golden plover, snipe, and curlew, (in the rice grounds,) and pigeons, were all we could find to bestow our powder and shot upon: it was too early for the woodcock.

On Wednesday, the 9th October, I received an intimation that the Regent of Loo Choo, Shang-tamo, would receive me at the Court House, at Napa, about noon. Accordingly I repaired there at that hour with the Bishop; and as a display of force might not be without effect, we were accompanied by a guard of 50 men, small-arms men and marines, and all the officers of the *Reynard* in full uniform. The progress of the party, preceded by a drum and fife, with the colours flying, evidently made a sensation. The streets were crowded with spectators, who gazed with astonishment on so novel a spectacle. Our reception was most gracious, partly no doubt under the influence of fear, and the proceedings were almost of the same character as at the

last meeting. We were entertained with a sumptuous dinner in the Chinese style; and, after a long palaver, I received assurances from the Regent, that Dr. Bettelheim should be very differently treated in future; at the same time, with many protestations, he presented me with a petition containing the reasons which he hoped would influence me to grant the prayer of the one presented to me at my first interview or conference with the authorities of Napa, and which I had positively refused (in writing) to comply with. The presents were now again brought in, and this time accepted. They consisted of pipes and tobacco, tobacco-pouches, native cloth or stuff, half cotton half silk, and fans. Each of the officers was presented with a small quantity of tobacco, a pipe, a couple of pouches, a roll of cloth, and two fans; the Bishop and I had, in addition, two jars each of the spirituous liquor sackee. Before leaving the court-house, we exacted a promise from the Regent that he would pay the *Reynard* a visit the next day, and so took our departure with the same state we had arrived, doubtless to the intense joy of the Mandarins.

Thursday October 10.—This was to be our last day at Loo Choo, as I hoped to get away the moment my visitors left; made great preparations to receive them hospitably, though minus “sea slugs” and “shark’s fins.” At noon, the Regent, or Great Minister of Loo Choo as the card expressed it, Shang-ta-mo, arrived in our pinnace, with a crowd of attendants in the other boats, including Ma-liang-tsi and Chin-chan-lee, the Governor and Deputy-Governor of Napa; and after going round the ship, and expressing unfeigned astonishment at her engines, (the *Reynard* being the first steam-vessel that has ever paid them a visit,) we sat down on the quarter deck. The cherry brandy and cigars were handed round, and Dr. Bettelheim presented in due form, for I was most anxious to show to the authorities the regard that was felt for his position by me as representing H.M.’s Government. Mrs. Bettelheim had come on board with him, and seemed most affected by the attention paid by every one to her husband. The conversation that followed was very desultory; among other questions, I asked the Regent this,—which nation he thought most desirable to have as a friend and ally of Loo Choo, England or Japan? To which he replied, he had no doubt England was the greatest and strongest nation, but Japan was *nearer* to them, and the two countries had been united by the closest ties for a long series of years. At my request Dr. Bettelheim handed the Regent the presents I begged his acceptance of; the following is a list of them:—Six bottles of cherry brandy, six bottles of gin, two packets of Windsor soap, two bottles of scents, half a dozen wine-glasses, one jar of preserved ginger, and a jar of cumquats. The other Mandarins had also presents made them by the Officers, and every thing appeared to be progressing most favourably towards the best possible understanding, when unfortunately the steam began to rumble in the boilers, (I had ordered the fires to be lit that nothing might delay our departure after bidding adieu to our guests,) and the Regent was immediately impressed with the idea that we wanted to run away with him; nothing could persuade him to the

contrary; so I was obliged to man our boats and send him and his suite ashore under a salute of three guns; and so pleased were the poor fellows to find themselves once more safe on terra firma, that they almost "kowitzed" to the Mids in charge of the boats after landing. We were soon under way afterwards.

Before taking leave of this interesting island, we add a few remarks on the state of the people, who appear to me sunk lower in the scale of human intelligence than any race of beings I have yet been in contact with in this part of the world. Of their extreme poverty there can be little doubt; although I have seen many thousand people during our stay here, I have seen no rich or valuable clothing. Their houses are well constructed externally, but the material is coral, and their excellence is owing to the labour bestowed upon them; there is a total absence of furniture, a simple mat of bamboo, stretched tightly across the floor from wall to wall, forming table, chair, couch, and bed. Their food is of the simplest kind. In the markets all the eatables for sale or barter are made of pulse; no delicacies of any kind were to be seen, and the sweet potato seemed to be the staple food among the rural population. Although a great deal of land was under cultivation, the produce appeared principally of the lowest order of roots, such as sweet potatoes instead of wheats; rice of course is grown in the low lands. No wheeled carriages are on the island, and very few horses, the use of which appears to be almost entirely restricted to the Mandarins: chairs, called "kagus," are used by the *rich* as a means of transport they are carried on poles by two men, and are something like those used by the Chinese, but more inconvenient, the person carried sitting with his knees up to his chin; the materials of which they are composed are entirely of bamboo.

Loo Choo is stated to have been raised to the dignity of a kingdom by one of the Chinese Emperors of the Ming dynasty, three or four hundred years ago, during a war between China and Japan, when the former succeeded in detaching it from the interest of the latter. In token of vassalage, tribute is sent in the junks which proceed annually in the month of October to Fuh-chau-foo, the capital of Fokien province,* to which place the Loo Chooan scholars resort for education, and take their literary degree at the examinations held in that city. Chinese is in consequence the polite language of the country; but the commonly spoken language, the physiognomy, customs, and habits of the Loo Chooans, are decidedly Japanese, and the influence of the Japan Cabinet directs all the official appointments of the local government. The Government, as proprietors as well as feudal lords of the soil, appropriate to themselves about one half of the produce, which is distributed for the support of the officers and literati, who, as the dominant class, live a life of indolent affluence, and form about a fifth of the whole population. The supply of provisions we received, which included bullocks, pigs, fowls, eggs, vegetables of different kinds, prin-

* Montgomery Martin says, "The Loo Choo embassy comes by way of Fookien, twice in three years, one ambassador, and one deputy, the number of interpreters and servants is not fixed."

cipally sweet potatoes and cabbages, and for which no payment was made, although it was tendered, was evidently taken from the poor agriculturists for this special purpose by the Mandarins, and the *pre-sents* probably from the public stores, for there were no shops of any kind to be seen in Napa, and a few smiths and carpenters the only work people employed in the town, that I saw. The dress of the people has been so minutely described by Basil Hall, that I need scarcely allude to it. The hair is worn in a peculiar tuft on the head, fastened by two pins, which are of silver in the higher orders and of brass among the lower class. A simple robe of coarse grass cloth (barege) fastened by a girdle, is the dress commonly worn.

The following is a translation of the Petition I received at my first interview with the authorities of Napa; it will serve to give an idea of the style adopted by them in their communications with me.

“The dutiful petition of Ma-Liang-tsae and others, the Vice-Governor-General of Loo-Choo, entreating His Excellency to look down in compassion and take away Bettelheim and his family to his home, that our little country may be at rest.

“We lie hidden in a corner of the sea; the soil is barren and the people are destitute. During the period of Bettelheim’s residence here both Mandarins and people have been employed to procure him supplies, to the neglect of their avocations and the prejudice of public business.

“The upper classes are liable to expences on account of sacrificial offerings and public granaries, and the people are at the expence of providing for themselves their daily provisions; which things greatly impoverish us. If Bettelheim do not soon return home, our distress must increase still further and the country will not be able to stand erect.

“Already, last year, the eleventh moon (December 1849), on occasion of the English Government sending an Envoy hither, we transmitted a special dispatch requesting that Bettelheim might be removed. As yet, no answer has come; but as your honourable ship has just arrived, while we are expecting the reply, we beg your Excellency to receive Bettelheim and his family into your honourable ship and to take them home. Thus not only shall my humble self be ever thankful, but the whole country, Mandarins and people, will be everlastingly obliged by your kind favour. An urgent petition. Taou Quang, 30th year, ninth month, 1st day (corresponding to October 5th 1850).”

The following “memorial,” presented at the same time, gives, probably, a pretty accurate account of the social state and prospects commercially of Loo Choo. It was translated by the Bishop and Dr. Bettelheim, but they have given some Islands in these seas a name or designation the charts and directions are guiltless of.

“The dutiful petition of Ma-Liang Tsae (and others) the Vice-Governor of Loo Chou setting forth the real truth.

“We learn from hearsay that certain persons of your honourable ship being sick and requiring Bettelheim’s medical aid slept in the temple (Dr. B’s residence). Now, should this lead to their remaining

here it would give us much uneasiness. Our humble country is poor; the few sorts of grain which we grow are scanty. During the period of Bettelheim's residence here, from the highest down to the lowest classes, we all, day and night, have been full of business with him, so that we cannot attend to our avocations, which exposes us to bitter want. If now still more persons stop here, our troubles would be greatly increased, so that the nation assuredly could not subsist.

"As to commerce, our country is destitute; we are but a little nation, and the Islands belonging to this are very small, having neither gold, silver, copper, nor pearls, no raw nor wrought silk, but merely the various kinds of grain and vegetables; we can scarcely be called a country.

"Ever since the Ping-hau (title of former government of Loo Choo) was declared an hereditary kingdom, under the Ming dynasty, and thus became tributary to China, whenever we convey our tribute (to China) we buy there silk stuffs for official caps and dresses, medicines, and other articles. This, however, would scarcely suffice; but as the Too-kia-ra (in Loo Choo usually pronounced Too-chára, probably the Tatymera Islands) belonging to Japan, trade with all neighbouring countries, we procure from them, besides the articles requisite for the tribute and various Chinese goods, for sale in our Island, rice, grain, timber, iron, copper, tea, and other things, but scarcely in sufficient quantity. Grain being scarce in our poor country, our daily diet consists of mere potatoes, of which we have not one catty too many; when visited by the calamities of a typhoon or drought, though we should desire to feed only moderately on the wild sago tree, still it would not suffice to appease our hunger, and we must, therefore, borrow rice from those Islands, which we consider as our special preservers from starvation. Alas! such is the dismal tale of our country. When, therefore, in the year of 16 Kia-king (1812) and in the year 17 and 18 of Tau Kwang (1837-38) ships came from Mang-ya-li (England?), America, and France, for the purpose of trading with us, we declined on the ground before mentioned. In the year 11 of Tau Kwang (1831) an English merchantman arrived to deliver a dispatch bearing on commerce, but we declined again as before.

"Now, according to the above statement, being but a poor people and without wealth, we cannot extensively trade with other countries. Too-chara is not better off than ourselves; our black sugar, grass cloth, &c., are bartered for the rice and grains of that Island and for other articles, both for the due payment of our tribute and for home use. Such trade then is quite different from the extensive commercial methods of other countries to gain wealth and obtain riches.

"We hear that the laws of Japan severely prohibit promiscuous trading with other countries. Only in the port of Chang-ki (Nagasaki?), where officials are stationed to keep a strict watch, a fixed and limited number of ships as well as of goods are admitted; and Chinese and Dutch merchants yearly visit it for trade.

"The Too-chara, although belonging to the Japanese territory, yet, being near to us, are permitted to trade with this place. But if, on their returning home, they should import forbidden goods by

smuggling, if detected by the officials, they would be severely punished. Should we now trade with you, the Too-charese will, by Japanese laws, be entirely forbidden from having any dealings with us at all. Yea, this year we are not only deficient in articles required for the tribute, but also exposed to severe want in articles of home consumption. Should this happen to be a year of famine, we have no way of remedying such an emergency and must perish from hunger.

"In addition, we have no medium of currency; and goods saleable in our markets being very scanty, foreign ships on their arrival are unable to purchase their daily necessities in our markets, and we appoint special official purveyors to procure, if possible, from the villagers what they want.

"Besides, during the course of several years past, both your (English) and American ships have arrived, requiring many supplies; which employs many Mandarins as well as people, who have thus no leisure to attend to their own avocations and are greatly inconvenienced.

"Now as to the religion of the "Lord of Heaven," (the popular term by which Christianity, or rather the Roman Catholic religion, has been known). We have from ancient times attended to Confucianism and therein found, each according to his avocation and condition in life, principles wherewith to cultivate personal morals and to regulate his family. As to the government of the country, we also endeavour to carry out the rules left us by the sages; rules which secure lasting peace and tranquillity. Besides, our gentry as well as the common people are by nature without capacity, and though exclusively attending to Confucianism they are still unable to arrive at perfection in it. Should they now have to study the religion of the Lord of Heaven, this would surpass their ability, and the heart does not incline to it. Those of Too-chara likewise are fond of the Confucian religion and classics and have to study them thoroughly. Should they hear that we learn a new religion, viz., that of the Lord of Heaven, then most assuredly they would desist from all intercourse with us.

"This our regular and clear petition with knocking (of heads) we submit to the penetrating investigation of your Excellency. Look down with pity and cease sending people to stop here, and desist from wishing to trade with us and to teach us Christianity. Then the whole country, government and officers and people, will be thankful for ever. An urgent petition. Tau Kwang 30th year, 9th month, 1st day (corresponding to October 6th, 1850)."

This is certainly a most interesting document, and I shall probably ere long have an opportunity of testing its truth.

There is very little doubt in my mind that the Loo Choo Islands stand to Japan in the same relation as Too-chara, that portion of Japan from whence the twenty or thirty yearly trading junks come hither. The authorities admitted to Dr B. that the tribute to China is optional. The Emperor would not enforce it, but would not any longer acknowledge the title of "Kingdom" if it were withheld. Japan is always acknowledged to be a stronger and greater nation than China; in short, it is my belief that this is part and parcel of the Empire of Japan, and whatever is wanted here must be applied for at Yeddo.

OCEAN CURRENTS.

(Continued from page 484.)

Lieut. Maury has so ably demonstrated, in your July number, the fallacy of Captain Denham's deep sounding of 8½ miles, quoted by Lord Wrottesley in his speech in the House of Lords and printed in his pamphlet* (p. 23), that we may leave that where it is, in the hands of the American surveyors, notwithstanding it appears, in its original condition, in a chart of the South Atlantic Ocean recently published by the Hydrographic Office. The American officers are dealing in earnest with these matters. Their *Dolphin*, a neat little craft lately at Southampton, is fitted with all the materials for her work and is busily following her business of Ocean Sounding for the benefit of Science. By observing Lieut. Maury's method of checking the depth and your own, Mr. Editor, of reducing it to the quantity of line out to the up and down measure by the drift, we shall have no more exaggerated or extravagant depths in future, and let us hope the *Dolphin* will do this.

We left the subject of Ocean Currents on the African Coast to make room for the interesting soundings and thermal observations in the Gulf Stream. We will now revert to the subject of Lieut. Maury's discoveries, alluded to by Lord Wrottesley. Every seaman who has been on the African Coast in the Atlantic has seen the weather side of his rigging covered with an impalpable powder or dust. The phenomenon is thus alluded to by Lord Wrottesley.

"The other strange story which throws great light on the value of these inquiries is the following, it relates to the probable course of the winds; it was known that the S.E. and N.E. Trades after blowing from the tropics into the equatorial belt of calms rose into the higher regions of the air, and returned, but do they return in a contrary direction and form the same winds again, or do they continue their respective north and south direction till they reach the Poles, finally returning from thence? The philosopher speculating on this question might wish to set a mark upon the fleeting wind, as your Lordships would mark a bird of passage to ascertain whether it returns to the same spot again, but it would appear that this is as unnecessary as it is impossible; nature has interfered as it were by a scientific miracle to reward the patient inquirer after truth. Now a kind of red dust is sometimes seen off the African coast and in the Mediterranean, deposited by the Sirocco winds; a great quantity of this dust fell at Lyons on 17th of October 1846, the red dust was sent to the great naturalist Ehrenberg to analyze; it proved to be dead and living organisms, *i.e.* microscopic animals from the valleys of the Orinoco and Amazon in South America; thus seeming to render it highly probable, that the S.E. trades rise aloft at the equator, travel N. above the N.E. trades, descend at the Tropics, and then form the normal wind of the temperate zone or S.W. wind, and that the N.E. trade performs the same evolution, in the Southern hemisphere in an opposite direction."

Now, Mr. Editor, if you will refer to your volume for 1847, you

* See Title in former number.

will find Mr. Darwin's Paper, read at our Geological Society, wherein Professor Ehrenberg states the fact of two species of the Infusoria of which this dust is composed to belong to South America. He says, "How to explain the enigma of the absence of characteristic African forms and of the presence of two species from South America, I will not pretend to conjecture." This seems to have been supplied by Lieut. Maury in the shape of an upper current of the atmosphere. But is this one of the sixteen actual discoveries of this officer or one of the twelve probable ones alluded to by his Lordship.

We will, however, pass at once to the subject before us of Ocean Currents and the representation of those currents in charts for the use of seamen. And you will allow me to quote your own opinion from the copy of a letter that you have placed in my hands when we commenced this discussion. You have alluded to your own views of showing the wind and weather on charts for the use of the seaman at all times of the year, in a note to my last paper. That has nothing to do with Current Charts referred to in the following extract of your letter to Dr. Buist in the spring of last year, in which you say

"No one will assent more cordially than I do to the great importance of track charts; but only as means to an end: the ultimate object being correct *current* charts, for which indeed the seaman hungers and thirsts. And what part of the world could be selected for the subject of good current charts more important than the great expanse of ocean included between the meridians of the Cape of Good Hope and the Phillipine Islands; for in that space are contained the districts of Monsoons and Trades, Hurricanes and Variables, all of which the seaman in his passage through them has to turn to the best account he can. What an invaluable contribution such a chart would be to his cabin table, that would show him the course he should pursue in sailing from one place to another at each successive season of the year, as deduced from the well digested observations of hundreds of previous navigators.

"But how is this invaluable object to be attained? only by the combination of innumerable track charts, made at all seasons, and under every variety of circumstance; for every well attested track becomes a new experiment; and it is a well known law in all physical science, that the truth can be elicited, confirmed, and established, only by comparison of a multitude of experiments. But to make such experiments available; or, in other words, to render any tracks useful, it is obvious that one preliminary step is of absolute necessity, namely, to be satisfied of what may be called the integrity of the experiment, or the correctness with which the track chart has been eliminated from the log book. But who that has been in the habit of examining the common log books and reckonings of our shipping would adopt any track derived from such a source? He therefore who undertakes to collect and combine a series of charts for that purpose, must, by a careful examination of the log book, ascertain whether the course and distance has been entered every hour or only every two hours,—whether the leeway is entered,—the set of the sea noted,—the allowance to be

made to each compass course for deviation, (a matter much neglected hitherto, but by which only the true compass course can be obtained,)—the direction and strength of the wind and state of the weather,—how often the variation has been observed and noted, without which the reckoning cannot be *verified*,—how often the log line and glass has been examined,—what observations have been made for latitude at night,—how many chronometers on board, how they were rated, and when and how they agreed, and how they eventually made the land:—All these matters, each in itself *materially affecting* the determination of the ship's place, must be looked into before sufficient confidence can be placed in the resulting track, and consequently before that track can be adopted in the series from which the *currents* may be derived. If on this investigation the log proves satisfactory, the track will no doubt be useful and may be inserted in its assigned chart for the period it includes, these charts being on a scale sufficiently large to show the effects of each day's current.

“When a sufficient number of these trustworthy tracks have thus after mature examination been grouped for comparison, according to the region and period of the year, they will no doubt supply the means of commencing a current chart; they will develop certain features which will exhibit the uniformity of some laws and the connection between the phenomena observed in different seasons and in different parts of the ocean, and then it may be determined whether the effects or results, which are what the seaman has to deal with, can be shown when they are reduced into general charts of a smaller scale for practical use, and then again, if they can be made sufficiently apparent, after further generalization, if introduced into the common charts, that is to say, such charts as are already in the hands of seamen.

“These, my dear Sir, are the ideas entertained by me on the subject of track charts and the formation of *current charts* from them. I am very glad indeed to see this important subject so earnestly taken up by your important Society, and cannot doubt that the navigation of your great seas will profit by your efforts, and from which indeed all must ultimately benefit. And wishing you every success with your important undertaking,

I am, &c.,

A. B. BECHER.”

These views let us hope, Mr. Editor, will be carried out by Lieut. Maury. He has begun a good work, provided he has gone on the principle which you have given above to Dr. Buist; otherwise his conclusions will turn out to be an accumulation of work, to which the suspicion of error must always be attached, and a want of confidence in it necessarily ensue.

PHILO NAUTICUS.

[We are obliged to reserve the remainder of our correspondent's remarks for a future number.—Ed.]

LONGITUDE BY ELECTRIC TELEGRAPH.

[The following extract from the last report of the Astronomer Royal to the Visitors of the Royal Observatory gives the first result of the determination of difference of longitude by Electric Telegraph. The only perceptible difference between two methods adopted is 0·02 of a second, amounting in the middle latitude to about eighteen feet.]

I have the satisfaction of stating to the Visitors, that the galvanic communications with Cambridge appear to have been perfectly successful, and the determination of its longitude most accurate. The atmosphere was in a dry state, which is important for insulation. The number of pairs of plates used at each end was 72. The signals were very strong and definite. On both nights, transits were obtained at both stations, both before and after the signals. The transits were reduced by two methods:—In method A, the clock-stars of the Nautical Almanac were used; in Method B, a number of other stars (the same at both stations) were used. The result, as supplied to me this day by Professor Challis, is—

East Longitude of Cambridge.

Method A.

May 17.	By 145 signals	. . . . .	22·953
May 18.	By 134 signals	. . . . .	22·978
			Mean 22·966

Method B.

May 17.	By 145 signals	. . . . .	22·903
May 18.	By 134 signals	. . . . .	22·988
			Mean 22·946

Concluded mean, giving equal weight to the two methods 22s·956

The interchange of signals with Edinburgh also was perfectly successful: 216 pairs of plates were used at Greenwich against 144 at Edinburgh. I am not yet able to give the result for longitude, as there appears to have been an error in a chronometer at Edinburgh which is not yet completely corrected. I am able, however, to state the following result (which is not likely to be altered by correction of the chronometer): that the retardation in the time of observing a signal sent from Greenwich to Edinburgh or from Edinburgh to Greenwich, depending undoubtedly upon the two circumstances of gradual transmission of the galvanic current and more languid movement of the needle at the station furthest from the battery, is one-seventeenth of a second of time.

1853, June 4.

G. B. AIRY.
Astronomer Royal.

NAUTICAL NOTICES.

PORT OF ALLEPEE, CEYLON.

Colombo, 22nd July, 1853.

Sir,—Allepee has lately become a place of considerable importance as a shipping port for pepper, oil, cardamoms, and copperah, as well as for produce from Cochin and other places in the vicinity during the S.W. monsoon; but we find Masters of ships have a great objection to take their vessels there

between the months of April and October, principally because Horsburgh does not advise it. We have sent several vessels there ourselves during the S.W. monsoon, and they have found smooth water and good holding ground throughout the entire monsoon. We annex a couple of extracts from letters of two gentlemen who are well acquainted with the place. Hoping they may be the means of making ship masters better acquainted with the roads at Allepee and less reluctant to take their ships there when a good freight offers during the S.W. monsoon.

We remain, &c.

ARMITAGE BROTHERS.

To the Editor of the Nautical Magazine.

P.S. The Russian brig *Tapio* now in the roads is on the point of sailing for Allepee for pepper, and two vessels, the *Emma* and the *Apollo*, are now loading there.

Extract of a letter from Captain Crawford, formerly in the Country Trade and now Commercial Agent of the Rajah of Travancore at Allepee, 17th April, 1852.

“The weather is beautiful and will be until June, even then Allepee is perfectly safe; the water is quite smooth, so much so that a ship's boat can land on the beach in the very worst weather.

“The anchorage is with the flagstaff bearing between east and E.b.S., in 3½ or 4 fathoms, soft mud. The old anchorage given by Horsburgh is not good. There is not the least danger, and a ship would not be detained beyond the time she would require to take in the pepper. One thing to be kept in mind is that it is a fair wind from this right down the coast to Colombo. The wind is just now, and during the whole of the S.W. monsoon, at from N.W. W.N.W., and the coast trends S.S.E. to Quelon fifty miles, and from thence to Cape Comorin S.E.b.S. and E.S.E. So that the ship can go along with studding sails from this, and on her way up will have light land and sea breezes.”

Extract, Captain Crawford, Allepee, 23rd May, 1852.

“The weather here is beautiful, as far as the roads go. Arab ships of 1000 and 1200 tons load and discharge all the monsoon in smooth water.”

Extract of a letter by Captain Collett, Barque *Trent*, dated Allepee, 7th May, 1852.

“I can only say, it appears to me perfectly safe riding at anchor here; infinitely superior to Colombo Roads. If Captain Dobson comes here, tell him to attend to Captain Crawford's instructions. I think he will have no difficulty in coming here. The weather here is exceedingly fine and the water very smooth.”

[Messrs. Armitage should have sent us a plan of this place.—Ed.]

SAILING DIRECTIONS FOR THE COAST OF THE NORTHERN ISLAND OF
NEW ZEALAND.

(Continued from page 387.)

Kaipara and its Tributaries.

Kaipara entrance may be known by the sand hills at the North Head, being 200 feet higher than along the beach; before reaching the breakers the sand cliffs recede inland, leaving an extensive level of sand and swampy ground.

The land south of Kaipara is higher than that to the northward, and in clear weather the opening shows the dark hills on the eastern shores of the river mouth.

But the breakers will be generally seen from the mast-head long before the distinctions in the land are visible; the S.E. limit of them being 6 miles from the North Head, and $4\frac{1}{2}$ from the South beach at the main channel entrance. The whole extent of the outer limits is 11 miles, in a semi-circular form, convex to seaward.

There are at present four channels:—The Northern is very narrow, and has from $2\frac{1}{2}$ to 3 fathoms, and should never be taken except under difficulties, or when a vessel, standing too far over to it, has been drawn into the channel by the tide; the *Aurora* was lost here.

The Fanny Channel, there is reason to believe, has opened lately; it generally breaks across, but in it there are $2\frac{1}{2}$ fathoms at low water; vessels have lately taken this for the main channel, and been surprised to find such shallow water. Coming along the breakers from the northward, the Fanny Channel will be the first opening seen; but except near high water, or under very favourable circumstances, no large vessel should attempt it. It has this advantage over the main channel; the course through to the North Head is direct.

The main channel is 4 miles from the south beach, the narrowest part is $\frac{3}{4}$ of a mile broad, the extremes of the banks on either side break heavily, and $5\frac{1}{2}$ fathoms will be found at low water mid-channel.

When at the entrance, the present land marks are: the middle green patch on the North Sand Head, N. $2^{\circ} 30'$ W. mag., and the large green triangular tuft, elevated 430 feet on the south sand hills, N. $74^{\circ} 30'$ E. mag.

The course in will be N.b.E. mag. As the outer extreme of the left bank is passed, which breaks heavily, the Troy shoal is seen, and the course will be N.W. pass either side of the Troy; but the north side is preferable.

The courses are so subject to the tides that the eye will always be the best guide. Off the North Head a sand spit extends, making the passage between it and the Tory $1\frac{1}{2}$ mile broad; the water here is very deep, 20 to 25 fathoms. Through the main channel there is (until passing the North Head) water at any time of tide for any ship, and varying from 6 to 20 fathoms, sand.

The south channel is intricate, narrow, and not well known. The *Sophia Pate* was wrecked in it.

Having passed within the breakers the course up the Kaipara is E. $\frac{1}{2}$ N., avoiding the spit which forms a tongue between the Wairoa and Kaipara, the extreme of which is generally breaking, steering for the first head land; (red cliffs;) after passing it keep the south shore on board for $2\frac{1}{2}$ miles, and anchor half a mile off the shore in an open bay before reaching Omokoiti, from which place the mud flats begin to extend, forming the channel between banks (which are steep to), which it is best to navigate at low water, when they are dry on each side.

The general course from the anchorage off Omokoiti to Aotea (a remarkable white cliff on the south bank) is S.E. for 7 miles, with the channel a mile broad. When $2\frac{1}{2}$ miles from the white cliff, the course wends to the southward, and the channel narrows. The anchorage off Aotea is the highest and safest in the Kaipara.

To enter the Wairoa after passing the North Spit, keep the land on board for 5 miles, until a mile from Pouto point, which is about 100 feet high, and its top flat (where a Pa has been). Then edge off, as a spit extends half a mile from the shore under Pouto point, which having passed, keep the shore on board again, and an anchorage off a watering place in from 13 to 6 fathoms will be found. This anchorage is under the second high cliff after passing a small islet joined to the land at low water, and the valley north of the cliff has the stream.

A monotonous range of white cliffs extends 16 miles up the Wairoa. The river runs nearly parallel with the sea coast, at a distance of 5 or 8 miles until reaching Mongawhare, 24 miles above Okaru. Three miles above the watering place is Okaru, from where a native pilot can be obtained, the two at present are Tomati and Manakau, and until the river is buoyed, recourse should be had to their services in proceeding up this branch of the Kaipara. Ships at present take in timber at Mongawhare where there is sufficient depth of water for any vessel in the trade.

From Mongawhare the river runs north-easterly, and becomes narrow and tortuous, but timber can and has been supplied as high as Omano in a vessel of 300 tons. This station with the windings of the river is 21 miles above Mongawhare.

From the heads there are deep channels into the Oruawharu and Otamotea River, which until buoyed should be shown by a pilot. (The chart will best define them at present.) These rivers have undoubted advantage over any other branch of the Kaipara, being near the heads, free from banks and dangers, and their shores comparatively free from mud flats, with fine soil, and plenty of timber, and their sources being within a short distance of Wangari, will, I think, eventually make them the most valuable branches of this great estuary.

The tides in the Kaipara and Wairoa vary in strength according to winds and freshes. They are strongest between the Tory and North Spit and off the north entrance, until reaching the first white cliff in the Wairoa, when the influence of the Otamotea and Orua Wharu may be said to cease.

The ordinary springs run 5 miles an hour, and during strong gales or freshes, 7 miles.

The tides above in the Wairoa run 3 miles an hour, and continue that strength until near the head of the river.

Above Mongawhare, a bore of considerable strength carries up the first of the flood, breaking upon the northern bank; although the tides of the river take the courses of the channels, they do not outside, but set directly over the banks and this must be studied in navigating these channels. The flood outside runs to the south, and the ebb to the north, following the direction of the coast; but on striking the outer banks, they flow and recede over them, and a vessel should not stand far into the great semi-circular bight among the breakers during the ebb tide, or she will be carried on the banks.

Vessels leaving the Kaipara should be within 3 miles of the heads at the first of the ebb, if it is intended to beat through, and it is possible for a smart working ship to do so. If a fair wind is necessary, it must be remembered, the morning land wind will rarely carry a vessel clear of danger, and will probably leave her becalmed among the breakers.

Three Kings.

The Three Kings are a cluster of islands extending E.N.E. and W.S.W., 7 miles; the races and tides, which run 5 miles an hour between them, frequently have the appearance of shoal water; but the *Pandora* has sounded the different channels, and no danger whatever was found but what was above water. The only detached rock is a little above water about three quarters of a mile E. of the largest island, and there is a channel within it. The largest island was inhabited for two or three years by natives from the North Coast, but it is now deserted; the landing is very precarious at all times.

The south extremity of the Three Kings bears N. 64½ W. (mag.) W. 21·9 miles from Cape Maria, Van Diemen.

Variation of compass 14° E.

All bearings given are by compass.

High water at full and change:—Kaipara Heads, 10h. 55m.—Aotea Cliff

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(Kaipara branch) 11h. 2m.—Watering Place (Wairoa branch) 10h. 50m.—Under Tokatoka, 12h. 23m.—Omano (Mr. Walton's), 2h. 29m.—Tangiteroria (Mr. Buller's), 3h. 10m.—Springs rise 11 feet. Neaps 8 feet.

High Water at full and change:—Hokianga Heads (rise and fall 10 feet), 9h. 45m.—Ahipara Bay, 8h. 45m.—Cape Maria Van Diemen, 8h. 0m.—North Cape, 7h. 0m.—Parenga-renga (Coal or Kohau point), 7h. 54m.—Ohara River and Bay, 8h. 48m.—Awanui and Rangaounou Heads, 7h. 44m.—Mr. Southey's 10h. 0m.—Maitai Bay, 8h. 0m.

The rise and fall round the coast is about 7 feet at springs.

Fifteen miles from the land will take a vessel out of the influence of tides, except off Cape Maria Van Diemen. A mile and half from the shore they are generally twice as strong as 3 miles off.

Off Cape Maria Van Diemen the tides run from 3 to 5 knots per hour, and we found them strong on the Pandora bank. Indeed the tidal influence here extends to the Three Kings.

On the East coast the flood tide sets to the Northward; on the North coast to the Westward; and on the West coast to the Southward.

Latitudes and Longitudes Astronomically determined.

Awanui (Tekotiatia point) $34^{\circ} 53' 12''$ S., $173^{\circ} 20' 4''$ E.

Maitai Bay (peninsula dividing the inner bays) $34^{\circ} 50' 5''$ S., $173^{\circ} 26' 30''$ E.

Ohoro River (point Repirepi) $34^{\circ} 49' 45''$ S., $173^{\circ} 11' 20''$ E.

Parengarenga (Kohau or Coal point) $34^{\circ} 30' 40''$ S. $173^{\circ} 2' 50''$ E.

North Cape (islet off) $34^{\circ} 25' 7''$ S., $173^{\circ} 5' 40''$ E.

Cape Maria Van Diemen (Cape islet) $34^{\circ} 27' 43''$ S., $172^{\circ} 43' 57''$ E.

Hokianga Heads (flagstaff) $35^{\circ} 22' 5''$ S., $173^{\circ} 24' 25''$ E.

Kaipara (watering place, Wairoa,) $36^{\circ} 19' 35''$ S., $174^{\circ} 13' 0''$ E.

Kaipara (a whitewashed cliff at extremity of the bay N. of Omokoiti) $36^{\circ} 27' 50''$ S., $174^{\circ} 18' 29''$ E.

(To be continued.)

TRIAL OF THE ST. JEAN D'ACRE, 101, Screw Steam Line of Battle Ship, Captain the Hon. H. Keppel, at Plymouth.

A distinguished party of officers of the Navy proceeded in her, including Commodore Michael Seymour, Superintendent of the Dockyard; Captain William Sandon, Superintendent of the Victualling-yard and Hospital; Captain Quin, of the *Ajar*, 58; Captain Kingcome, of the *St. George*, 120; Mr. Edey, Master Shipwright; Mr. Mills, Master Attendant; Mr. Brown, Assistant Master Attendant; Mr. Biddlecombe, Master of the *St. George*; Captain Mends; Mr. John Dinnen, Government Inspector of Machinery, &c. The *St. Jean D'Acres*, slipped her moorings from off the dockyard at half past twelve o'clock, and proceeded under easy steam out of Hamoaze, under the charge of Mr. Brown, of the Dockyard. The orders to proceed were communicated from the poop by Captain Crispin's telegraph. She steered like a cutter, and was perfectly under command of her helm at a very easy speed. When clear of the Island orders were given for full speed, and the engines were then placed in the hands of the contractors, Messrs. John Penn and Son, the eminent engineers of Greenwich, who were represented on the occasion by William Hartree, Esq., of that firm. From this time until casting anchor in the Sound, about five p.m., the course was variously steered, and her engines for some time reached a velocity of 53 to 55 revolutions, and

without any casualty or hot bearings. The *St. Jean D'Acrc* is the largest line-of-battle ship of two decks in the world, and with, we believe, the heaviest armament, and her efficiency, contrasted with other liners carrying 100 guns, is rendered complete from the superior advantage of being fitted with steam power. The *St. Jean D'Acrc* was designed by Sir Baldwin Walker, K.C.B., Surveyor of the Navy, and Messrs. Eyde and Watts, Assistants.

She left the Sound again on Wednesday on her second trial. At 10h. 5m. she passed the Breakwater Lighthouse at the western end, and was steered the usual course for the Eddystone. This run was occupied with expansion experiments below by the engineers, and was not noted as a trial of speed. The ship's head having been turned towards the Breakwater, the time was noted passing the Eddystone, and the run to the Breakwater light was effected in 53 minutes, which, estimating the difference at $10\frac{1}{2}$ knots, is equal to 11'604 knots per hour; taking the distance as estimated by some at 10'11 nautical miles, the rate would be 11'446 knots. The average revolutions of her engines was 59 per minute, and average pressure of steam on the boilers 18lb per square inch. When the pressure on the boilers was 20lb the revolutions of the engines reached 61 per minute. This run was before the wind with no sea, the force of which was about four. On turning the ship at full speed outside the Eddystone, she came round in eight minutes, which was remarkably quick for so large a vessel. Captain Keppel determined on passing the Breakwater light, to see what his ship was capable of, and she fully satisfied all expectations, passing the eastern channel to resume her work with all the ease of a steamer accustomed to the port. Having taken bearings for a fresh departure, she steamed out again to the Eddystone against a breeze which had freshened to a force of six, presenting a resistance of eight against the ship at her then velocity. The rate by log was nine knots when the revolutions were $54\frac{1}{2}$ and steam 16lb per square inch, and the rate per hour on the whole distance was 8'538 knots. It was slack water on the trial before the wind, but the tide was setting in on the trial against, and was therefore opposed to the presumed rate of the ship. On the whole, therefore, the rates deduced from the observed distances seem to bear out the rates taken by the common log. She was directed to and anchored off the dockyard between four and five p.m., without casualty to either the ship or her engines. The order and arrangements on board reflected great credit upon Commander Cracroft, who had got his hands, only taken a few days from the hulk, into excellent condition. But this is not surprising to us, as we well know the highly efficient state in which H.M. screw corvette *Reynard* was kept under his command. The engines, which are of 600 horse-power, are made on the patent trunk principle; on which principle Messrs. Penn are also making engines for several other steamers. The *St. Jean D'Acrc* will, in a few days, join Commodore Martin's division of the Channel squadron.

REPORT of the Conference held at Brussels, at the Invitation of the Government of the United States of America, for the purpose of concerting a Systematical and Uniform Plan of Meteorological Observation at Sea.

In pursuance of instructions issued by the Governments respectively named in the margin, the officers whose names are hereunto annexed assembled at Brussels, for the purpose of holding a conference on the subject of establishing a uniform system of meteorological observation at sea, and of concurring in a general plan of observation on the winds and currents of the ocean; with

a view to the improvement of navigation and to the acquirement of a more correct knowledge of the laws which govern those elements.

The meeting was convened at the instigation of the American Government, consequent upon a proposition which it had made to the British Government, in reply to a desire which had been conveyed to the United States, that it would join in a uniform system of meteorological observation *on land*, after a plan which had been prepared by Captain James of the Royal Engineers, and submitted to the Government by Sir J. Burgoyne, Inspector General of Fortification.

The papers connected with this correspondence were presented to the House of Lords on 21st February last, and have been further explained in the minutes of the Conference. And it is here merely necessary to observe that, some difficulties having presented themselves to the immediate execution of the plan proposed by the British Government, the United States availed themselves of the opportunity afforded by this correspondence, of bringing under the notice of the British Government a plan which had been submitted by Lieutenant Maury of the United States Navy, for a more widely extended field of research than that which had been proposed; a plan which, while it would forward the object entertained by Great Britain, would at the same time materially contribute to the improvement of navigation and to the benefit of commerce.

An improvement of the ordinary sea-route between distant countries had long engaged the attention of commercial men, and both individuals and nations had profited by the advances which this science had made through a more correct knowledge of the prevailing winds and currents of the ocean. But experience had shown that this science, if it did not now stand fast, was at least greatly impeded by the want of a more extended co-operation in the acquirement of those facts which were necessary to lead to a more correct knowledge of the laws which govern the circulation of the atmosphere, and control the currents of the ocean; and that the subject could not receive ample justice, nor even such a measure of it as was commensurate with the importance of its results, until all nations should concur in one general effort for its perfection. But could that happy event be brought about, could the observations be as extensive as desired, and receive that full discussion to which they were entitled; the navigator would learn with certainty how to count upon the winds and currents in his track, and to turn to the best advantage the experience of his predecessors.

Meteorological observations to a certain extent had long been made at sea, and Lieutenant Maury had turned to useful account such as had from time to time fallen into his hands; but these observations, although many of them good in themselves, were but isolated facts, which were deprived of much of their value from the absence of observations with which they could be compared, and above all from a want of a constant and uniform system of record, and from the rudeness of the instruments with which they had been made.

The moment then appeared to him to have arrived when nations might be induced to co-operate in a general system of meteorological research. To use his own words, he was of opinion that "the navies of all maritime countries should co-operate, and make these observations in such a manner and with such means and implements, that the system might be uniform, and the observations made on board one public ship be readily referred to and compared with the observations made on board all other public ships, in whatever part of the world. And, moreover, as it is desirable to enlist the voluntary co-operation of the commercial marine, as well as that of the military of all nations, in this system of research, it becomes not only proper but politic that the forms of the abstract log to be used, the description of the instruments to be employed, the things to be observed, with the manipulation of the instruments,

and the methods and modes of observation, should be the joint work of the principal parties concerned."

These sentiments being concurred in by the Government of the United States, the correspondence between the Governments was continued, and finally each nation was invited to send an officer to hold a Conference at Brussels on a given day.

And that the system of proposed observation and of combined action might become immediately available, and be extended to its widest possible field of operation, it was determined to adapt the standard of the observations to be made to the capabilities of the instruments now in general use in the respective naval services, but with the precaution of having all these instruments brought under the surveillance of parties duly appointed to examine them and determine their errors; as this alone would render the observations comparable with each other through the medium of their respective standards.

The Conference opened its proceedings at Brussels, on the 23d August 1853, in the residence of M. Picrot, the Minister of the Interior, to whom the thanks of the Conference are especially due.

M. Quetelet was unanimously elected president.

Before entering upon any discussion, it was the desire of all the members of the Conference that it should be clearly understood that, in taking part in the proceedings of the meeting, they did not in any degree consider themselves as committing their respective Governments to any particular course of action, having no authority whatever to pledge their country in any way to these proceedings.

The objects of the meeting having been explained by Lieutenant Maury, of which the substance has been already given, the Conference expressed its thanks to that officer for the enlightened zeal and earnestness he had displayed in the important and useful work which forms the subject of the deliberations of the Conference.

In concerting a plan of uniform observation in which all nations might be engaged, the most obvious difficulty which arose was from the variety of scales in use in different countries. It is much to be desired that this inconvenience should be removed; but it was a subject upon which the Conference, after mature deliberation, determined not to recommend any modification, but to leave to each nation to continue its scales and standards as heretofore, except with regard to the thermometers, which it was agreed should, in addition to the scale in use in any particular service, have that of the centigrade placed upon it, in order to accustom observers in all services to its use, with a view to its final and general adoption.

The advantages of concert of action between the meteorologist on land and the navigator at sea, were so obvious, that, looking forward to the establishment of a universal system of meteorological observation upon both elements, it was thought that the consideration of scales in general would with greater propriety be left for that or some such occasion.

As to the instruments to be recommended, the Conference determined to add as few as possible to such as were in common use in vessels of war; but regarding accuracy of observation as of paramount importance, the Conference felt it to be a matter of duty to recommend the adoption of *accurate* instruments, of barometers and thermometers especially that have been carefully compared with recognised standards, and have had their errors accurately determined; and that such instruments only should be used on board every man-of-war co-operating in this system, as well as on board any merchantman, as far as it may be practicable.

The imperfection of instruments in use at sea is notorious. The barometer having hitherto been used principally as a monitor to the mariner, to warn him by its fluctuations of the changes in prospect, its absolute indication of pressure has been but little regarded; and makers but seldom if ever determine the real

errors of these instruments, or, if known, still more rarely ever furnish the corrections with the instruments themselves.

That an instrument so rude and so abundant in error, as is the marine barometer generally in use, should in this age of invention and improvement be found on board any ship, will doubtless be regarded hereafter with surprise; and it will be wondered how an instrument so important to meteorology and so useful to navigation, should be permitted to remain so defective, that meteorologists, in their investigations concerning the laws of atmospheric pressure, are compelled in great measure to omit all reference to the observations which have been taken with them at sea. The fact will, it is believed, afford a commentary upon the marine barometers now in use which no reasoning or explanation can render more striking.

It was the opinion of the Conference that it would not be impossible, considering the spirit of invention and improvement that is now abroad in the world, to contrive a marine barometer which might be sold at a moderate price, that would fulfil all the conditions necessary to make it a good and reliable instrument; and a resolution was passed to that effect, in order to call the attention of the public to the importance of an invention which would furnish the navigator with a marine barometer that at all times and in all weathers, at sea, would afford the means of absolute and accurate determinations.

The Conference is also of opinion that an anemometer, or an instrument that will enable the navigator to measure the force, velocity, and direction of the wind at sea, is another desideratum.

The Conference was of opinion that the mercurial barometer was the most proper instrument to be used at sea for meteorological purposes, and that the aneroid should not be substituted for it.

With regard to thermometers, the Conference does not hesitate to say that observations made with those instruments the errors of which are not known, are of little value, and it is therefore recommended, as a matter well worth the attention of co-operators in this system of research, whether some plan may not be adopted in different countries for supplying navigators as well in merchantmen as in men-of-war with thermometers the errors of which have been accurately determined.

For the purposes of meteorology, various adaptations of the thermometer have been recommended, such as those which refer to hygrometry and solar radiation: and accordingly a space will be found in the columns for temperature by thermometers with dry, wet, and coloured bulbs. With these exceptions, the only instrument, in addition to those generally used at sea, for which the Conference has thought proper to recommend a column, is that for specific gravity; the cost of this instrument is too insignificant to be mentioned.

The reasons for recommending the use at sea of the wet, the white, and black bulb thermometers, are obvious; but with regard to the thermometer with a bulb the colour of sea-water, and the introduction on board ship of a regular series of observations upon the specific gravity of sea-water, it may be proper to remark that, as the whole system of ocean currents and of the circulation of sea-water depends in some degree upon the relative specific gravities of the water in various parts of the ocean, it was judged desirable to introduce columns for this element, and to recommend that observations should be carefully made with regard to it both at and below the surface.

With respect to the thermometer having a bulb of the colour of sea-water, it is unnecessary to say more in favour of its use on board ship than that the object is to ascertain whether or no such observations will throw any light on the psychrometry of the sea, or upon any of the various interesting phenomena connected with the radiation from the surface of the ocean.

In bringing to a conclusion the remarks upon instruments, the Conference considered it desirable, in order the better to establish uniformity and to secure comparability among the observations, to suggest as a measure conducive

thereto, that a set of the standard instruments used by each of the co-operating Governments, together with the instructions which might be given by such Government for their use should be interchanged.

The object of the Conference being to secure as far as possible uniformity of record and such a disposition of the observations that they would admit of ready comparison, the annexed form of register was concerted and agreed upon. The first columns of this form will receive the data which the Government of the United States requires merchant vessels to supply, in order to entitle them to the privileges of co-operators in this system of research, and may therefore be considered as the *minimum* of what is expected of them. This condition, which it may be as well to state here, requires that at least the position of the vessel and the set of the current, the height of the barometer, the temperature of the air and water, should each be determined once a day, the force and direction of the wind three times a day, and the observed variation of the needle occasionally.

Every abstract log kept by a merchant vessel should contain *at least* what is here recommended. Anything more would enhance its value, and make it more acceptable.

The remaining columns are intended principally for men-of-war to fill up *in addition* to those above-mentioned, but it is believed that there are many officers in the mercantile navy also who are competent to this undertaking, and who will it is hoped be found willing to distinguish themselves in this joint action for the mutual benefit of the services.

In the compilation of this form the Conference has had carefully in view the customs of the service and the additional amount of attention which these duties will require, and it is believed that the labour necessary for the purpose, at least to the extent specified in the instructions for filling up the columns, is only such as can be well performed under ordinary circumstances, and it has considered it a *minimum*, and looks with confidence to occasional enlarged contributions from zealous and intelligent labourers in the great cause of science.

The directions for filling up the columns and for making certain observations, it will be seen by the minutes, were limited to such only as seemed necessary to the Conference to ensure uniformity of observation. This subject received the benefit of much discussion before the meeting, and it was considered most advisable to confine the matter to *hints*; which it is hoped will be found sufficient, when embodied in the instructions which each nation will probably issue with the forms, to ensure that most desirable end, uniformity.

The Conference, having brought to a close its labours with respect to the facts to be collected and the means to be employed for that purpose, has now only to express a hope that whatever observations may be made, will be turned to useful account when received, and not be suffered to lie dormant for the want of a department to discuss them; and that, should any Government, from its limited means, or from the paucity of the observations transmitted, not feel itself justified in providing for their separate discussion, it is hoped that it will transfer the documents or copies of them to some neighbouring power, which may be more abundantly provided, and willing to receive them.

It is with pleasure that the Conference has learned that the Government of Sweden and Norway has notified its intention of co-operating in the work, and that the king has commanded the logs kept by his Swedish subjects to be transmitted to the Royal Academy of Science at Stockholm, and also that in the Netherlands, Belgium, and Portugal, measures have been taken to establish a department for the same purpose, and that the Admiralty of Great Britain has expressed its intention of giving instructions for meteorological observations to be made throughout the Royal Navy.

The Conference has avoided the expression of any opinion as to the places or countries in which it would be desirable to establish offices for the discussion of the logs; but it is confidently hoped that whatever may be done in this

respect, there will always be a full and free interchange of materials, and a frequent and friendly intercourse between the departments: for it is evident that much of the success of the plan proposed will depend upon this interchange, and upon the frankness of the officers who in the several countries may conduct these establishments.

Lastly the Conference feels that it would but inadequately discharge its duties, did it close this report without endeavouring to procure for these observations a consideration which would secure them from damage or loss in time of war, and invites that inviolate protection which science claims at the hands of every enlightened nation; and that, as vessels on discovery or scientific research are by consent suffered to pass unmolested in time of war, we may claim for these documents a like exemption, and hope that observers, amidst the excitement of war, and perhaps enemies in other respects, may in this continue their friendly assistance, and pursue their occupation, until at length every part of the ocean shall be brought within the domain of philosophic research, and a system of investigation shall be spread as a net over its surface, and it become rich in its benefit to commerce, navigation, and science, and productive of good to mankind.

The members of the Conference are unwilling to separate without calling the attention of their respective Governments to the important and valuable assistance which it has received from the Belgian Government. That the Conference has been enabled to draw its labours to so speedy and satisfactory a close, is in a great measure owing to the facilities and conveniences for meeting and deliberating, which have been afforded by His Majesty's Government.

Signed at Brussels, this 8th day of September, 1853.

<i>Belgium,</i>	{ QUETELET, <i>President</i>
	{ LAHURE .
<i>Denmark,</i>	P. ROTHE
<i>France,</i>	DELAMARCHE
<i>Great Britain,</i>	{ F. W. BEECHEY
	{ H. JAMES
<i>Netherlands,</i>	JANSEN
<i>Norway,</i>	IHLEN
<i>Portugal,</i>	DE MATTOS CORREA
<i>Russia,</i>	GORKOVENKO
<i>Sweden,</i>	PETERSSON
<i>United States,</i>	MAURY.

A RACE TO AUSTRALIA.—Great interest is excited in nautical circles by the departure last week from London of a British ship, intended to compete with the celebrated American *Sovereign of the Seas*. This vessel is the *Gauntlet*, owned by James Smith, Esq., Jun., of Tower Chambers. The *Gauntlet* is an iron vessel, modelled by Mr. Rennie and built by Denny and Rankin on the Clyde. She sailed from Gravesend at 2h. p.m. on Monday and passed Deal at 7h. p.m. The distance is rather more than from here to Holyhead, so that she must have gone very fast. On the same principle that is adopted by the yachts of this country, the difference in tonnage between the *Gauntlet* and the *Sovereign of the Seas* should make a difference in the passage to Australia of about four days; the former vessel being 693 tons while the latter is 2,400. The *Gauntlet* will be followed from London by another Liverpool clipper, the *Maria*, built by Messrs. Hall of Aberdeen and owned by Messrs. Shand.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

NOVEMBER, 1853.

NAUTICAL REMARKS ON THE GULF OF SIAM.—*By Mr. Charles
Turner, Master of H.M. Sloop Bittern, 1853.*

Pulo Panjang, placed by Horsburgh in $9^{\circ} 17' N.$ and long. $103^{\circ} 40' E.$, and in the chart with which we are supplied $9^{\circ} 20' N.$, long. $103^{\circ} 15' E.$, is, in both cases, incorrect, as I made the west end of it, by good observations, in $9^{\circ} 16' N.$ and long. $103^{\circ} 30' E.$, by a chronometer rated at Singapore on the 30th April. This Island is, I should say, about seven or eight miles long in an east and west direction, about 300 feet high, and is covered with trees; it is very flat or even, and may be seen about thirty miles. The smaller Island east of it appears, on making, at fifteen miles distance, as a gunner's quoin; this is also covered with trees and is very even topped. On its south side are two islets, the westernmost of which is very remarkable, having the appearance of a mass of ruins (quite white) and without the slightest vegetation. The islet east of this rises to a peak, 200 to 250 feet high, and is covered with trees.

On the S.W. side of the large Island is a sandy bay, apparently about a mile deep, in which there appeared a good anchorage in the N.E. monsoon.

At noon, in lat. $9^{\circ} 14'$, long. $103^{\circ} 30' E.$, with the White Islet bearing east one mile, observed a reef off the S.W. end of the Island, (which is neither mentioned by Horsburgh nor marked on the chart),

bearing N.½W. about two miles. This reef was, apparently, the size of a large ship, and showed about three feet above water, and a mile from the shore. We were at that time in twenty-four fathoms, fine grey sand, which depth we had brought up from ten miles S.S.E.

There are, also, two Islets north of Panjang; the southernmost of which opened of Panjang on an E.½N. bearing, and the north one opened of this on the same.

Pulo Way, described by Horsburgh as being high and encompassed with islets, is composed of two Islands of about equal size, lying east and west of each other; they are of moderate height, covered with trees, rather uneven, and may be seen about twenty-five miles in clear weather. There is a channel between the Islands about two miles wide, which appeared free of danger. A rocky patch is marked on the chart, east of these islands, the position being doubtful; this we saw on passing up. It is about one-third or half a mile in extent, and showed about five or six feet above water, and breaking rather heavily in a moderate breeze. It bore east about three miles from the S.E. end of the eastern island. Horsburgh places this in $9^{\circ} 55' N.$, $9^{\circ} 58' N.$, long. $102^{\circ} 52' E.$, our chart in $9^{\circ} 53' N.$ and long. $102^{\circ} 48' E.$ (its west end). I made by observations $9^{\circ} 54' N.$, long. $102^{\circ} 50' E.$, agreeing fairly with the positions assigned it. The depths between Pulo Panjang and this were twenty-one fathoms, fine sand, to abreast the island, where it increased to twenty-five fathoms, sand. In steering across to Cin, the depths increased gradually to forty fathoms, mud, at fifty miles from the Island, continuing the same depth for fifty miles further, but changing after twenty-five miles from mud to sand and sand and shells; from this it decreased gradually to twenty-one fathoms, about eight miles from the shore.

Pulo Cin, an Islet off the Cape of that name, I make in $12^{\circ} 6' N.$, long. $100^{\circ} 6' E.$; our chart placing it in $12^{\circ} 4' N.$, long. $100^{\circ} 32' E.$ The Cape is very high and remarkable and may be seen in clear weather fifty to sixty miles; the port lies to the S.W. of this. We anchored in four fathoms, with the north point of the bay N. $15^{\circ} E.$, south outer Islet S. $12^{\circ} W.$, Mount in the centre of the bay N. $68^{\circ} W.$ I made our anchorage in lat. $11^{\circ} 43' N.$, long. $99^{\circ} 52' E.$, our chart placing it in $11^{\circ} 43' N.$, long. $100^{\circ} 4' E.$ This is a spacious bay about two miles and a half deep and two miles wide at its entrance, opening about W.b.S. It is formed with high land to the northward, appearing at eight or ten miles distance as an island, and is very remarkable from a peak on its north side. On the south are four islands, two of which have peaks, which are also rather remarkable; the northern one being like a sugar-loaf, the next one running up in a more conical form. In the centre of the bay is a mound having a hole through it; on the north side of which is a river, the water was during our stay there quite unfit for use. In sounding across from the north point to the outer island, had four and four and a quarter fathoms, mud; the depth gradually decreasing all round to the beach. There is, apparently, a rise and fall of about six or seven feet, which our stay did not allow me to determine.

Pulo Sancori, on passing down, I made in $10^{\circ} 5' N.$, long. $99^{\circ} 58' E.$, our chart placing it in $10^{\circ} 17' N.$, and $99^{\circ} 54' E.$ It is of moderate height and may be seen twenty miles in clear weather.

Pulo Carmon I make in $9^{\circ} 48' N.$ and $100^{\circ} 8' E.$, the chart placing its centre in $9^{\circ} 58' N.$, long. $100^{\circ} 12' E.$ It is high and makes as two Islands, having low land between, which can be seen but a short distance.

S.W. of this are the Lardim Islands, which also appear to be out in their position as Sancori and Carmon.

Pulo Cara has its proper position, viz. $8^{\circ} 28' N.$, $100^{\circ} 37' E.$ It may be seen twenty-five miles, and makes as a mound. There are two islets south of this; the larger one may be seen about fifteen miles, the smaller one was not seen, as we passed down in the night. The depths from Sancori to this were from sixteen to eighteen fathoms, on a muddy bottom.

Pulo Lozin, occupying a space of twelve miles on the chart, is a mere rock, about thirty paces over N.W. and S.E., with a flat rocky ledge extending about twenty paces from its N.W. end. It is steep to on all sides, having twenty fathoms within a cable's length, decreasing to three and a half fathoms within a boat's length. It is about eight feet high and formed of sandstone, which makes it very difficult to distinguish. We saw it but four miles on a clear day while keeping a good look out for it. I make this in $7^{\circ} 22' N.$ and $100^{\circ} 56' E.$ This rock should be avoided at night, or with the weather at all thick or hazy.

Calantan River we anchored off in five fathoms, mud, the entrance of the river S.b.E., about three and a half miles, and the south extreme of the land E.½S. The anchorage I made in $6^{\circ} 19' N.$, long. $102^{\circ} 11' E.$, the chart placing it in $6^{\circ} 19' N.$, and $102^{\circ} 00' E.$ The coast line on the chart is here very incorrect, forming a projection which should be a bay at least four miles deep. The entrance of the river is difficult to distinguish, but may be known by a clump of high trees (not unlike poplars) a short distance north of it, and a forest of cocoa-nut trees to the southward. It opens about N.N.W., having a long spit or sand bar running parallel to the coast. The water in the river is very good, but the distance renders it a matter of difficulty to procure. In going in, the water shoaled gradually from the ship to the shore. This is a good place to procure stock, &c.

Tringany River we anchored off in five and a quarter fathoms, mud, the flag-staff bearing W.S.W., one mile off shore, Pulo Capas S.E.½S., and the Redang Islands from N.½W. to N.N.W.½W., which I make in $5^{\circ} 21' N.$, long. $103^{\circ} 8' E.$, agreeing very well with our chart. The entrance to the river may be known by the flag-staff which stands on a mound about fifty feet high, on which several guns are mounted. This is the best place for watering that we visited, it being fresh and very good half a mile in. We found not less than nine feet water on the bar at near low water.

Pahang and Sidilli Rivers we anchored off, and found them correctly laid down. The anchorage off the former in six fathoms, sand and

clay, with Pahang point bearing S.½E., about a mile and a half. The entrance may be known by a ridge of trees north of it (not unlike poplars); it is barred and very shallow and intricate, which would render watering here a matter of difficulty, although it is very good at half or three quarters of a mile inside. The sand spit or bank extends about half a mile north of the point and, with a fresh sea breeze, the sea broke quarter of a mile outside it. In sounding from the ship, one mile west found from six to five fathoms, and north and east six fathoms. The latter may be known by the wend of the coast and rocky islets off the entrance, which is barred with rocks and is very shallow, we having found but three or four feet, increasing inside to four fathoms. The water was quite salt eight or ten miles up the river.

Pulo Timoan. We anchored in Ioara Bay in fourteen fathoms, sand, with the river in the centre of the bay west, and the extremes N.b.W. and S.S.E. The water in the river is good, but very difficult to get with the spring tides; we found no fit place for watering on the west side of this Island.

Pulo Aor. There is a stream of fresh water in the bay on the east side, but boats cannot get sufficiently close to water conveniently.

Pulo Tingy we visited twice but found no watering place on it. The shoal off the north end of the island I found correctly laid down on the chart.

These Islands are correctly placed and are safe to approach, with the exception of Tingy. The tide rises eight or nine feet with the spring; the flood running north and ebb south. The variation of the compass in the Gulf of Siam varies from $0^{\circ} 30'$ to $1^{\circ} 50'$ E.

The currents in the Gulf of Siam are very irregular and require constant attention. In standing across from Pulo Timoan to Pulo Obi, we were set, with an east wind, N. 18° E., nine miles; and on the three following days, with a north wind, S. 22° W. 11', S. 45° E. 24', and S. 37° W. 21'; with the wind from north to east, W. 17'; and with the wind from east to south, N. 14'. From Pulo Obi to Pulo Panjang, with a S.S.W. wind, N. 52° W. 13'. From Pulo Way to Cin, with a S.W. wind, N. 72° E. 16'; and from Cin southward, with the wind at west, N. 68° E. 21' and N. 37° E. 16', with the wind at S.W., S. 71° E. 32' and S. 71° E. 17'; the two latter while looking for Pulo Lozin.

The winds off Pulo Obi we found S.S.E. to S.W., with heavy squalls, rain, thunder and lightning, and a nasty confused sea. We carried the S.W. wind across the Gulf, with an occasional squall; these squalls give plenty of warning, rising in an arch to forty or fifty degrees before breaking, and having scarce any effect on the barometer. On the Malay coast we found regular land and sea breezes, with occasional squalls, but not so heavy as those in the middle of the Gulf. This coast should be avoided during the N.E. monsoon, as, from the shallowness of the water, there must be a heavy sea at some distance from the shore, which would render anchoring unsafe and working off a matter of great difficulty to any but a fast sailing vessel.

ETHERIZED STEAM.—*By M. du Trembley.*

The application of Steam to Transatlantic navigation has done, perhaps, more for civilization than railroads. The sea being the high road of steam, permanently established, independent of wind, and with all but unerring certainty, no longer, as formerly, separates continents, but becomes the means of the most rapid communication between places scarcely yet civilized, of which Australia and New Zealand present a remarkable instance.

But if steam navigation has such great advantages, it also has inherent difficulties. For long voyages it is necessary to embark a great quantity of fuel, even at the expense of occupying the place of merchandize. Hitherto the best marine engines have not consumed less than 4 kil. of coal to the H.P. per hour; so that admitting an engine of four to five hundred H.P. necessary for long voyages, the consumption becomes 2 tons per hour of the voyage, that is, 48 tons of space reserved for every day of the voyage, without including that occupied by the engine and boilers.

Hence it has long been a great desideratum, both in Europe and America, to discover a motive power free from the above great objections. Ericsson's method of heated air lately caused much sensation, but up to the present time his vessel has not crossed the Atlantic, and we have nothing to judge by but report.

In such a strife of intellect with reality France, the country of adventurous and inventive genius, could not remain inactive, and offers the solution to the world. Happily the solution is found, and well found too. Marseilles, Toulon, and Algiers can tell the fact. At the present moment there is a vessel which has made twice each month the voyage between Marseilles and Algiers, with the highest rate of speed, consuming little more than one kilogramme of fuel the hour per H.P., or, in other words, effecting a saving of 75 per cent. in the consumption of fuel. This vessel, worked by the combined steam of water and ether, is named *Du Trembley*, after the inventor, who after ten long years of perseverance, sees his labours crowned with success. We read as follows in the Report of the Commission of the Engineers who were charged by M. le Prefet des Bouches de Rhone to sign a notice on this new application to navigation, after having made a voyage in the *Du Trembley* :—

“The steamer *Du Trembley* is an iron vessel, adapted to carrying passengers as well as merchandize, and to navigate by sail or steam. She can carry 100 passengers and 250 tons of merchandize, is fore and aft rigged, and has a screw with engines amounting to 70 H.P., which engines are adapted to the application of steam of water and ether.

“The employment of the combined steam of water and ether in the same machine is due to M. du Trembley, and the vessel, which belongs to Messrs. Arnaud and Touache, is the first to which it has been applied, and has received that name.

“Sulphuric ether, which to become volatilized requires but a low

temperature, appeared to M. du Trembley likely to realize his object, and the result has fully answered his expectation. As soon as the steam from water comes in contact with ether, it becomes condensed, and the ether becomes volatilized. On the one hand a new expansive force was at once created, on the other a vacuum was found. The problem of M. du Trembley being thus happily solved, it remained for him, in order to achieve his object, to invent the necessary mechanical appliances by which to secure his result, and M. du Trembley has been no less happy in this second part of his invention than he was in the first.

"He receives the steam of water, that is to say having expended its force at its departure from the cylinder, in a closed apparatus which traverses the whole length of it, being a number of small cylinders close to each other but separated. The ends of these small cylinders are immersed in the ether under the apparatus into which the steam passes; the ether rises in the tubes and partly occupies them. As soon as the steam of the water penetrates the apparatus which traverses the tubes, and has surrounded it, the phenomenon above-mentioned takes place, the steam is condensed, and the ether volatilizes. The steam in condensing produces a vacuum, which assists the expansive power of the ether in overcoming the resistance which it met, and the vapour of the ether, which is collected in a separate compartment in which the tubes are immersed above the evaporator, possesses a new power which assists that of the steam.

"The condensed steam is returned to the boiler from whence it came, to be reconverted, taking with it all the caloric of which the ether has not deprived it in evaporating.

"The vapour of ether which is collected above the evaporator and the tubes in which it is formed, is collected in a cylinder prepared for it, and which in no way differs from the steam cylinder in which its power is exerted.

"The piston of this second cylinder may act independently, or perhaps attached to the same as that of the steam cylinder. In this last case the two, that is, the ether vapour and the steam, act together, as in the engines of the *Du Trembley*, as should be the case always in this new system of steam navigation.

"The vapour of the ether, which on many accounts it is important not to lose, and should not be allowed to escape, is treated in the same manner as the steam. An apparatus is introduced into the tubes similar to the evaporator, and it is condensed by a constant jet of cold water, supplied by the apparatus in the same way as the steam in the evaporator. The ether, regained to its liquid state, is collected in the evaporator in the same manner as the water from the steam, to be worked over again as before."

Such is the system of M. du Trembley. Brief as the description is, it is sufficient to convey the principle of the system, and to show that its application will produce a considerable diminution of fuel compared with that which employs steam of water alone. From which there results:—

1. The return of the condensed water into the boiler with a

considerable amount of caloric which it possessed in a condition of steam.

2. The re-employment by the vapour of ether of a part of the caloric which it has received from the steam in condensing it, which only does not return to the boiler.

3. The return to the boiler of the distilled water.*

One of the great difficulties which the inventor had to overcome was the closeness of the joints, for the subtlety of the ether is well known, as well as its inflammability. M. du Trembley has attained a precision in effecting this, which the commission says is so complete, that if a slight odour indicates the presence of ether when the machines already heated are stopped, this odour is imperceptible when the vessel is under way.

The application of the system of the combined vapours of ether and water to fixed engines, may be considered to be already established by experience. We have seen at Lyons an engine of fifty horse power worked by them, and which has continued so for six years without accident.

But we have hastened to arrive at the positive statement of the great economy of a combustible which the etherized vapour gives, as a fact of so great importance which is destined to react so powerfully in the numerous applications of steam.

We quote here from the Report of the Commissioners:—

“In the course of our voyages we have had four opportunities of proving the quantity of coal expended. They were of 36h. 50m. duration, and were made under all circumstances of wind and weather. Again, whatever was the state of the wind and weather, the engines working the vessel by themselves, or aided by the sails, the power they worked at was always about 70 horse, as indicated by the vacuum shown.

The quantity of fuel expended during the 36h. 50m. of our experiments, has been 2,860 kil. 90, carefully and regularly measured, being 77 k. 67 per hour and per H.P., admitting the engines to have worked at 70 being 1 k. 11, and 1 k. 16 in considering them only 67.

“Previous to being worked by the combined vapours of ether and water, the machines of the *Du Trembley* have worked under the same pressure, giving consequently the same force with steam only acting in the two cylinders. According to the log and the books of the providers, they have consumed for 2,818h. 851,950 k. of fuel, or 302 k. per hour, and per H.P. 4 k. 31 to 4 k. 51.

“According to the calculation, by the introduction of ether an economy is gained in the expenditure of fuel, when the two cylinders are worked by steam alone, of 3 k. 20 to 3 k. 35 per hour per H.P., or of 74 k. 26; a result so extraordinary that we can scarcely venture to believe it, in spite of the correct data on which our calculations are founded, and which differs little from the result of our experience.

“We have found that the expenditure of fuel per H.P. for the hour

* Which may also be applied to the purposes of the ship.

is 1 k. 11 or 1 k. 16. The best constructors do not stipulate beyond 4 k. as the least expenditure of fuel for marine engines, producing an economy of 2 k. 89 to 2 k. 84 per hour per H.P., or 71 to 72 k. 25., a result little inferior to the foregoing, which leaves an important success to the inventor.

“Again, whatever may be the correctness, more or less, of our calculations and the results deduced, and which experience will certify, it is incontestably clear and certain that in point of expenditure of fuel M. du Trembley’s system shows a great economy, and that the expenditure of ether, far from counterbalancing the advantages of this economy, can scarcely affect the result.

“With respect to the danger of using ether, it is neither greater nor less than that of carbonated hydrogen gas. The same objection may be urged against the employment of ether as against the gas. The objection will not prevail more now than it did against that to secure the advantage of a real and considerable economy.

“Here, then, is an invention which is but yet in its infancy, but which for fixed engines has a long experience, and which for maritime purposes is fraught with great hopes; the grand principle on which it is founded being the combination of two liquids of unequal evaporation, and also susceptible of being extended to other liquids besides ether, provided such liquids are capable of being vaporized at the temperature of condensation of the present machines.

“M. du Trembley mentions in his work descriptive of his method, many other liquids with which he has obtained the same result as with ether, such as chloroform, the chloride of carbonated sulphur, the two last not having the inconvenience of being inflammable like ether.

“The time in fact has arrived when practical industry will go forward in the path found by M. du Trembley. We who have watched the invention through six years of his experiments, can tell of all the difficulties he has overcome, and the obstacles he has had to surmount. But he has succeeded, and we firmly believe that his recompense is secure in spite of the attacks of envy. Even now M. du Trembley is before Mr. Ericsson, and France will have to envy America nothing.
“A. DUMONT.”

La Presse, Monday, 1st August, 1853.

LOSS OF THE BRIG MARY AT NATAL, WITH EARLY RECOLLECTIONS OF THAT SETTLEMENT.

(Continued from page 434.)

A messenger and escort now arrived from the King, commanding the attendance of the rest of our party for his Majesty’s inspection. A present having been hastily made up, consisting of various coloured beads, and medicines, which Shaka had earnestly solicited from Capt. King, and which the latter had promised should be sent on his return to Natal, we departed with the guides on our journey, but without the

accompaniments of horses and pack oxen, with which our shipmates had been favoured. I had looked forward to this journey both with curiosity and pleasure. It had been long known that the King must needs have a look at all of us, but now that the time had actually arrived, it was with some degree of anxiety and a heavy heart that I took leave of my shipmates at Natal, and placed myself under the guidance of the Chief of our native escort.

We travelled over the same ground as our predecessors had done; on the first day along the sandy beach, which completely knocked me up. The scorching sand soon blistered my feet, and before we got half over this stage I had to be shouldered by one of the natives. But I was no great burden to my sable friend. His shield and assagois, with the never failing bundle of bludgeons carried by the Zoolas, of which he divested himself, were nearly equal to my weight, and for which I was now the substitute. Although it was not the most easy or comfortable mode of conveyance to be thus hoisted on the shoulders of a raw-boned fellow, it was a great relief to my feet, and but for his services I should have been left by the way. We forded the Umganie river, then scarcely more than knee deep, and started two or three huge alligators basking in the sun. During the rainy season, when the river is swollen with heavy rains, these reptiles make the fording very dangerous. Men and cattle are frequently carried off by them, in crossing this and other streams in the Zoola country. We now halted under the shade of a tree, and after an hour's rest and refreshment I was taken up by another carrier, and we pursued our journey eastward until nightfall. We then halted at the first crawl, or native village, where our party were most hospitably entertained by the head man, who was one of Shaka's captains. We were regaled with milk to our heart's content, and were supplied also with excellent veal, which had been killed expressly for us; and badly as it had been cooked, was very delicious. We were much entertained at their operations of cooking and dispatching their meals. Our guides having squatted round a large fire in the open air, in front of their sleeping apartment, commenced cutting up their beef into lengths of a fathom or more, and coiling it on the fire. When several coils had been thus disposed of, and the first had got fairly warmed through, a party got hold of each end, and commenced eating towards each other until in close proximity, when the bight was cut by one or the other, and the two would thus separate and begin afresh. Having in this manner disposed of their allowance, a few would crawl into the hut, while others slept around the festive fire. Here we resolved on remaining for another day, to recruit our strength. Sailors, as is pretty well known, are no great pedestrians, even travelling on the best roads, but this hot, soft, sandy beach had literally knocked us all up.

After having enjoyed the good things and hospitality of our kind host the Umdoona, we again resumed our journey, which now led us towards the interior, and our travelling became more cool and agreeable, for in traversing the sea coast the heat and glare of the sand, with the spray of the sea, combined with the powerful rays of the sun,

had scorched the skin so much that my face was shedding its coat, the skin peeling off like the coat of an onion. Now the grateful shade of trees, and the carpet of green spread before and around us, was a great relief, and though my feet were still very sore and tender, I refused the aid of my good friends to carry me along, and struggled manfully to keep pace with my more robust shipmates; in fact, I must do them the justice to say, they had great consideration for my youth and weakness. I observed as we passed along that I was an object of great curiosity to the travellers that we met, and in the villages as we passed along, and I seemed to occupy their undivided attention. A full grown white man had in a measure become familiar to them, but such a little fellow as I was at that time was a new sight for them; hence I became the lion of the party. The women and girls were particularly curious about me, and caused me often to blush from the way in which they handled and inspected me. At first I did not fancy this much, but when I became convinced of the harmlessness of their intentions, I submitted to all their curiosity with as much grace and good humour as I could command.

We pursued our journey on that and the following day without anything of interest occurring. Our track lay through a fine country, rich in wood and pasture, and well watered by numerous never failing streams, although we were now in the height of the dry season. Here and there, the nearer we approached the mountains of Umbalallo, beyond which was the site of Shaka's residence, we met with large etangers (cattle folds) containing many hundred head of cattle, and where we were invariably regaled with a plentiful supply of rich and excellent milk. These etangers are but temporarily constructed, for the convenience of removal, when the pasture fails, to a more favourable district. They are under the management of a number of juvenile warriors, who are enjoined by stringent regulations to a life of celibacy, no females being admitted within the precincts of these establishments, and any breach of these regulations are visited by death to the offender. The government and direction of these again are confided to a chief, who, however, seldom resides on the spot, but delegates his authority to resident officers under him, who may be considered as captains of these bands of warriors. Each of these establishments constitute a regiment. They live principally upon the milk from the cows, with occasional contributions of Indian and Guinea corn, levied on the inhabitants of the krolls in their vicinity. Those we saw were certainly a fine specimen of savage warriors, all young, active, cheerful fellows, apparently from eighteen to twenty years of age. They appeared to consider themselves much above the common herd, and a somewhat privileged class. Being, moreover, trained to arms, they seemed to despise their more humble brethren, whose pursuits were those of peace and utility; a very foolish notion, indeed, that I have marked also in many juvenile sons of Mars of a more civilized description, and in countries boasting the highest state of civilization, in whose favour the same amount of ignorance could hardly be brought forward in extenuation.

On the fourth day of our journey we crossed the large river Umtoogalgie, which I take to be that called St. Lucie on Capt. King's chart of the coast of Natal, but as we were a long way from the embouchure this was uncertain. It was very low where we forded it, only having about three feet water; but from the steepness of its banks there is ample evidence that it is a formidable stream during the rainy season. Here in a deep basin some distance below the fording place we saw several hippopotami, their heads appearing like rocks dotted over the surface; and we should assuredly have taken them for such, had the natives not convinced us to the contrary by throwing some missiles at them, when they immediately disappeared under water. At night these huge animals (between an ox and a hog) leave their river haunts to graze on the rich pasturage along the banks of the river, and as regularly again, at dawn of day, they retreat to their oozy beds in the deepest pools. There is a class of natives called Mapeese, who make it their special business to hunt these animals, as well as the elephant, for the means of subsistence; and as these people, I observed, differed in their habits from the Zoolas, I concluded them to be a conquered race. Indeed the whole of the country we had traversed from Natal I subsequently found had been inhabited by separate independent tribes, that had been conquered by Shaka, a few of which had escaped the general destruction of their race. There was, in fact, no evidence wanting in our travels by the way side to show what the fate of the many had been. The heaps of human skulls and bones blanching the plains, were sad monuments of the fearful conflicts that had annihilated whole tribes, while these Mapeeses were but the wretched remnants. Their mode of attack, and the manner of capture of these huge animals, require great agility, with considerable strength and adroitness in the use of the spear, which is their only weapon. They lay wait for the animal on his midnight excursions to the savannahs for food, and watch him until he is sufficiently advanced from his retreat in the river to cut him off from it. The attack is then made simultaneously on him on all sides. Some of them, as they told me, often leapt on the animal's back, and plunging the spear into the back and neck, would cause the beast to throw himself down, when he would become a more easy prey to the huntsman.

I had occasion on one of my journeys in the interior to witness a moonlight attack on the sea-cow by a dozen huntsmen. The animal's legs are so short that his movements on land are slow and awkward, and he fell an easy prey to his pursuers. It nevertheless requires a good deal of activity and courage to effect the conquest. The expansion of his enormous jaws, opening two feet wide at least, armed with four formidable tusks, some two feet long, has a somewhat unpleasant appearance, and requires a firm nerve to approach and attack in a hand to hand or, rather, a hand to tusk, combat. The hide is exceedingly thick and tough, and requires great force to penetrate it; but the Mapeese have their spears very sharp for the work and have a quick and unerring eye. There is another mode of killing these amphibious animals practised by some of the natives, but not by the

Mapeesee or professional huntsmen. It consists in digging deep pits with pointed stakes set perpendicularly at the bottom, the points uppermost; the pit is then carefully covered, and, as the animal invariably pursues the same path to and from his haunts in the river, he falls into the pit and is impaled.* The food of this singular animal is entirely grass and herbage, and, though so large and unsightly, the flesh is excellent food, both good and wholesome. I have, at various times, eaten a good deal of it, and often preferred it to ox beef, as an agreeable change; I never detected anything strong or unpleasant in the taste, but when the animal was old the meat was exceedingly tough with a very coarse fibre, in which case it was hardly eatable.

We halted at a village inhabited by a number of these huntsmen, and they had a few of the sea-cow tusks which they offered to exchange for beads and brass ornaments. When the beads were strung they were generally contented with the length and circumference of the tusk in beads, as its value. Although not exorbitant in their demands when trading, they are great beggars. Our Zoola guides treated these poor people very unceremoniously, and we had to interpose our authority to restrain them from committing acts of cruelty on these unoffending people. However, we found that they were used to it, and did not expect anything better from Shaka's soldiers. They seemed to have nothing of what is considered wealth by the Zoolas, (i.e., cattle,) and, apparently, no possessions in the world but the bare walls of their miserable huts, a mat to sleep on, and a few clubs and assagois, completed the whole of their stock. Perhaps it would be impossible for these people, under such a military despotism, to retain anything from the greedy and rapacious warriors who occasionally honoured them with a visit, and no doubt the property of which they may be possessed is secreted.

There was no difficulty at once in seeing that they were but the remnant of a race that had been spared from the desolating wars of the great chief before whom we had soon to appear, and that the life of one of these relicts of a conquered race was no more, in the estimation of a Zoola warrior, than the grass which he trod under foot.

Here, too, we observed the first process in the manufacture of native cloth from the ox hide, and its preparation for conversion into blankets. A hide was stretched out on the ground and pinned down with wooden pegs, around which were three or four operatives, male and female, the former with their assagais scraping off the fleshy and mucilaginous matter, and the latter following the men with a serrated piece of iron scraping the skin and raising on it a sort of nap; after which operation it had to be well rubbed with grease to make it soft and ductile. Some skins prepared in this manner, which serve the natives in the double capacity of mantle and blanket, are exceedingly soft and pliable, having, when well prepared, a velvet-like softness, and affording a degree of

* Another is that of suspending one of the stakes in a narrow part of his usual path, so that it falls and pierces the animal as he is immediately beneath it.—Ed.

warmth equal to the best blanket. But it has always an offensive smell from the quantity of grease employed in the preparation ; in fact, it is always getting a fresh supply of this from the hide of the wearer, for the native who pays attention to his toilet freshens himself up every morning with a fresh coat of grease. This is, generally, rancid butter, which is churned in a calabash for the purpose ; and it is a very disagreeable affair for a stranger unaccustomed to such perfumes to be in a crowded hut with a party of natives thus lubricated and polished up.

On the evening of the fourth day's travel we encamped at the foot of the mountain range of Umbalilos, on attaining the summit of which we could view the termination of our weary journey. It is needless to say that, notwithstanding the many interesting objects and the beauty and grandeur of the scenery which nature spread before us in this vast and unexplored region, we were getting tired and weary. That our journey was nearly over was evident by numerous pedestrian warriors, decked in their full war costume, wending their way to head quarters ; hitherto, we had passed through comparatively depopulated country, where nought was left us to contemplate but the perishing remnants of humanity that were, indeed, thickly strewn in the way. It now became more cheering to hold communion with, and carry out our speculations on these living specimens of inhabitants.

This mountain range which, at the time of our visit, was the boundary of the Zoola territory proper, was celebrated for abounding with elephants, the roebuck, and various kinds of game, which the Zoola monarch occasionally engaged in hunting. The elephant hunt, in particular, was a most exciting and interesting spectacle. The extraordinary sagacity of this powerful yet harmless animal (when unmolested) to evade his enemies, his pitiful cries and supplications for mercy when he sees every door for escape shut against him, would subdue the most cruel and hardened heart.

A little before reaching our halting place one of the native guides had procured some wild honey, which, to me, was a great treat, and we were not a little astonished to find that for this little luxury we were, in a great measure, indebted to a little bird. These singular little creatures are numerous and common in this part of the country, and, I believe, are pretty well known through all Southern Africa. In its plumage, this bird has no recommendation to notice, being of a darkish colour, and it is about the size of the common sparrow ; but it has secured for itself protection from harm by man and his respect for its peculiar faculty of discovering the hives of the wild bee, and the instinct it possesses for calling in his aid and piloting him to the spot where the treasure of the industrious bee is concealed, that he may get a share of the spoil. The nest of the bee being generally in a hollow tree or the cleft of rocks, is out of his reach, unaided by man. The natives, who are accustomed to follow these little guides, can, by their actions and chirping pretty nearly calculate the distance they are likely to have to follow ; the nearer the nest the shorter are the stages in his flight and the more earnest are his calls, until he flutters awhile over the spot which he wishes to show, and he then perches himself

in a neighbouring tree or bush and patiently awaits his share of the plunder, which the natives never fail to reward him with. I have been told by some of the natives that it was not always safe to follow these little guides, as they were sometimes incautious; instances having occurred of their conducting them into the lair of the lion and tiger. But the little honey bird must not be blamed for this; in a country infested with these dangerous animals, it could hardly be considered safe to traverse the jungle when instances are of common occurrence of persons being snatched away, beyond rescue, from their very huts.

Sunrise the following morning found us scrambling up the western verge of this mountain range. Our party was here joined by a large concourse of warriors, bound to the same point, that by noon amounted to several hundred, and by which hour we had attained the summit. Though the ascent was fatiguing, from the steepness of the way, we were agreeably shaded from the heat by the canopy of foliage ever stretched over head; magnificent forest trees, of immense size and value, growing in great luxuriance to the very top of these fertile mountains. At this hour we halted for a little rest and refreshment. We found the air cool and agreeable at this elevation, which might be two thousand feet above the sea level. While thus occupied we were entertained by our new friends with a war song, which our guides informed us was executed in the first style; and, though we could not appreciate or understand the perfection of the performance, seeing very little grace or beauty in the movements of the dancers, it certainly was not wanting in novelty to attract and secure our attention, and it possessed a degree of romantic wildness in perfect harmony with every thing around. Here, also, I was the great object of attraction and curiosity to the natives, and many of them determined on presenting me with something as a mark of friendship and peace. These presents consisted of sticks neatly trimmed, with a knob at one end, and averaging from the size of the little finger upwards, until my stock of canes of this description almost became a load. These tokens of peace afforded me ample means (in the native fashion) of carrying on a desperate war!

One individual in this company of warriors, in particular, paid us marked attention and respect, though all of them were exceedingly civil and even respectful in their deportment to us. But this man seemed particularly anxious even to anticipate our wishes and to seek out and do little things that he thought might be pleasing to us; evidently he endeavoured to show us how much pleasure it afforded him to be of the smallest service to us. We soon, however, discovered that this poor fellow's anxiety to show us kindness proceeded from a grateful remembrance of an obligation he was under to the white man. It appeared that he had been indebted to the humane attentions and skill of Lieutenant Farwell some time previous, if not for his life, at least for the use of his limbs. Being out on a hunting expedition, it appears the unfortunate fellow had fallen over a fearful precipice and sustained a compound fracture of the leg and thigh; and here would have ended his mortal career so far as his own countrymen were

concerned, the injuries he had sustained being far beyond the skill of the native doctors to remedy; and, being thus injured beyond remedy, there was nothing to be done but to leave him to be food for the beast of prey, if, happily, one should speedily come to end the remnant of his miserable life. Fortunately for the poor fellow, Mr. Farwell happened to be near the scene of the accident, and, at great personal risk, on hearing of it humanely repaired to the spot, had him removed on a litter, set and splintered the fractured limbs, and, by his further attentions in bleeding and administering remedial measures, brought him, by divine aid, out of a dangerous fever that subsequently set in, consequent on the serious accident. This incident, as a matter of course, tended to raise Mr. Farwell high in the estimation of the Zoolas as a great "Ingangen" doctor, as, also, respect for his care and humanity; and the poor fellow himself was bent on doing all in his power to evince his own sense of gratitude to Mr. Farwell for his humanity, and showing, through him, he felt bound to extend it to the white race.

I have had occasion before, in the course of these recollections, to note the uncharitable comments of Mr. Kay, in his "Caffrarian Researches," on the white men at Natal, and particularly the unfortunate Lieutenant Farwell and his party; and from the bitterness of his invectives against the traders with the natives on the frontiers of the Cape Colony, with whom he came immediately in contact, one would infer that some desperate rivalry must have existed between these traders and the missionary crew. Whether it was for the loaves and fishes or for the precedence with the natives, I had no opportunity or means of personally observing; but were I to judge from report and indulge in speculation from hearsay, I should put it down to the latter cause. Like Mr. Kay, I too have travelled a good deal, in Africa, America, and elsewhere, and, though I may not possess his descriptive powers, I have not been an idle observer of what was passing around me. I have met many good and truly pious men of the class to which the Author belongs, and to which description I have no doubt he would be found to hold a prominent place, and it is because his history and remarks have been carried to Natal, where, it is evident, at the time he wrote "Caffrarian Researches" he had never been, that I am constrained, in justice to parties on whom the grave has now long been closed, to correct one or two grievous errors into which Mr. Kay has fallen. It is not my intention to enter into controversy with the pious and talented author on the subject of his favourite theory of civilization. I shall only remark, if the question is satisfactorily settled that missionary stations are the approved and most efficient means for reclaiming the savage from his state of barbarism and for uniting him to the family of civilized and Christian men; it is certainly much to be regretted that this respectable and pious author had not, instead of myself and my unfortunate shipmates, been the pioneer into the darkness of the Zoola kingdom. But as Mr. Kay has cited Lieutenant Farwell and his party as an instance, in refuting Mr. Stout, (an American writer,) on the subject; and because there were no missionary preachers at Natal with the first settlers and the shipwrecked

seamen, he necessarily and very charitably concludes they soon became savages also. This is evident from the following paragraph from Mr. Kay's book, in chapter 16, pages 398 to 400, where he says, in speaking of Lieutenant Farwell and party at Natal,—“Here, then, we have a party of settlers; such, we may suppose, as Captain Stout of the *Hercules* and others of his way of thinking would, in all probability, recommend as the civiliziers of Africa. Men of science, men of enterprise, men of general information, accompanied by labouring men, men who professedly went to trade and to cultivate, to introduce the plough and European manufactures, &c., and amongst whom there was no order of missionaries or clergy, &c., &c. Before such a force, bare morality, upright intentions, and the gentleman's high toned principles of honour, rank, and what not, are borne down like so many straws in the stream, and, instead of civilizing others, he gradually slides from one degree of corruption to another, until he at length becomes himself a savage, a perfect sensualist, a polygamist, and that of the most depraved description!”

Thus, then, it appears that a naval officer, with gentlemanly qualifications, science, and general information, admitted on his side, retrogrades and becomes a savage because forsooth there is no priest to remind him of his being a Christian. But what is most amusing in the argument is that the force before which the gentleman and man of science must bend can have no influence on the infallible and invulnerable missionary. This is really too heavy a weight of absurdity to hoist in at the present day, and it may be as well to mention, *en passant*, for the information of the well intentioned and philanthropic individuals who support these missions for the propagation of Christianity. This argument of Mr. Kay's might be applied with a little more degree of probability to some ignorant men, who, in a fit of enthusiasm for the conversion of the savage, leave their homes for the jungles of Africa, and, having nothing to sustain them but this religious fanaticism, forget the precepts and example of the “great teacher,” “that he that humbleth himself shall be exalted,” and like the impostors of old, both Christian and pagan, arrogate a superiority over their fellow men to which they are neither entitled by birth, education, or talent, consequently, make themselves objects of contempt to men who have no greater claim to respect than themselves, that, by a different course of conduct, would silently have secured that deference and respect, which their ignorance induces them to expect or aspire to as a right.

(To be continued.)

THE NORTH-WEST PASSAGE.

At length the great geographical question of the North-West Passage is solved. At length the oft repeated attempt of above three centuries is crowned with success. Thanks to the daring of her intrepid seamen, England has achieved her favourite project, and that a passage by sea, north of America, between Davis and Behring Straits, is actually to be made, no longer admits of doubt. It has been performed by Captain M'Clure in command of the *Investigator*, one of whose officers, Lieutenant Cresswell, is now in England. How many of England's brave and hardy seamen have been successively repulsed in this attempt; how many have yet penetrated beyond their predecessors and wrested from the barriers of eternal frost another, and yet another, small portion of geographic lore,—have braved the perils of a snow-clad ocean and this in spite of all the terrors of the Arctic winter

“That holds with icy grasp the Polar world”

in bonds of perpetual frost? Let the long list of names in history's page, from the times of Willoughby and Frobisher down to those of Parry and Franklin, bear faithful yet painful record. At length, we repeat, the feat is accomplished, and though all have returned and might have justly said with Baffin “I have seen what mine eyes fain would not have seen,” when he reported the continuity of land at the head of Baffin Bay, yet it has been left for M'Clure to profit by the energy of Parry, and to give the final answer to the long agitated question, “There is a north-west passage.”

Such is the general view of the subject at the present moment. While it is placed vividly before us in the despatches which follow, let us glance over a few of its most remarkable points, both past and present.

The theory of a communication by the Arctic Sea between the Atlantic and Pacific Oceans was a favourite one of old. By England's earliest navigators it was adopted with a degree of zeal and restless determination purely their own. Baffled repeatedly and foiled in their attempts to achieve by it a passage to Cathay, from the days of Elizabeth during each successive reign down to the present, they still returned to the work. But, perhaps, at no period since its commencement has it been so determinedly followed up as it has been in the course of the present peace. No sooner had war ceased in Europe and the fleets of England were left to pursue the vocations of peace than the spirit of enterprize was awakened once more in the field of Arctic Maritime Discovery. Who is he that cannot associate with this subject the respected name of the late Sir John Barrow. Having himself, in his youth, been as high as the 80th parallel his attention was naturally turned to the subject of the N.W. passage and probability of a polar basin, theories which, at the time they were promulgated, were much ridiculed.

It is now thirty-five years since Sir John Barrow first recorded his

opinions on this subject in the *Quarterly Review*. We find him there arguing against Captain Burney (who had sailed with Cook) that Behring Strait was a navigable Strait and not a Gulf, as Captain Burney and many others maintained;—that there would be found a set of the current to the eastward, the waters of the Pacific would be found to flow through the head of Baffin Bay, and down through Davis Strait into the Atlantic, “which bay is no bay at all,” said Sir John, “but a cluster of islands, and should be expunged from the chart;”—that a large polar basin was to be found to the northward, in fact, that the very coast line of America formed a part of it, is there laid down by him. When we reflect that all was a blank on the chart of those days, and, as the *Edinburgh Review* remarks, might have been occupied like the charts of the olden times with hideous griffins and ill shaped fishes, we think the reader will agree that the prophetic foresight of Sir John Barrow was not a little remarkable. His energy in following it up is well known. The failure of the first expedition and the opinion that no opening was to be found out of Baffin Bay did not deter him from his purpose. The ridicule, indeed, which he incurred produced no effect on his firm mind; neither was his conviction, founded on a solid basis of reasoning, to be shaken by the failure. No opening might have caught the eye of the voyager, no more than it did that of Baffin, nevertheless, said Sir John, there *must* be one, and Lord Melville, relying on his judgment, dispatched Sir Edward Parry the following year to find it.

How Sir Edward sailed through Lancaster Sound, and took his ships into Winter Harbour of Melville Island, all the world knows; and this was half way to the Pacific Ocean. It has fallen to M'Clure to accomplish the other half; after numerous struggles in the wrong road he has hit the right one, and claims the honour for the British Navy of having discovered the North-West Passage.

Although Mercy Bay, on the northern shore of Banks Island, (called Banks Land originally by Parry,) is yet some seventy miles from the nearest part of Melville Island, the North-West Passage may virtually be said to be completed, as Banks Strait, which separates them, is navigable, but for ice. And it is remarkable that Parry was about a fortnight in reaching Melville Island from Baffin Bay, while M'Clure was about three weeks reaching Banks Island from the west.

The correct view which was taken of the subject by those who framed the instructions to Sir John Franklin, is also remarkable. He was advised to take the first favourable opening after passing Cape Walker to the south-west. Had he been able to do so, (for all is uncertain in ice navigation,) the strait found by M'Clure would have led him on to Behring Strait. Failing to get to the south-west, which must have been the case, it was left to him to take the Wellington Channel. Opinions appear to preponderate in favour of Sir John Franklin having taken his course to the west from the head of this channel; a course which if he has adopted must be fatal to him, in spite of the advocates of a Polynia. Were it not that he left no account of such intention on Beechey Island, and, above all, for certain reports about

the vestiges of gardens being found there, we might subscribe to that opinion. But wintering, as he did, at the entrance of it, and with our knowledge of the sea discovered by Penny, (although Sir Edward Belcher says he saw more than he should have seen,) we cannot think that Sir John Franklin took that course, from his not having left any notice of his intention at Beechey Island—a place of all others, where, knowing he had passed one winter, we had a right to expect it. We say he passed one winter—who can say he did not do more than that, when vestiges of gardens are reported, in the early dispatches, to have been found, things which require a summer's sun, and time to attend to them. That some sad catastrophe has befallen Franklin's expedition, we are justified in concluding by the length of time which has elapsed since it sailed. Who can say that his ships were not driven on shore, as the *North Star* has been, by the ice. Erebus and Terror Bay, formed by Beechey Island, is not that sheltered place, according to Captain Inglefield, that it was supposed to be. If the *North Star* lay a whole winter on shore, as she has done, the same might have happened to Franklin's ships. But, alas, never was mystery as yet more complete than that which hangs over them. We have, first, a long unaccountable absence; we have then the discovery, five years after their departure, of where they assuredly were, but nothing to tell us whither they would next go; we have then the rumours of distress, and ill-treatment of people by Esquimaux; we have then deserted ships seen on ice—no phantom ships were these; and again from the West we have rumours of a boat and her crew, and suspicious looking Indians. Were the ships those of Franklin? Was the story of the distressed party true? Was the boat and her crew a resolute party from him, determined on penetrating to the south-west? We could put an endless string of questions, but who *can* answer them? All that we do know is, that the ships were assuredly at Beechey Island, and that nothing was found there to direct our further search for them. Mystery and mismanagement in this most important particular still hangs over the fate of the unfortunate Franklin. Will Sir Edward Belcher clear it away? We have little hope of that. Possibly more may be learnt from some distant Esquimaux, or some articles known to have belonged to his party by some fortuitous circumstance coming to light. Such may hereafter lead to the discovery of their fate.

Let us, however, turn from the sad picture; but not without paying our tribute of heartfelt respect to the memory of the gallant Bellot. His indeed was a perilous undertaking, and he, poor fellow, became another martyr in the cause of Arctic discovery. Our own personal knowledge of him can realize easily all the noble sentiments which Captain Pullen has expressed; those qualifications of the mind which constituted him the officer and the man, the beloved friend and faithful companion in enterprize and danger! Alas, poor Bellot!*

* We find by the following, which appears in the *Daily News*, that it is intended to raise a monument to his memory:—

MONUMENT TO THE LATE LIEUTENANT BELLOT.—Lord John Russell and

But is there no one else to engage our sympathy? What has become of Collinson? Will Sir Edward Belcher tell us something of him? From his expressed opinion of the icy sea to the N.W. of his position in Northumberland Sound, we have little hope there. And yet to the West we must look for him. All we know of him at present is, that he passed the Strait (Behring) in 1851. One summer sufficed for M'Clure to reach Banks Island. But two summers have not sufficed for Collinson—and here is a third in which we are still looking for the intelligence of his presence anywhere to reach us. How long must we wait for an answer?—another and another year? Has he taken the ice to the Northward? the report of Sir Edward Belcher on that subject awakens all our fears for him. But had he been to the Southward why have we not heard of him? Again we must submit to suspense and look now for further intelligence from the North, when our anxious inquiries will not only be for vestiges of Sir John Franklin's party, but also is Collinson safe?

The reader of our collection of the Arctic dispatches is referred to the little chart from the hand of our first of geographers Arrowsmith. It will place him in possession of the relative situations of the main features of the question. With the information that Behring Strait is about as far West of Banks Island (Land) as the East side of Baffin Bay is East of it, he will have a sufficiently clear conception of the whole Arctic Sea in question. But there is a very remarkable coincidence, we will call it, in one part of it to which we cannot help alluding. On the 24th of May, 1851, an officer of Captain M'Clure's ship, Mr. Winniett, was at his furthest East position, and on the 23d of May, 1851, Lieut. (Com.) Sherard Osborn, of Capt. Austin's expedition, was at his furthest West position. Thus the two expeditions, one from the West and the other from the East, approached each other within about 70 miles, and that, too, only a day apart. A similar occurrence took place with Pullen and M'Clure, being close to each other, in 1850, without knowing it; and another in 1826, when Capt. Beechey's party and Sir John Franklin himself turned back from each other in opposite directions about 140 miles apart at the same time. These are, however, among the curiosities of the arctic regions.

We now proceed with the dispatches; and first that of Captain Inglefield, who brought us the rest of the interesting letters which accompany them.

H.M. steam-ship *Phoenix*, off Thurso, Oct. 4.

SIR,—I have the honour to report to you, for the information of my Lords Commissioners of the Admiralty, my arrival from the Arctic

the Earl of Ellesmere have requested Sir Roderick Murchison to place their names on the list of the committee, for the purpose of procuring the erection of a monument to the memory of the late gallant French officer, Lieutenant Bellot, and have authorized him to announce that they are ready to contribute liberally to the laudable object.

regions, bringing with me the important intelligence of the safety of the *Investigator*, and the discovery of the North-West Passage, though, unhappily, without finding the slightest traces of the missing expedition, either by this route, or on the field of search occupied by the squadron under Sir Edward Belcher's command.

I am the bearer of dispatches from that officer and Captain Kellett, and Lieut. Cresswell, of the *Investigator*, whom I appointed from the *North Star* as supernumerary to this ship, is charged with the letters and journals of Commander M'Clure.

As his journal is of considerable length, I will endeavour to acquaint you with the substance of it, that their lordships may thus be early informed of the leading features of the *Investigator's* discoveries; but, ere I enter into this matter, I deem it to be my duty to acquaint their lordships of the result of the expedition I have the honour to command, and though I have carried out their lordships' instructions to the letter, and, I trust, to their entire satisfaction, it has not been without great difficulty, considerable peril to the safety of this vessel, and the total loss of the *Breadalbane* transport, without the loss of a single life.

This unfortunate event, which occurred on the morning of the 21st of August, off Beechey Island, no human power could have averted; and my own vessel, which at that time had the transport actually in tow, barely escaped a similar fate, receiving a severe nip, which rose the stern several feet, and arched the quarter-deck, destroying the rudder and screw; one of the beams forward was sprung, and the port bow partially stove, breaking one of the riders and forcing in the planking. The latter damage, there is some doubt, may have been sustained in a heavy gale on the morning of the 18th of August, when the ship was severely nipped off Cape Riley. The icemaster is of opinion it was received in Melville Bay, while forcing a passage under full steam through some heavy ice; however this may be, I have little doubt but that for the solid nature of the stowage of our hold, and the strengthenings fitted in England, we must have shared the same fate as the unfortunate *Breadalbane*.

By the *Diligence* their lordships will have been informed of my proceedings up to the time of my arrival at Disco. I will, therefore, now briefly state what we have since done, and then, in obedience to the fifth clause of their lordships' orders, relate what information I have obtained with reference to the expedition, and the discoveries which have been made.

On leaving Disco I proceeded, with the *Breadalbane* in tow, to Upernavik, there to obtain dogs, and to communicate with the Inspector of North Greenland concerning the disposal of the *Rose of Hull*. On the afternoon of the 14th of July we reached this place, and the ships heading off while I landed, in two hours we proceeded up the coast.

The following day, passing Cape Shakleton in a calm, I took advantage of the fine weather to obtain some looms from the Rookery for the use of the Arctic ships, and in three hours we obtained a sufficient

quantity to give each of our own vessels a day's fresh meat, reserving enough to supply the *North Star's* crew with provisions for ten days, independent of the sheep we brought from Ireland.

On the 16th of July we entered Melville Bay, and found it packed with ice, in some places very heavy, from recent pressure, and the land floe unfortunately broken away, thus depriving us of the advantage of its edge for docking the vessels, in case of a threatened nip.

On the 11th of July, owing to damage sustained in the ice, it became necessary to shift the screw, and this was done while beset among heavy floes, almost out of sight of land. From the mast-head no land could be seen at mid-day, or, indeed, any water but the pool in which the ships were afloat, but at midnight we proceeded along a narrow lane which opened away to the northward.

Thick fogs and southerly winds, which closed the ice up, prevented our getting through Melville Bay till the 25th of July, when we stretched away from Cape York for Cape Warrender. Fog prevented our taking observations while crossing over, and experiencing a strong southerly set we found, on the weather clearing, that the ship was within two miles of Cape Liverpool, though we had steered for Cape Warrender with due allowance for currents.

Reaching over to the north shore, (which we then kept close on board,) we steered up Lancaster Sound, passing large floes which were driving to the westward.

On the morning of the 29th of July we found a barrier of ice stretching from shore to shore, and which evidently had never broken away this season. We followed its edge for several miles in the hope of finding a lane through, but were eventually obliged to bear up for Dundas Harbour (in Croker Bay) there to await a change.

In coasting towards this anchorage we were surprised at beholding several tents pitched on a point six miles to the westward of Cape Warrender, but shortly found them to be the habitations of a party of Esquimaux, who had come over from Pond Bay. Among these people I found many preserved meat and potato tins, the former bearing Mr. Goldner's name, candle-boxes, some spars, and other government stores, which led me to fear that they had visited the depot at Wollaston Island.

In Dundas Harbour we lay for eight days anxiously awaiting the breaking up of the ice; and on the 6th of August, hoping that I might be able to examine, and if necessary remove, the stores from Wollaston Island, we got under way and stretched across in that direction; but heavy hummocky ice prevented our even sighting it, and we were forced to bear up again for the north shore. By this time a light north-westerly wind had eased off the ice, and I determined to push on as far as practicable under steam. The wind holding for forty-eight hours, we were fortunate enough to reach Beechey Island on the 8th of August. In many cases the ice opened just as we reached a block, which would otherwise have stopped our progress; and we were told by the officers of the *North Star* that no water was to be seen

from Cape Riley the day before we arrived. Thus their lordships will perceive that no time was lost in reaching our destination.

Erebus and Terror Bay was full of heavy hummocky ice, of great thickness, impervious to the saw or the blasting cartridge, and too rough and too much inundated with deep fresh-water pools to admit the possibility of landing the stores on Beechey Island, or putting them on board the *North Star*, (a mile and a half distant,) according to my orders.

I had, therefore, no choice but to place them in what I deemed the most convenient and practicable position, and, in my capacity as senior officer at Beechey Island, determined on Cape Riley as the fittest spot, and even more accessible than the island.

Accordingly on the following morning we commenced our work, and having secured the transport in a bight of the land ice, immediately abreast of the steep cliff, the people were now set to work, watch and watch, night and day. To expedite the service, I ordered all hands to be sent from the *North Star*, with their hammocks, and desiring them to be victualled from our ship. The time was thus saved which would have been lost by their going and returning to their vessel, upwards of two and a half miles distant.

The steamer lay with her fires banked up, and her hawsers in, ready, at a moment's warning, to take the transport off-shore, in case of the ice closing; and now, everything being set forward systematically, and 130 tons of coal landed in the first thirty hours, I determined to proceed myself up Wellington Channel, by boat and sledge, in search of Captain Pullen, who had been absent from the *North Star* a month; and, as his provisions must have been expended, there was some apprehension as to his safety.

I had the double motive of desiring to convey to Sir Edward Belcher his dispatches, as it would only be by such means he could possibly learn of my arrival until next season, unless he should return to Beechey Island.

I started in my whale-boat, with a month's provisions, at 9 a.m. on the 10th of August, leaving written orders with the First Lieutenant, a copy of which I enclose, marked "M 1," in case of any unforeseen casualty preventing my return to the ship by the time the transport was cleared, to run no risk of the ships being caught for the winter, but to proceed to England without me.

Wellington Channel was then full of ice, and so rough with large cracks and pools that it defied sledging, excepting with a strong party. Landing, therefore, on Cornwallis Island, a little above Barlow Creek, we made an attempt to carry a small punt over the ice; but this proved ineffectual, and I determined at last to proceed with Mr. Alston, mate of the *North Star*, and two men, by land, to Cape Rescue. Each carried a blanket bag, with a fortnight's provisions, and reached, with much exertion, the Cape, at 5 p.m. of the 13th of August. A piece of open water off Helen Haven prevented our proceeding further, and here we learnt by notice of Captain Pullen's return to his ship, and his having communicated with Sir Edward Belcher.

Depositing in the cairn duplicates of their lordships' dispatches for that officer, we commenced our return, and reached the tent on the fifth day of our absence, footsore and much exhausted with this new mode of journeying in the Arctic regions, having travelled 120 miles; sleeping without shelter on the bare beach, at a temperature several degrees below freezing point, was a trial for all, more especially as we could not eat the pemmican, and subsisted wholly on biscuit and tea, with the exception of a few dovekies which I shot.

Up till the 12th of August Wellington Channel was blocked with ice as far as the eye could reach. The plan marked "O 1" shows its position at this date, and the alteration I have made in the coast line of the western shore.

It is remarkable that we traced and followed, for many miles, the dog-sledge tracks of Mr. Penny, as fresh upon the sandy beach as though they had been made the day previous, and it must be remembered that these were originally upon ice.

I returned to the ship on the afternoon of the 15th of August, and found that wind and changes in the ice had obliged the first lieutenant to move the transport away from Cape Riley, and that the process of unloading had been carried on but slowly by means of sledges; 856 packages had, however, been transported to the *North Star* by these means.

On the 17th of August a heavy gale from the south-east set the ice on to the Cape so suddenly and with such violence that both ships narrowly escaped being lost. The *Phoenix* was severely nipped, the ice bearing down upon her with such force that the six hausers and two cables laid out were snapped like packthread, and the ship forced against the land ice, lifting her stern five feet, and causing every timber to groan. The hands were turned up to be ready in case the ship should break up, though there would have been small chance, in such an event, of saving a man, as the wind blew so violently, with snow, that it was impossible to face it, and the ice in motion around the ship was boiling up in a manner that would have defied getting a safe footing to the most active of our crew.

The plan marked "C 2" will show the manner in which we were driven continually away from Cape Riley by pressure from ice until the 20th of August, when the *Breadalbane* was carried out among some floe pieces and set into the Straits. I pushed out under steam into the pack, and then only with considerable difficulty.

Having once more got her alongside the derrick, we commenced to clear with all hands, as I intended to finish the work without cessation if we laboured all night.

While thus employed, I received by an official letter from Captain Pullen, a copy of which I enclose, marked "L 1," a report of the melancholy intelligence of the death of M. Bellot, who had been sent by Captain Pullen on his return during my absence, to acquaint me of the same, and to carry on the original dispatches to Sir Edward Belcher. This unfortunate occurrence took place on the night of the gale, when M. Bellot with two men were driven off from the shore

on a floe; and shortly after, while reconnoitering from the top of a hummock, he was blown off by a violent gust of wind into a deep crack in the ice, and perished by drowning. The two men were saved by a comparative miracle, and, after driving about for thirty hours without food, were enabled to land and rejoin their fellow-travellers, who gave them provisions, and then all returned to the ship, bringing back in safety the dispatches, but three of them fit subjects only for invaliding.

A separate letter will give their lordships further information relative to the death of this excellent officer, who was sincerely regretted by us all. His zeal, ability, and quiet unassuming manner, made him, indeed, beloved.

The ice closing again obliged us to quit Cape Riley before midnight, and, in endeavouring to push the ship into a bight in the land floe, the *Phoenix* touched the ground, but came off again immediately without damage. The whole night was spent in struggling to get the ships into a place of security, but the ice drove both vessels fast to the westward, when at 3.30 a.m. of the 21st of August, the ice closing all round, both vessels were secured to a floe edge, but with steam ready to push through, the instant the ice should loosen.

Shortly, however, a rapid run of the outer floe to the westward placed the *Phoenix* in the most perilous position. I ordered the hands to be turned up, not that aught could be done, but to be ready in case of the worst to provide for their safety. The ice, however, easing off, having severely nipped this vessel, passed astern to the *Breadalbane*, which ship either received the pressure less favourably, or was less equal to the emergency, for it passed through her starboard bow, and in less than fifteen minutes she sunk in thirty fathoms of water, giving the people barely time to save themselves, and leaving the wreck of a boat only to mark the spot where the ice had closed over her. Anticipating such a catastrophe, I got over the stern of the *Phoenix*, as soon as the transport was struck, and was beside her when she filled, and can unhesitatingly state that no human power could have saved her. Fortunately, nearly the whole of the government stores had been landed.

Enclosed, a list marked "L 2" sets forth the quantity and kind of stores that were landed at Cape Riley and Beechey Island; also what were lost in the transport.

Having taken on board the shipwrecked crew, every precaution was used with regard to the safety of Her Majesty's steam-vessel; but it was not till the morning of the 22nd of August that we succeeded in getting her to a safe position in Erebus and Terror Bay, where the ship was again secured to the land floe.

I now resolved to lose no time in getting to England; but, that I might have the advantage of the latest intelligence from the Arctic squadron, I determined upon taking the opinion of the icemaster as to the latest date he considered I could safely remain at Beechey Island. Enclosed, marked "L 3." is a copy of this report, and now I must beg to refer their lordships to the general orders from the senior offi-

cer,* delivered to me by Captain Pullen on his return from Sir Edward Belcher, and while their lordships will readily understand how awkward was the position in which I thus became placed, still it was not without very serious deliberation, the written opinion of Captain Pullen upon the subject, a copy of which I enclose, marked "L 4," and the authority as granted to the senior officer at Beechey Island by their lordships' memorandum, May 11, 1853, that I replied to Sir E. Belcher's order by a letter, the copy of which, marked "L 5," I enclose, and which I acted on; delaying to the last moment (and two days after my icemaster advised our departure) with the hope of Sir Edward Belcher's arrival.

Their lordships will, I trust, bear me out in the steps I have taken, and though I feel how serious is the responsibility I have thus incurred, it has been done with the single motive of the public good, and acting up to the full spirit of my instructions.

On the 24th of August I sailed from Beechey Island, but was shortly forced to take shelter in a little harbour we discovered, and were obliged to run into in a fog. This harbour, eight miles east of Cape Fellfoot, a plan of which I enclose, marked "C 3," I named Port Graham, and it is a well sheltered position, with good anchorage and fresh water; many hares were seen, and nine shot.

Here we lay during a violent gale from the eastward, which was so furious in the gusts that, though the ship lay under the lee of a lofty hill, she drove with two anchors ahead, until she brought up in forty fathoms of water.

The gale set vast bodies of ice up the Straits, until it came to a dead stand, doubtless from it having filled up the whole channel to Beechey Island, and most fortunate was it that we got away when we did. For two days not a spoonful of water could be seen from the neighbouring hill; and the temperature falling rapidly, with the prospect of an early winter, I began to fear we had found our winter quarters: indeed, it was a matter dependent entirely on the wind whether we should get out this season. A watch was set to report the state of the ice; the icemasters and officers frequently visiting the look-out-hill; on the morning of the 31st of August the ice commenced to move out of the harbour, and, carrying the ship with it, we narrowly escaped being driven into the pack, which was only prevented by slipping the cable (with a hawser attached) and forcing the vessel, under steam, through a crack in the floe. The hawser was cut through by the ice in endeavouring to recover the anchor, which was thus lost. I now deemed it advisable for the safety of the vessel to proceed to the inner bight of the harbour, which, lying behind a shallow spot, perfectly secured her from ice driving in or out, and, should we be unable to get away this year, would prove a good position for winter quarters.

I was ill-prepared for such a contingency, as we had not left on board sufficient provisions for our now much increased crew, having

* Marked "M 2."

the people of the three other vessels of my squadron with me, besides supernumeraries and invalids.

In the evening a small crack along the north shore to the eastward was observed, and we immediately shipped the anchor and steamed up, but it closed ere we could reach it; we therefore returned for the night; but in the morning I was glad to find it again opened, and we proceeded under full steam and sail, with a light northerly wind, towards the eastward. Nothing but a powerful steamer could have effected her escape at that period; and now, with one or two slight detentions for a couple of hours, we made out of the Straits, passing Cape Warrender on the morning of the 2d of September; and here I beg you will call their lordships' attention to this position as one well applicable for a dispatch rendezvous.

During my stay at Port Dundas, (which is immediately under the cliffs forming Cape Warrender,) I ordered a large cairn to be built on a remarkable rocky peninsula at its entrance. This cairn is upwards of 16 feet in height, 20 feet in circumference, and painted red with a white cross. Its position is such that a vessel sighting Cape Warrender must perceive it, and as nearly all the whalers every year sight this cape, I conceived it to be an admirable position (should their lordships desire to send any dispatches to Sir Edward Belcher next year by the whalers) for these dispatches to be deposited.

For sailing marks I have made sketches of the coast in two positions. Among the drawings are three views, marked "D 1 and 2," duplicates of which I have left with Sir E. Belcher; and I believe it to be Capt. Pullen's intention, unless directed otherwise by his senior, to have an officer and party ready to receive any communication next year, and, in return, to forward his intelligence by the same opportunity. Should a government vessel be sent out from England, she would of course carry the party on to Beechey Island.

With light winds we succeeded in getting out of Lancaster Sound on the 3d of September, the ice proving unfavourable for examining the depôt at Wollaston Island, which I had intended doing.

We arrived at Lievely, Disco, on the 9th of September, and immediately commenced coaling. The barometer threatening a southerly gale, induced me to pass through the Waigat to escape it, and in the darkness of night, running under full sail and steam, we were nearly going stem on to an iceberg 100 feet in height, to avoid which we rounded to within half pistol-shot of a rock awash at the entrance of the Moligate, and which, though not laid down in the charts, we supposed the ship was well clear of; a strong set through the channel to the northward must have caused this deception.

While the coaling was being completed I made arrangements with the inspector of North Greenland concerning the disposal of the hull and spars of the stranded whaler *Rose*.

For the more convenient disposal of her remains I blew her up, and having landed, and placed under charge of the governor, the masts and spars, with a list of their prices, (a copy of which, marked "L 6," I enclose,) we took on board for firewood such of the debris of the hull

as would otherwise have been appropriated by the Esquimaux, leaving the remainder convenient firewood for vessels touching there, to be obtained at 14s. a fathom, the price to be received by the governor, and remitted by the Danish government to the British Admiralty for the benefit of the underwriters.

Having completed these arrangements, coaled, watered, and refitted, we were detained two days longer, by a strong N.E. gale; but on the morning of the 17th of September, proceeded to sea.

At Lieveley I obtained information of a coal mine about 26 miles from the harbour, on the southern shore of the island, and I am told that the coal to be obtained here is in such quantities that a ship might take 1,000 tons. For burning in stoves it is preferred by the Danes to English coal. I obtained a sufficient quantity of an inferior sort to make trial in our boilers. A copy of the chief engineer's report I enclose, marked "L 7," and I have retained on board four casks of this fuel for their lordships' disposal.

On the 18th of September I put into Holsteinbourg to obtain sights, to complete our meridian distances, and satisfy me as to the rates of our chronometers. In this harbour (a complete survey of which, made by Mr. Stanton, the master, during our first visit, and which is marked C 4) we found the *Truelove*, Captain Parker, which had put in the day previously with her bow stove; she had received this damage among the ice in the gale of the previous Wednesday. I rendered her every assistance, with a carpenter and stores, and towed him to sea at daylight, on the morning of the 20th of September, carrying him out to an offing of 60 miles. He reports that all the whalers were caught among the ice in that gale, and he much feared they had received some damage, but, upon his acquainting me they were all in such close company that the crews of any disabled vessels would surely escape to the others, I did not deem it necessary to delay my return to England by going over to the fishing-ground.

Since rounding Cape Farewell, a succession of strong northerly and westerly winds have favoured our return, and we sighted land on the 3rd instant.

And now, Sir, I beg to relate, in a summary manner, the intelligence gleaned from the searching squadrons; and first, with reference to Sir Edward Belcher, I have little else to say but that he wintered in a spot he had named Northumberland Sound, in lat. $76^{\circ} 52' N.$, and long. $97^{\circ} W.$, near the position now marked in the charts of Wellington Channel as Cape Sir John Franklin. From Captain Pullen I learnt that not the slightest traces of the missing expedition had been met with, either by this or the western branch of the searching squadron, and that it was evidently the intention of Sir Edward Belcher to return to Beechey Island as soon as possible. For the rest, Sir Edward's dispatches will convey all further information.

Captain Kellett wintered at Dealy Island, Melville Island. He had a narrow escape of losing his ship on the night of his departure from Beechey Island; she grounded off Cape Colbourn, and was only got

off after the ice had set down upon her, casting her over on her broadside, and with the loss of sixty feet of her false keel.

It was a party from his vessel that discovered the dispatch of Captain M'Clure at Winter Harbour, and was thus led to the *Investigator's* position, a brief account of the voyage and discoveries of which vessel I will now relate.

Their lordships will remember that it was on the 6th of August, 1850, that the *Investigator* was last seen running to the north-eastward with studding sails set. They rounded Point Barrow with much difficulty.

At the River Colville, in 150° W., they were detained some days, and then thick weather, fogs, and contrary winds set in, the latter proving rather an advantage to us, as it kept the ice open, and the necessity of working to windward between the polar pack and the gradually sloping shore gave them the means of avoiding dangers. On the 26th of August they reached the mouth of the Mackenzie, the pack at this part being upwards of ninety miles distant. On the 30th they were off Cape Bathurst.

When at Cape Parry open water to the northward induced Captain M'Clure to push for Banks Land, and when about sixty miles from this cape they fell in with an unknown coast, which was named Baring Island. Passing up a strait between this island and a coast that was called Prince Albert Land, they reached the latitude of 73° , where ice impeded their further progress. The season suddenly changing, the ship was beset and forced to winter in the pack. Drifting to the southward, they were ultimately frozen up in lat. $72^{\circ} 40'$ N., and long. $117^{\circ} 30'$ W.

The travelling parties in the spring found no traces of the missing expedition, but discovered and laid down much of the adjacent coasts.

On the 14th of July, 1851, the ice broke up, and, freeing the ship, an endeavour was made to push to the northward towards Melville Island, but an impenetrable pack in lat. $75^{\circ} 35'$ N., long. 115° W., precluded their completing what their autumn travelling parties had proved to be the north-west passage. An attempt was now made to round the southern shore of Baring Island, and proceed up the west side: and with great peril to the vessel they succeeded in reaching as far as lat. $74^{\circ} 6'$, and long. $117^{\circ} 12'$, where they were frozen in on the 24th of September, 1851, and have never since been able to move the ship. Their record was deposited at Winter Harbour the year following Commander M'Clintock's visit, while employed on Captain Austen's expedition.

There are two remarkable discoveries mentioned in Capt. M'Clure's journal, viz., some smoking hillocks and a petrified forest. He also states that during his intercourse with the natives he only once met with any hostile demonstrations. This occurred at Point Warren, near the *Mackenzie*, where, on attempting to land, two natives, with threatening gestures, waived them off; it was not without much difficulty that they were pacified, and then they related that all their tribe but the chief and his sick son had fled on seeing the ship, alleging as a

reason that they feared the ship had come to revenge the death of a white man they had murdered some time ago. They (through the interpreter) related that some white men had come there in a boat, and that they built themselves a house and lived there; at last the natives murdered one, and the others escaped they knew not where, but the murdered man was buried in a spot they pointed out. A thick fog coming on prevented Capt. M'Clure from examining this locality, which is much to be regretted, as here is the probable position in which a boat party endeavouring to return by the *Mackenzie* would have encamped.

I have now only to state further for their lordships' information on this head, that Commander M'Clure had made arrangements for deserting the ship, to have been carried out a few days later than the opportune arrival of the officer from the *Resolute*, and that Captain Kollett sent his surgeon to report upon the health of the crew. He also desired that should there not be among them twenty men who would volunteer to remain another winter, Captain M'Clure was to desert his vessel. The *Intrepid* was expected at Beechey Island with the crew, and Sir Edward Belcher had ordered the *North Star* to be prepared on her arrival to proceed to England, sailing on the 1st of September, and to leave the *Intrepid* at Beechey Island in her stead.

I have now, in concluding the intelligence gained concerning the Arctic searching squadrons, to acquaint their lordships of the dangerous position in which the *North Star* passed the winter. Shortly after I left Beechey Island in my yacht, the *Isabel*, a violent gale which I encountered in the straits drove the *North Star* on shore, where she remained during the whole winter, and was only got off this spring with much difficulty.

Herewith I enclose a chart, showing the tracks of the vessels of my squadron on their outward voyage, and this vessel homeward; also, the several alterations and additions made in the coast line of Greenland. This is marked C 5; also, a chart on Mercator's plan, marked C 6, showing the north-west passage, with all the latest discoveries, and the coasts explored by each expedition up to this date, in search for the missing squadron.

From C 1 to C 6 are the surveys and plans made during the voyage, and alluded to in this dispatch. From L 1 to L 7 are the copies of letters therein spoken of, and enclosures M 3 to M 10 are copies of the memorandums and orders issued by me as senior officer at Beechey Island.

The drawings sketched from D 1 to D 24 are made, exhibiting several positions of the ships during the voyage, and headlands, coastline, and views taken at different times; also a drawing of the *Investigator*, wintering in the pack, made from a sketch, and the description by Lieut. Cresswell.

In natural history we are able to add a large collection of minerals to our museum, nearly a thousand specimens of ores and earthy substances have been obtained at different parts of the coast of Greenland. Specimens also of the flower, leaf, and root plants, of all the kinds we

have been made acquainted with, are carefully preserved; and such crustaceous and other creatures from the animal kingdom as our limited means have allowed us to collect, are prepared for the naturalists.

A careful meteorological journal has been kept, a tide register at Holsteinberg, and a great many observations made on the direction, dip, and force of the magnet. These have been carried on by Mr. Stanton and the late lamented M. Bellot, whose industry in this branch of science is well proved by the mass of valuable matter he has left behind.

I have only now to beg their lordships will accept my assurance of the perfect satisfaction I have received in the conduct of every officer and man in the expedition during a period of incessant labour, continual hardship, and frequently imminent peril; each has done his duty with a zeal and alacrity that I find it hard to individualise.

On all occasions I have received the most prompt co-operation from my first lieutenant, Mr. Elliott, who, as an old officer, I would beg to recommend to their lordships' notice.

Among our numbers six only of the officers and men had been among the ice before, yet I invariably found them as active in their employment, while engaged with that treacherous element, as the most experienced whalers; and whatever the service, the danger, or the emergency, I had only to order and it was promptly executed. Without such hearty co-operation on the part of both officers and men, I must say I could scarcely have completed all that has been done; and I have only further to state for their lordships' information that to the officers this expedition has been a very serious expense. Obligated to equip themselves and store their mess for an Arctic winter, they have returned to England, after an absence of little more than four months from the time they sailed from Cork, and thus their pay cannot cover the expenses of such a costly outfit. It is more particularly heavy to the juniors, whose expenses were the same, while their pay is considerably less.

My remark book contains much information I have gathered during the voyage upon many subjects, and this accompanies my charts and drawings.

I beg you will assure their lordships of my anxiety to learn of their approval of my proceedings, more especially as I found it necessary upon so many occasions to take upon myself a responsibility which nothing but the circumstances in which I was placed could otherwise have justified. I especially refer to the dispatch of the *Diligence* to England, and the delicate task of disregarding the orders of my senior officer.

I omitted to mention that on our return south through Baffin Bay, we tried for soundings at a spot marked in the track chart, with 2,870 fathoms, without getting bottom. The line was upwards of three hours and a half in running out, and the lead employed more than a half hundred weight.

I have also to state, in conclusion, that I ordered Mr. M'Cormick to join my ship for a passage to England, learning that he had finished the work that he was appointed to the *Nork Star* to perform, and his

desiring to leave the ship. I also ordered, as per memorandums 3, 4, 6, 8, 9, and 10, certain exchanges among officers and men belonging to this ship and the *North Star*.

The pay-books of this ship are made up, and are enclosed with the dispatches.

I have the honour to be, Sir,
Your most obedient, humble servant,
E. A. INGLEFIELD, Commander.

Admiralty Office, Oct. 7.

Sir,—I have the honour to acquaint you for the information of the Lords Commissioners of the Admiralty, of my arrival in London this morning, with Captain Inglefield, of H.M.S. *Phoenix*, having been charged with Captain M'Clure's dispatches by Captain Kellett, of H.M.S. *Resolute*, which are herewith transmitted, together with a copy of the orders I received from Commander M'Clure and Captain Kellett.

I have the greatest satisfaction in reporting, that during the prolonged service on which we were employed in search of the crews of the missing ships, we have only lost three men,—in the spring of the present year.

I left the *Investigator* on the 15th of April last, in the Harbour of Mercy, lat. $74^{\circ} 6' N.$, long. $117^{\circ} 45' W.$, and, crossing the ice with sledges, reached the *Resolute*, at Melville Island, on the 2nd of May.

Assisted by a party from the *Resolute*, I reached the *North Star*, Beechey Island, on the 2nd of June, with Lieut. Weymouth, whom it gives me great pleasure to speak of in the highest terms.

I have the honour to be, Sir, your most obedient servant,
A. G. CRESSWELL, Lieutenant,
H.M.S. *Investigator*.

By Robert M'Clure, Esq., Commander of H.M.
Discovery Ship *Investigator* and Senior Officer Present.

Considering it of the utmost importance that the crew should be divided, as the only means of carrying the views which I entertain into effect—viz, the probability of being thereby able to extricate and carry home the ship, or failing in the accomplishment of such design, to be enabled to meet the exigencies of another winter in any part of these seas, without the risk of suffering from starvation, which must inevitably follow with the whole complement on board; I therefore deem no further preamble requisite, but direct your attention to the following:—

Having most opportunely received intelligence, conveyed under very severe and trying circumstances by Lieutenant Pim, from Captain Kellett, C.B., of H.M. discovery ship *Resolute*, now most providentially wintering at Dealy Island, that has allayed the great apprehension, which I otherwise could not have divested myself of feeling, for the safety of those engaged in the execution of a service so hazardous,

you will consequently, upon the 15th of the present month, or as soon after as the weather will permit, proceed to the island mentioned in the preceding paragraph, taking under your command such officers and men as are selected for detachment.

Several will require great care and attention from the debility occasioned by the epidemic that has throughout the late very severe winter afflicted them, consequently you will not allow the laudable anxiety which might urge you to accomplish the journey by undue exertion, to overcome a proper consideration for their enfeebled state, so as to tax their strength too severely.

You will be provisioned for twenty-four days, which will admit of your taking easy stages for Cape Providence and Point Hearne, where you can complete your resources if necessary, and also remain to refresh your crew. Thence to the *Resolute* is only thirty miles.

On arriving at Dealy Island and reporting yourself to Captain Kellett, C.B., you will then, of course, be under his orders, which you will follow for your future guidance.

Given under my hand, on board H.M. discovery ship *Investigator*, Bay of Mercy, Baring Island.

ROBERT M'CLURE, Commander.

To Lieut. Cresswell, of H.M. discovery ship
Investigator, in charge travelling-party.

By Henry Kellett, Esq., C.B., Captain of
H.M.S. *Resolute*.

It being of importance that an officer of H.M.S. *Investigator* should reach England by the earliest opportunity, and it being possible that these ships may not break out this season,

You will take charge of Commander M'Clure's despatches, delivering them to the commanding officer of the *North Star*, who will cause copies to be made of them for Sir Edward Belcher's information, and return you the original, sealed, for conveyance to England.

You will accompany Mr. Roche, mate, who has charge of the party, with instructions to victual you and Mr. Wynniatt, whose health is such as to require an immediate return to England.

Given under my hand, on board of H.M.S. *Resolute*, at Dealy Island, May 7, 1853.

HENRY KELLETT, Captain.

Lieut. Cresswell, H.M.S. *Investigator*.

H.M.S. *Assistance*, on return to Beechey Island, westward of Baillie Harbour, and about 10 miles east of Cape Becher, July 26, 1853.

SIR,—The very unexpected arrival of Commander Pullen in his boat off Dundas Island, just as I had recovered my despatches, (deposited for him at Cape Becher in May last,) places me in the position of addressing to their lordships a very hurried dispatch.

First, because a mile gained in this dreaded Strait is a consideration for risking wintering here. Next, Commander Pullen has to return by the

west of Dundas and Hamilton Islands, and I cannot strain his crew by carrying them much out of their way.

After my dispatch of April last, I proceeded to the N.E. as far as the connexion with Jones Strait in 90° , where I found the sea open, and all progress obstructed on the 20th of May. Polar Sea as far as the eye could range, from 1,500 feet elevation, "rough sailing ice."

This elevation is in lat. $76^{\circ} 31'$, and about 90° W.; but the whole survey, I trust, will be (on $1\frac{1}{2}$ inch scale to 1 mile) ready for transmission before the 1st of September, at which date I purpose sending one of the vessels home.

Being cut off by sea, I now pursued an opening from Cape Separation, (nearly north 20 miles of Prince Alfred Bay,) and reached Wellington Channel.

I next, having noticed loom of land from the high land of Britannia Cliff, started from Princess Royal Island, and reached the westernmost, in $78^{\circ} 10' N.$, calling the group "Victoria Archipelago," and the easternmost, forming the channel to Jones Strait, "North Kent," in honour of his Royal Highness the late Duke.

Reports of "open water," the reception of the missing dispatches, and other causes, rendered my return to the ship to look out for the interests of those still absent imperative. I reached the ship without casualty on the 22d of June, after an absence of 52 days, bringing my men back in good working condition, and not subjects for the list.

Commander Richards performed his work nobly, so did Lieutenant Osborne, his companion.

In the first place, by a curious preconception, he deposited his dispatches for Captain Kellett, on the 30th of April, at a point in $76^{\circ} 32'$, $105^{\circ} 4' W.$, my point agreed on being 77° and 105° . After having advanced 120 miles he met Lieutenant Hamilton seeking these dispatches. He forthwith put him *en route* to obtain the dispatches, to overtake Lieutenant Osborne, and by these means place me in possession (by the return of the Reliance sledge) of the important, and, to their lordships, doubtless pleasing intelligence, of the safety of the *Investigator* and crew at Banks Land, (as per documents directed to be forwarded by Commander Pullen,) having nearly accomplished the N.W.—N.E. passage!

Commander Richards, finding that Commander M'Clintock had poached upon his ground, instantly came to the determination of visiting the *Resolute*, and obtaining all the requisite particulars relative to the *Investigator*.

By this course he laid down the shores of the eastern side of Hecla and Griper Gulf, and, on his return, came up Byam Martin Channel, proving its connection with our Polar basin.

Operations for cutting out were complete, when, having dispatched a cutter, by calculation, to render assistance, she fortunately met Commander Richards at the critical moment, and, after an absence of 94 days, I had the pleasure of taking him by the hand at the mouth of our canal on the 12th of July.

That night, both vessels being afloat and ready, everything was em-

barked, and on the 14th July, 11 months from leaving Beechey Island, the vessels, free from accident of any kind, were again in motion on their proper element; 48 hours found us halfway to Cape Becher, two more days to the land floe at Cape Acland, near Sir R. Inglis Bay; and to-day 10 miles beyond Cape Becher, with still 10 miles of open water in advance.

Lieutenant Osborne rejoined on the 15th, after an absence of 97 days, having worked for the position said to be attained by Messrs. Goodsir and Marsball on the south shore, but without meeting any of their cairns or marks, even until John Barrow Hill bore north (true).

I have directed the *North Star* to take home, at the earliest safe moment, the officers and crew of the *Investigator*, should they arrive; which I trust Captain Kellett will direct, as I do not conceive, looking to their lordships' intentions, that any further expense should be incurred by the detention of that vessel and crew, merely for the purpose of awaiting the movement of the ice, for 20 seasons. I earnestly hope, however, that she may fortunately be released this season; and I have that full confidence in Captain Kellett that such a desirable termination will not be lost sight of in connexion with the return of his own vessel this season. The circumstance of the progress of Commander M'Clure, and the probability of Captain Collinson following up his track, must certainly affect my instructions, and I confidently look for dispatches to guide me in the altered state of affairs on my return to Beechey Island. I have said sufficient of my leading officers to make their lordships aware of their ability and zeal. At the end of this service I hope to be able to report of the general conduct and abilities of all the others.

Fully trusting that their lordships will feel satisfied not only that all has been done, but that we are ready and willing to do more.

I have the honour to be your most obedient servant,

EDWARD BELCHER, Captain,

Commanding Arctic Squadron.

To the Secretary of the Admiralty, London.

H.M.S. *Assistance*, Winter Quarters, Northumberland Sound, Sept. 22, 1852, lat. $76^{\circ} 52' N.$, long. $97^{\circ} W.$

SIR,—Being at this moment about to examine the coast (by sledge) easterly to Cape Becher and Hamilton Island, I take this precaution, in the event of any party from the *North Star* visiting our cairns, to afford the latest information of our proceedings.

On the 14th of August, as my despatch left with Commander Pullen would inform you, I quitted Beechey Island, leaving there Captain Kellett with his instructions, and who would see the *North Star* safely docked before quitting. Steaming on, we passed up Wellington Channel without observing Baring Bay, or any of the deep indentations of the new chart, nor the Mount Franklin of De Haven. On the morning of the 16th we noticed a very remarkable pile on a hill, apparently the work of man, and I immediately moved on in the *Pioneer*, examined it, and obtained my first well fixed position in these regions. The

pile was found to be merely the remains of a dike, which, being harder than the surrounding matter, had remained until it had acquired a height of 20 feet,—about 14 in the meridian, and 6 feet E. and W. The position of our cairn (about 100 yards south of it) was in lat. $76^{\circ} 12' 52''$ N., long. $92^{\circ} 48' 42''$ W., evidently the rise from the point where one of the searching parties observed, in $76^{\circ} 13'$ distant about two miles west from us. But the bays, formed north and south, free from ice, do not exist in any manner worthy of more than slight indentations. The ice or snow, as the southern land is very low, must have deceived the previous visitors. I think I may safely say, that not the most distant hope of any communication by sea exists in this direction with Jones Sound. Although, from the fogs and vapours which were particularly noticed from the crow's nest on board, and by myself from the deck, exhibiting at times the appearance of smoke from fires, I am inclined to suspect extensive lakes or arms of the sea, &c., running parallel to the northern land, and, possibly, connecting by some very narrow neck, but westerly much, as it would otherwise materially influence the tides in this region. I now speak determinedly in calling things by their proper names,—at least, if any tides are acknowledged in the English Channel,—regular rise and fall, ebb and flood. Leaving this position, and having already made my mind up not to interfere with any land which could have been seen and named by Captain Penny's people, I pushed on to the westward, reaching Cape Becher about midnight, where a deposit of 42 days' provisions for ten men was well secured, and notice of our movements left. Passing westerly, we reached, about 4 p.m., the extreme land. Here I erected a very conspicuous cairn, and from the summit (about 1,000 feet above the sea) obtained a view of the distant land, easterly and southerly, to S.W., where it ceased at what I shall continue to consider as Cape Lady Franklin, reserving the name of Sir John for the base of my hill. But hence the view from [?] of Cape Becher was entirely cut off by an intervening point not less than 12 miles. The coast line, diminished much in length, will, however, accommodate Captain Penny's names, giving to the island next to me Cracroft and Point Sophia, and the points of others his different names.

The land on which I stood being veritably newly discovered, I took possession of it in due form as Mount Percy, and the territory, Northumberland of North Britain, at the same time naming the expanse of islet-covered sea beneath me Northumberland Sound.

The floe ice having closed in here on the outlying islands, compelled me to seek for security for the vessel, which the Sound happily afforded. But, as it continued to press in, no time was to be lost in selecting a spot where she might securely winter. This, fortunately offered about three miles westerly, where the vessels are now well frozen in.

On the 18th I made an excursion to one of the highest peaks of the outlying north-western Island, from which I obtained angles to Cape Lady Franklin, as well as to the southern and westernmost lands, where it seemed to trend away S.S.W., true; the next very distant land bore N.N.E., about 30 to 35 miles, being nearly the computed

distance which we were from Cape Lady Franklin. I especially remark these computed distances to show that, under the most favourable circumstances in this climate, and with first-rate instruments, I could barely, at such distances, be sure of the objects presented to my view; and even then I asked my assistant to satisfy himself that it really was land which I took.

As far, therefore, as my observations from this point, and those of Commander Richards, from a much higher mountain, about five miles easterly of me on the main, are concerned, there is no visible loom of land between Cape Lady Franklin and the newly-discovered land, N.N.E.; or, by actual observation, $143^{\circ}2$ of the horizon.

From the free motion of the tides and flocs in this direction, here parallel to the channel, (say N.N.W. and S.S.E.,) I am satisfied that we are now in the Polar Sea, composed, in all probability, of a great archipelago of islets and sandbanks.

Time was now too precious to lose in waiting for open water for the ship; indeed, I judged correctly in estimating the season closed, and immediately determined on boat and sledge work. It was first intended to take two boats, but the former Arctic men thought that appearances indicated firm ice or flocs. For my own part, I determined to secure my great object of settling the position of all we had seen, and of being properly prepared for further operations. The light ice-boat, built after a model lent to me by Captain Hamilton, and named after him, was attached to my sledge. Commander Richards had the second sledge, and Lieutenant Osborne the third, provisioned for twenty-one days, and, with a precautionary depôt sent overland to a bay likely to afford shelter, the party started on the 23rd of August. It was soon found that the pools and cracks between the flocs could not be managed by one boat, and she little better than pasteboard as to thickness; a whale-boat was therefore added. It is immaterial now to mention particulars, but on the 25th we landed on a low point, where the coast suddenly turns to the eastward, and discovered the remains of several well built Esquimaux houses, not simply circles of small stones, but two lines of well laid wall in excavated ground, filled in between by about two feet of fine gravel, well paved, and withal presenting the appearance of great care—more, indeed, than I am willing to attribute to the rude inhabitants or migratory Esquimaux. Bones of deer, walrus, seals, &c., numerous. Coal found.

The addition of the whale-boat rendered the movements of the other party so slow that I was compelled to move on singly, leaving Commander Richards to complete the coast line search from his advanced station as long as his provisions would last (one sledge having swamped and spoiled the greater part).

On the evening of the 27th of August, the anniversary of the action at Algiers, I took possession of the first large island seen from the former station, naming it, in compliment to the gallant Commander-in-Chief, Exmouth Island. The summit named Milne Peak,—our second in command. To the eastward of me lay a long table island, to which Commander Richards would repair, and connect it with our

survey. From the summit of this island, 580 feet above the sea, and in lat. $77^{\circ} 15' N.$, I had anticipated the satisfaction of commanding a most extensive range. I was miserably disappointed; and, after watching two successive days, for hours, through snowstorms, for merely some glimpse of the land I had now to seek, I was barely rewarded by ascertaining that an open sea, of about seventeen miles, would enable me to reach it, if the wind permitted; for the boat, when sledge-laden, with tent, bedding, provisions, &c., was not very safe, even on the Thames above bridge. Fortune favoured us, and, by aid of sails (tent-bottom) and paddles, we reached our destination the next afternoon, after six hours' toil. The ice then moving on to the land completely entrapped us, but we were safe on *terra firma*. Thick snowy weather continued with light gleams at times, affording us occasionally glimpses of Exmouth and Table Islands. I took possession of this new addition to Her Majesty's territories under the title of North Cornwall, in compliment to his Royal Highness the heir apparent. Waiting to secure this position, which was determined to be in lat. $77^{\circ} 33' 30'' N.$, long. about $97^{\circ} W.$, and having ascended the highest point of land (within three miles N.E.) and satisfied myself that I commanded the north-west extreme for a radius of five miles at least, and that no land within the range of Exmouth Island (seventeen miles distant) existed westerly of me, I returned to the beach, and, having hauled the boat overland, to clear the ice which had entrapped us, launched into the open water, and pulled along the south-western line of the island about seventeen miles, where we landed and encamped for the night.

This position proved to be the southern angle of North Cornwall, situated in $77^{\circ} 28' 50'' N.$ The weather still continued thick, with occasional snowfalls, and hiding most of the objects which I was so anxious to obtain; indeed, barely sufficient of Exmouth and Table Islands to secure my position.

But in the eastern horizon, where the sun at times shone brightly, I was enabled from a very elevated position to satisfy myself that no land was visible in the eastern horizon for thirty miles; and the eastern low extremity of this land, North Cornwall, distant about ten miles E.N.E.

Throughout this very interesting search not a particle of drift wood has been noticed since quitting Village Point, and not a trace of human beings. Animal life seems to fail after quitting Exmouth Island. It is possible that the snow may have covered many objects, but we noticed them even when heavier snow had fallen on Table Island.

If our unfortunate countrymen have "taken the floe and drifted with it," their case is hopeless. If we may judge from the aspect of the floes, where they had come into collision, or where they piled themselves in layers over forty feet on the north-western extremities of the islands, the feeling was disheartening. We noticed nothing equal to it in Melville Bay. Our only resource now is the close search of the coast line west and south-westerly, and north and easterly, for any traces of vessels or crews.

The tides in the parallel of $77^{\circ} 30'$ are regular east and west, the flood coming from the east, and that tide to the north appearing to prevail at a depth below the ordinary thickness of the floe, as we frequently noticed detached heavy masses, drawing some eight or ten feet, pressing rapidly and forcibly against the weather floe edge, and a stiff breeze. The boat was on one occasion so forced to windward, and stove.

Finding little chance of better weather, young ice forming, and our position being very precarious in such a frail boat against the glassy ice even now on the surface, we took advantage of the lull, and fortunately effected our escape, under great difficulty, to Table Island, the day following Exmouth Island, and forward, rejoining Commander Richards and party before leaving Village Point.

I cannot take leave of the little boat without expressing, in common with all her crew, our admiration of her most perfect adaptation for the service contemplated. She had, it is true, sundry severe injuries, but under Providence we escaped and returned safely. She has yet, I trust, much to earn before she is laid up with her "honours due."

From our examination of this northern sea, I now feel convinced that the so-termed Smith and Jones Sounds are connected immediately with this northern sea. If Franklin passed easterly through Lancaster Sound to try the opening of Jones or Smith outlets, we may yet fall upon his traces, as my own spring movements will carry me in that direction. Commander Pullen or Mr. M'Cormick may have already, in part, settled this important question; they were fully impressed by me with the importance of that course of search.

Our parties returned to the ship on the 8th of September, having been absent but sixteen days. It was satisfactory, at all events, to find that the opinion I had formed of the season had been fully borne out, the vessels being securely frozen in from the period we quitted.

So rapidly, indeed, did the ice appear to be uniting in one common floe, that immediate preparations were made for sending out autumnal parties with the depots for the southern spring search. The 13th of September was, indeed, fixed for starting, but gaps were noticed from our hill, (one of the highest in this vicinity,) which entirely stopped our proceedings.

Eventually, on the 22nd, I determined on endeavouring to search closely by the coast line between this and Cape Becher, as our rapid movement might have caused some little object to pass unnoticed—not probable.

This letter was intended to be deposited at the depot there, for Commander Pullen. Circumstances, now to be detailed, prevented our getting more than one third of the distance; our return we had to be grateful for. On the morning of the 22nd the same sledges and leading officers started on this service, unfortunately without a boat. Having reached and pitched our tents for the third night on an island about twelve miles to the southward of Mount Percy, or eighteen from the ship, the ice also betraying symptoms of great weakness, bad weather set in, broke up the ice, and cut us off from communication with the

main land for more than a week, reducing us to half allowance, and materially depressing the spirits of our men. Food we had in a walrus, which we killed; also plenty of fuel. But no one knew how long this imprisonment was to last, and the anxiety too often expressed for very low temperatures was uncommon in these cold regions. At length our wishes were in some measure realized; the comminuted floes froze once more into ice that bore, and we escaped to the main, skirting its edge, until we gained a safe landing at night, after sundry unpleasant escapes.

Further expeditions this season were cut off, not only by the severity of the cold, but by the sea maintaining a temperature which prevented heavy ice from forming.

I now (having retained this letter) proceed to add my observations on our late cruise. The subject is one which requires but little comment, viz., the visual discoveries of Penny. It is my wish to give him every credit, for he is entitled to much for what he has done. He has evinced a masterly and vigorous intellect beyond the usual powers of men not educated for surveying operations. Here, however, I cease.

It is probable that he saw beyond what he had any right to see, but our longitudes, &c., will evince not in the right direction. Therefore, although I disclaim any mathematical right he has, I willingly give him up all his possible radius of vision from any point which we can see, and from which, although never visited by him, we might be seen.

I have, therefore, throwing overboard the true bearing, as well as the possibility of his seeing our points of the termination of the Queen Channel, retained the names of Sir John and Lady Franklin as our turning points (notwithstanding an island intervenes, cutting off Cape Becher at about 12 miles to the southward). The names he has given may be scattered over the intermediate points.

On my return the ship was housed in, stores landed, and every preparation made for winter. As it had been intimated to me that magnetic observations on a complete scale during the winter would be important, an observatory was constructed on shore, and the declination magnetometer set up. I am happy to say that volunteers from both vessels are engaged on this delicate, but tedious, duty, and I trust that our records may be able to tell their own tale.

As my next dispatches will be sent by the spring travelling parties to meet Captain Kellett to the S.W., and Commander Pullen to the S.E., I will wait until the period for starting arrives, when I hope to be able to state our prospects and intentions more fully.

I have the honour to be Sir,

Your most obedient servant,

EDWARD BELCHER, Captain,
Commanding Arctic Expedition.

The Secretary of the Admiralty, London.

H.M.S. *North Star*, Aug. 12, 1853.

Dear Sir,—You having so gallantly volunteered to lead the party I propose sending on to Captain Sir E. Belcher, I gladly avail myself of the offer, and, as time is short and of consequence, I do not enter fully into detail, merely giving you a few remarks and a light equipment. You are already acquainted with my views as to the probable spot in which you will find the *Assistance*, and Point Hogarth being a principal point of rendezvous, make for it as speedily as possible, keeping as much as you can the eastern shore on board, as I know it is Sir Edward's intention to travel this way if he cannot get on with the ship; it is, therefore uncertain when he will leave.

There is nothing within a reasonable distance of the shore to prevent a light sledge getting on; keep a sharp look out, and I hardly think he can pass you. You have one of Halkett's large boats; I have therefore no fear for your success, for the ice is still heavy in Wellington Channel, and I hardly think it will break out this month; at all events, should you see any signs to suppose such likely to happen, make for the shore, and use your own discretion as to advance or retreat. The boat will track well in shore. Captain Inglefield, it is possible, may cross you, but it can be only when well to the northward. However, should such be the case, I advise your going on together, more especially should he have his large boat.

Provisions are *en cache* at Point Bowden and Point Rescue, but I trust you will reach the *Assistance* before you are out, and she will be approaching you. Pray show this to both Sir Edward and Captain Inglefield.

Wishing you God speed and every success,

I remain, yours faithfully,

W. J. S. PULLEN.

To Lieutenant Bellot.

H.M.S. *North Star*, Beechey Island, Aug. 20.

Sir,—It is my melancholy duty to inform you that two of my men, who left this ship with Lieutenant Bellot, have just returned with the sad intelligence of, I fear, his being drowned. The particulars of an examination of the two men I have entrusted to Lieutenant Cresswell, who was present at the time. It is in a rough shape; but being anxious that you should be made acquainted with the sad event, I deemed it necessary to dispatch him immediately.

The dispatches are safe, the men having brought them back. I have therefore to request your opinion as to whether, from the state of the ice in the channel, which Lieutenant Cresswell will inform you of, it is advisable to dispatch another party or not, immediately, to endeavour to communicate with Sir Edward Belcher.

I have, &c.,

W. J. S. PULLEN, Commander.

H.M.S. *North Star*, Beechey Island, Aug. 24.

Sir,—Commander Inglefield having yesterday informed me that it is his intention to leave as soon as the dispatches can possibly be got ready, I hasten to close my proceedings in a condensed form up to this day, forwarding to their Lordships a copy of the same, together with all dispatches received and every document likely to advance the service in which we are engaged.

I forwarded on the 12th inst., by Lieutenant Bellot, the French officer of the *Phoenix*, who had volunteered to conduct a party with dispatches on to your ship, full accounts of my proceedings since leaving you; but, unhappily, and which it is my melancholy duty to inform you, in the execution of which, by a sudden and unforeseen disruption of the ice in Wellington Channel, he has lost his life. The four men who accompanied him returned to the ship—two on the 20th, and the remaining two on the 21st, worn out with fatigue and exhaustion; their depositions were immediately taken, a copy of which I enclose, only remarking that, up to this time, and during their trying work, they have done their duty well, and speak of Lieutenant Bellot, although of a different nation, as an officer that they would gladly follow as their leader. All here feel his loss most acutely; he was well known to us when in the *Prince Albert*, and I consider it a most fortunate thing his volunteering to lead the party, for the only officer I had was away with Captain Inglefield, myself and Mr. Shellebear only having returned the previous night. I gave him no orders, merely a letter of remarks for his guidance (see enclosure), considering his experience sufficient under any circumstances. I therefore feel his loss most painfully, for he was a good and worthy young man, a credit to his profession, and, although a foreigner, has shown such zeal and energy in the cause we are engaged in that I should feel myself honoured in being associated with him in any way.

On the 21st inst., at ten minutes after midnight, the ice in the bay began to drive out at a rapid rate, taking us with it; the inshore piece, however, happily received a check, by which we held on, and have since maintained our position off Northumberland-house. The *Phoenix* and transport were also observed setting out of the Bay and off from Cape Riley, where they had been discharging provisions. The wind at the time was light from the eastward. At 2.15 a.m. of that morning both vessels got so far to the westward, and outside Beechey Island, that we lost sight of them from our deck. At 3.30 the steamer alone was seen again coming to the eastward, under steam, but was soon checked by a large floe-piece. I therefore concluded she had left the transport in a safe position, perhaps in Union Bay, which was clear. At noon she signaled "Transport is lost," and we could see from our mast-head that the steamer herself was completely surrounded with heavy ice, and their saws at work, as if endeavouring to cut a dock. In the evening the ice eased off, when she reached Cape Riley, took up a position, and commenced discharging. The next morning, the ice still opening enabled her to reach the fast ice in this Bay. (Wind northerly at the time).

I have discharged all my crew who wished to leave, also those unfit for Arctic service, together with Mr. M'Cormick, surgeon, and Alston, mate, who were desirous of returning to England.

An officer and two men were sent on the return of the first two men to relieve the others, and also examine the state of the ice in Wellington Channel, and to see if it was practicable, by boat or otherwise, to communicate with you. Look-outs also from the top of the Island have been kept, and such is their reports that not only myself, but Captain Inglefield, consider it imprudent to detach any more parties to endeavour to communicate.

I have acquainted Commander Inglefield with all your orders, wishes, and intentions, taking from him every available article of provision, &c., for travelling he could spare, and necessary for the expedition under your command.

From the long continuance of east and south-east winds, packing the ice up so much to the westward and on these shores, I fear the *Intrepid* will be very late, if able to reach at all. I cannot venture an opinion on the season at present, merely noting that it is a late one, and very different from last year. I confidently expect, and am prepared for, being driven out of this the first strong N.W. wind. However, I hope to be able to return again, even, if so, prior to your arrival; and, considering all these circumstances, a ship being here from England, the lateness of the season, &c., your opinion respecting this as a winter quarters coinciding with my own from actual experience, I shall, if you are not here by the 1st of September, if possible, remove to Gascoine Inlet.

I herewith enclose the copy of a notice set adrift on the 1st of August, and, in conclusion, regret to say that, having only so lately returned from travelling, and time being so short, I am unable, at present, to forward a separate report, as requested by you, relating to the stranding and recovery of the ship.

Three of the men of the late Lieutenant Bellot's party have also exchanged into the *Phanix*, so that we have now almost a new ship's company. I cannot wonder at so many leaving, for the severe and heavy work that has fallen to them from the position in which the ship was unfortunately placed, and the actual necessity of being obliged to keep them so continuously at it, induce me to think that, if I may so say it, they are disheartened, and do not like the thoughts of another winter. Had it not been for the good example shown by the executive officers, I hardly think we should have kept them up to the work. I cannot refrain from bringing to your favourable notice Mr. Elliott, the clerk in charge, whose duties, from every document connected with the expedition passing through this ship, having to be copied, have not only been heavy, but so continuous that he has been most unremittingly employed.

I have the honour to be, Sir, your obedient servant,

W. J. S. PULLEN, Commander.

To Captain Sir E. Belcher, C.B., H.M.S. *Assistance*,
commanding Arctic expedition.

Extract from Sir E. Belcher's Orders.

It is probable that the *Assistance* will be at or near Cape Becher during the month of August, therefore any dispatches which may arrive are to be forwarded to meet the ship by the east side of the Wellington Channel, calling at Point Hogarth, which will be a principal rendezvous; at all events, as the distance on the present position where the ship may be icebound is not more than four days' easy march, the officer should be instructed and provisioned to move on and to communicate with me. Indeed, this duty must be imperative, as the final determination of my movements must depend on the co-operation of the external division, should it be found necessary to abandon the vessel next season.

I left the ships well to the eastward of Dundas Isle, and the ice breaking away fast. Therefore, I think you will meet them well advanced towards us.

W. J. S. PULLEN.

Copy of Notice set adrift in a Cask.

Set afloat from H.M.S. *North Star*, lying in Erebus and Terror Bay, Beechey Island, on the 1st of August, 1853. The ice only opened out sufficiently this day. The *North Star* was driven on shore by ice and a heavy south-east gale last September, and only got off again on the 30th of June, by cutting, blasting, and clearing a space in the ice to heave her into. No intelligence yet of Sir E. Belcher in the Wellington Channel. The *Resolute* and her tender, the *Intrepid*, are at Dealy Isle, Melville Island. A party arrived here from the former on the 30th of May last, with the intelligence of the *Investigator* being in Mercy Bay, Baring Island, 167 miles from the *Resolute's* present winter-quarters. Baring Island is newly discovered land a continuation of Banks Land. The *Investigator* has been there since September, 1851. If not able to get through into Barrow Straits this season she is to be abandoned, and all hands come on to the *Resolute*. A party is now away from this ship on another visit to Cape Becher for intelligence. Any person picking this up, it is requested it may be forwarded to the Secretary of the Admiralty, London, with the date when and where found. All well.

W. J. S. PULLEN, Commander.

Another cask was set adrift with this; and last September one with two bottles, each containing a notice.

Statement of William Harvey, Boatswain's Mate, H.M.S. "North Star."

Left the ship on Friday night, the 12th of August, 1853, and encamped about three miles from Cape Innis.

Second Journey.—Encamped about three miles this side of Cape Bowden, on broken ice.

Third Journey—After leaving Cape Bowden on Sunday night we passed a crack about four feet wide, running across the channel; we

were then about three miles off shore. After crossing this crack kept on up channel.

On being asked as to the state of the ice, replied no doubts were entertained as to its safety; and M. Bellot expressed a wish to get up to a cape, which he said was Grinnell, cheering on the men, saying he wished to get in-shore to encamp, assisting with his track-belt himself. On arriving at the open water off Cape Grinnell (?) M. Bellot tried twice to land in the indiarubber boat, but in consequence of a strong breeze from S.E., could not succeed. William Harvey, boatswain's mate, and William Madden, A.B., then both got into the boat, and reached the shore, taking a line with them for a hauling line each way. By this means three loads were landed from the sledge; and the men on the ice were hauling the boat off a fourth time when Madden, who was up to his middle in water, with the hauling line in his hand, hailed M. Bellot, to say the ice was on the move, driving up and off shore. M. Bellot told him to let go the line, which he did. Those remaining on the ice with M. Bellot then ran the boat up to windward on the sledge, but, the ice being so fast in motion, before they could reach the wished-for point it had drifted considerably off the shore. I now went on the high land to watch, and saw them drifting up the channel, and off the land. I watched in this position for six hours, but lost sight of them after two hours. When I last saw them the men were standing by the sledge, and M. Bellot on the top of a hummock. They appeared to be on good solid ice. Wind at the time from S.E., blowing hard, and snowing. After waiting for six hours commenced our return, (all open water in the channel at this time,) walked round Griffin Bay with a little provisions, and reached Cape Bowden, where we remained to take some rest. We had not been there long when Madden called me, and said two men were coming. I jumped up immediately, and hailed them, asking where M. Bellot was; they replied that he was gone. On coming up to us Hook said M. Bellot was drowned. I asked him if he was sure he was; he said, "He was almost sure, because he saw his stick in the water, and could not see him." After this we made the best of our way on board, leaving them there.

William Madden, A.B., corroborates the above.

"Did you think the ice was dangerous?—Yes, I certainly did, Sir."

"Why, for fear of breaking through, or breaking off the land?—Both, Sir."

"Did you mention your fears to any one?—No, Sir."

He also states that they must have been drifted back and got on shore near the same place where the accident happened.

Statement of William Johnson, A.B., who was on the ice with Lieutenant Bellot.

We got the provisions on shore on Wednesday, the 17th. After we had done that there remained on the ice David Hook, A.B., Lieut. Bellot, and myself, having with us the sledge macintosh awning and

little boat. Commenced trying to draw the boat and sledge to the southward, but found the ice driving so fast; left the sledge and took the boat only, but the wind was so strong at the time that it blew the boat over and over. We then took the boat with us under shelter of a piece of ice, and M. Bellot and ourselves commenced cutting an ice-house with our knives for shelter. M. Bellot sat for half an hour in conversation with us, talking on the danger of our position. I told him I was not afraid, and that the American expedition were driven up and down this channel by the ice. He replied, "I know they were; and when the Lord protects us, not a hair of our heads shall be touched. I then asked M. Bellot what time it was? He said, "About a quarter past 8, a.m. (Thursday, the 18th); and then lashed up his books, and said he would go and see how the ice was driving. He had only been gone about four minutes when I went round the same hummock under which we were sheltered to look for him, but could not see him, and on returning to our shelter saw his stick on the opposite side of a crack, about five fathoms wide, and the ice all breaking up. I then called out, "Mr. Bellot!" but no answer (at this time blowing very heavy). After this I again searched round, but could see nothing of him. I believe that when he got from the shelter the wind blew him into the crack, and, his south-wester being tied down, he could not rise. Finding there was no hope of again seeing Lieutenant Bellot, I said to Hook, "I'm not afraid; I know the Lord will always sustain us." We commenced travelling, to try to get to Cape de Haven, or Port Phillips; and, when we got within two miles of Cape de Haven, could not get on shore, and returned for this side, endeavouring to get to the southward, as the ice was driving to the northward. We were that night and the following day in coming across, and came into the land on the eastern shore, a long way to the northward of the place where we were driven off. We got into the land at what Lieut. Bellot told us was Point Hogarth (?).

"How did you get on shore?—In drifting up the Straits towards the Polar Sea saw an iceberg lying close to the shore, and found it on the ground. Succeeded in getting on it, and remained for six hours. I said to David Hook, 'Don't be afraid, we must make a boat of a piece of ice.' Accordingly we got on to a piece passing, and I had a paddle belonging to the indiarubber boat." On being asked what became of the indiarubber boat, he replied, "It was left where Lieut. Bellot was lost." By this piece of drift ice we managed to reach the shore, and then proceeded to where the accident happened. Reached it on Friday. Could not find our shipmates, or any provisions. Went on for Cape Bowden, and reached it on Friday night. Found Harvey and Madden there. They told us they were going on to the ship with the mail-bag. We rested that night in a miserable state, and in the morning got some bread and pemmican out of the *caché*, and after we had refreshed ourselves proceeded to the ship.

"What sort of travelling was it?—Very indifferent with respect to water on the floe."

(States that they were saying it would be better travelling in the

middle of the channel; and Lieut. Bellot, hearing this, said. "It was Captain Pullen's orders to keep close to the starboard shore, generally keeping within two miles").

David Hook, A.B., corroborates the statement of Johnson.

"What sort of travelling had you on your way up?—Very bad; so much deep water on the ice.

"Did you feel alarmed on your way up?—No, not in the least afraid; I was very glad I was going.

"Do you think you could have found a better route?—No, Sir."

"Do you think there is any hope of Lieut. Bellot being alive?—No, Sir, I am sure he cannot be, for when we missed him we could see the shore, distant then about four miles."

W. Johnson, A.B., further states, Lieut. Bellot made a remark to him a short time before he was lost, saying nothing made him more happy than to think that he was not on shore, for, knowing his duty as an officer, he would see the last danger, adding that he would rather die here than be on shore to be saved.

Commander Pullen's Remarks.—I think I may positively say, that I can place every confidence in these men's statements, particularly Johnson's, who, I am happy to say, not only does his duty well, but is a moral and good man. The distances which I have placed queries against I consider they are mistaken in, which cannot be wondered at, from their anxiety, fatigue, and working for their lives; for the distance between Point Hogarth and Cape Bowden is too great for any man to travel in so short a space of time. Their going across the channel to De Haven I do not doubt, for that place they knew well, having been there before, and close to it they knew was my *caché* of provisions.

W. J. S. PULLEN, Commander.

With Mr. Barrow's permission we insert the following very interesting (*but quite a private*) letter which he has received from Captain Kellett.

H.M.S. *Resolute*, Melville Island,
12th April, (last date 2nd May,) 1853.

On the night of the 14th of August all hands were assembled on the floe, where we had prayers. Speechifying and screeching succeeded, all, I suppose, in good order and as it should be. *Assistance*, in tow of *Pioneer*, slipped immediately after, and was soon out of sight up Wellington Channel. (M'Clintock, who was sent up it the night before, found open water for at least twenty-five miles). Next day, the 15th, at 2h. p.m., having taken all I could get from *North Star*, I left, in tow of *Intrepid*, for Cape Hotham. We found the channel, in crossing it, exactly as Parry did; perfectly clear as far as we could see. *Assistance* or *Pioneer* not in sight from our mast-head.

16th.—At Cape Hotham we were stopped for some hours. Early in the morning the ice broke up suddenly, leaving us adrift, and opening a narrow lead close in shore. At this point we had five cairns in sight at one time. Landed, and found two casks of bread in excellent condition. Left a whale-boat there, complete. In following the lead along the land, we were frequently in very shoal water. Got ashore once; towed off by *Intrepid*. Wishing to place a dépôt at Assistance Harbour, we continued along the land, although there was water outside. This nearly proved fatal to us; for on nearing the eastern point of the Harbour, we got suddenly into shoal water, and grounded nearly at the top of high water. Flood setting to the westward rapidly. Tide began to fall; leaving us hard and fast. Got deck cargo on board *Intrepid* and landed my dépôt. I will endeavour to describe our position, as I think few ships have ever had so severe a trial, and escaped.

We were resting on our port bilge, on sandy bottom, listing so as to render it difficult to walk the deck. Head in for the shore, a quarter of a mile off, with seven feet water under our stern. The only ice near us was a large floe on western side of Assistance Bay, (apparently fast,) and the ice outside us, to which *Intrepid* was made fast. Laid an anchor out, hove tort on it, and, at 4h. p.m., went below to my dinner, considering ourselves quite safe. I had not been down ten minutes before the officer of the watch came down to tell me that the floe in Assistance Bay was adrift and coming down on us fast. We could do nothing but watch its effects. Turned the hands up, fearing it might overrun us, not having any escape under our bottom. Some thought it would take us with it off the ground; others, that we should bring it up: divers opinions. Down it came, took the ship from the mainmast aft. She gradually righted, remained upright for a few seconds, and was then thrown with great violence over on her starboard bilge. The masts bent like a reed; you might have sheep-shanked the rigging. The ice continued to grind past us, and mounted, several times, higher than our gunnel. All hands on the floe, dragging the pressed up ice from our side and blasting it with heavy charges. At length we were a good deal relieved, having been slewed more than 90° by the heavy pressure. The ice now took our bow and passed quietly along our side. As the water flowed, the ice went off. *Intrepid* came in and took us in tow. At midnight, after a good deal of heaving and tow, we went off by being relieved of sixty feet of our false keel, forty of which we picked up.

We now proceeded merrily towards Griffith Island, boring through loose but heavy ice; the craft getting many heavy cracks. On the morning of the 17th August, sent M'Clintock and Mechem on shore on S.W. end of Griffith Island, to get a view of the ice. Deposited a record there at an old cairn. Reached close up to Lowther Island by midnight; wind strong and squally. Looked round the south end of Lowther and made fast, on its western face, to a compact and old floe, extending in the direction of Youngs Island. This floe was, nevertheless, in motion, and at 1h. p.m., on the 18th, we broke adrift

from it. After having drifted easterly with it about three miles, ran down under the lee of Lowther, and worked about in a pool of water. This we continued to do for a couple of days, the men perfectly fagged out with constant tacking, &c. Fortunately there was a piece of land floe on the eastern side of the Island; to this I made fast, sending an ice quarter-master, a couple of men, and a tent to keep watch on the movements of the ice. I went in *Intrepid* to follow the pack, hoping it might lead me in the same direction that Sir E. Parry went; but we found it impenetrable and unbroken, after we got within about three miles of Youngs Island. Our only hope now was in the direction of Cornwallis Island. The winds continued strong from north and N.W.; carrying or driving to the eastward vast floes. The western side of Lowther displayed one of the most awfully grand sights that could be witnessed, and showed what would be the effect of these immense bodies of ice in motion. These six feet floes overran one another to a height of thirty or forty feet. Large fragments, of many tons, some on end, others just balanced, were forced up the beach many yards. A ship would be nothing more than an egg if caught in such a position. Water to be seen under Cornwallis Island, but no getting into it; and I almost made my mind up that Lowther would be our winter quarters, for easterly I did not intend to go. The 23rd passed, (the very day Parry left Beechey Island in 1819,) and no alteration. On the morning of the 28th, accompanied by M'Clintock and Mecham, I went to the top of the Island. There was an apparent lead into the water under Cornwallis Island, with the exception of a short nip. We cast off and made preparations to assail this gentleman with fire, &c. It was not necessary; for, aided by a fresh and fair breeze, we bored through it at the expense of some heavy blows. I suppose there is some limit to what these ships will stand, but we do not know it. At 5h. p.m., we got into the open water about eight miles west of Griffith Island. In passing Griffith on the 17th, there was fast ice between it and Cape Martyn: now there was not a bit to be seen. Here we picked up a strong north wind, with which we proceeded westerly, passing between Brown and Sommerville, where we experienced a heavy swell: a sure indication of open water.

We now went merrily along the land, and reached Point Cockburn at 2h. p.m. on the 29th, where I landed a depôt, and just got past the point before the ice set on it. I had an anxious night off this point, wind heading us off, and very strong. In the intervals of clear between the snow showers could see the hummocks of the Point, with a strong ice blink north and south of us. We had three hours night there. The morning cleared up and became calm. Towing westerly through a fine open lead of five miles width, passing between hummocks I thought aground on the shoal described by Parry. At 4h. a.m., 31st August, reached the south point of Byam Martin Island; where we were stopped. Made fast. Cast off to keep in open water. Made my mind up to cut into the fast floe (extending from Graham Moore Bay to Byam Martin) near some hummocks on east point of the Island. Ran down to look at the position and worked back again, as there were indications of a northerly wind. At 7h. a.m. on the 1st Septem-

ber the wind shifted to N.W.; ice eased off Point Gilman. We took advantage of it and, after a sharp beat up the west side of the Island, got into a fine open lead, due west, sailing our course. And at 3h. 40m. p.m., we sighted Melville Island; M'Clintock making the signal "I wish you joy." On the 2nd, at 3h. a.m., landed a depôt at Point Griffith, and proceeded, working along the land; wind too strong for towing. Parry's description of this coast is so faithful, that we could recognise if not the same hummocks others certainly in their positions. About 3h. p.m., we were again in tow, as the ice was very close on Point Ross, and evidently closing as the wind lightened. All glasses were at work. Soon, a herd of ten musk oxen were seen on west side of Beverly Inlet. We passed this Inlet, and were stopped about five miles west of Point Palmer; where we made fast. Here, again, I thought we had arrived at the end of our navigation. Went in *Intrepid* to examine Beverly Inlet. Got on shore on a spit running off Point Palmer. Went off in an hour. Found Skene Bay well protected and well adapted for winter quarters; five fathoms within fifty fathoms of the beach. Here I fully determined to place the ship if the ice did not open in a day or two. Young ice very strong. Two musk oxen shot in the morning, and, after I returned, a herd of eight were seen. Permission was given to go after them; they were all shot, bulls, cows, and calves. All Bridport Inlet appeared to be clear of ice, and right up to Cape Bounty; but no means of getting into it.

We were detained in this position until noon of the 6th, when the ice streamed off, leaving us a passage of half a mile into the water in Bridport Inlet. Passed Cape Bounty at 5h. p.m., and, after a very unpleasant anxious night, working between pack and land ice, made fast, at 5h. a.m., 7th September to land floe, off Winter Harbour, four miles from the sandstone. The wind was so strong and the floe edge breaking away so fast, that we had great difficulty in holding on. Nevertheless, I managed, in the evening, to land a small ship depôt and depôts for my travelling parties in the spring. Finding that I could not winter there in safety, on the morning of the 8th, I proceeded easterly, intending to go into Skene Bay. At 9h. p.m. we reached and made fast in our old position, five miles west of it, having been a good deal impeded by sludge and young ice; a calm for a few hours would have fixed us anywhere.

9th September.—Proceeded in tow for Skene. To my great disappointment, found it perfectly blocked with ice. Having no time to lose, we again turned our heads westerly and, very fortunately, just scraped through into Bridport Bay. The whole of this bay was clear, and north of Dealy Island to the mouth of the Inlet. The position north of the Island would have been safe, but I feared I might not break out soon in the summer. Finding sufficient water alongside an old floe running from Dealy Island easterly to the main, I determined to cut into it, and make it our resting place for the winter. Both vessels cut in 150 yards; heads to the N.N.W. (true), and separated about 100 yards; our distance from Dealy Island 940 yards. On the 11th we were frozen in.

On the 10th, M'Clintock started with a cart and three days' provi-

sions to reconnoitre the route across the land, as we proposed, if practicable, to search the north west of the island. He returned, and left again in two days with a depôt; returned again in fourteen. Started again and returned in eighteen days, having deposited at Point Nias, in Hecla and Griper Bay, more than a ton of provisions and stores with a cart. This was a most arduous piece of work, well and cleverly performed, without accident; his people looking better than when they started. Trusting a good deal to Providence, I commenced landing deck cargo, boats, and stripping ship and lashing spars for housing.

Considering we were well fast, and that the ice was strong enough along the coast to bear sledge travelling, I despatched five sledges to the westward, to place there depôts for Spring operations, on the morning of the 22nd September, under the following officers, and on the following routes.

Lieutenant Mecham, ten man sledge, Mr. Nares, Mate, six man sledge, auxiliary.—South-west Melville; to cross the land at Winter Harbour.

Lieutenant Pim, seven man sledge.—To place depôt at Cape Dundas for search of west Banks Land.

Lieutenant Hamilton, seven man sledge.—To place depôt at Point Hay, for search of east Banks Land.

M. DeBray, (Ensign de Vaisseau,) seven man sledge, auxiliary.—To Lieutenants Pim and Hamilton.

With considerable labour in crossing the land, Lieutenant Mecham placed his depôt at Point Hoppner; bringing back his party all well after an absence of twenty-five days.

Lieutenant Pim placed his at Cape Providence, not being able to get farther west, the shore being clear of ice.

Lieutenant Hamilton placed his at Cape Hay. His sledge broke in, and was only saved by the activity of his crew; a narrow escape from a very serious accident. All his bedding and clothing got wet and were, of course, frozen as hard as steel. Yet still his crew nobly preferred proceeding to returning leaving their work unfinished; all came back with a few slight nips.

Lieutenant Mecham, on his return through Winter Harbour, visited the sandstone, and found on it a record left by Captain M'Clure in May, 1852, with a chart of his discoveries. I think you will read with interest his despatches, and will exclaim, as I did, when you come to this paragraph, "Any attempt to send succour would only be to increase the evil," *what a noble fellow!* As you may suppose, I was annoyed at not finding this record myself when at Winter Harbour. Not that I could have done anything. The strait was too much broken up to attempt to communicate with sledges; no boat navigation practicable at that season, on account of young ice; and not open enough for ships. It is beautiful to see how exactly M'Clure has completed all that was left by Austin and Rae, and how exactly their work joins.

Osborne and Mr. Winnyat both commenced their return on the same day, and only separated about twenty miles.

M'Clure has actually discovered the North-West Passage Something in the annals of our country; achieved by the industrious perse-

verance of one of her own officers, who I hope will be considered worthy, and receive marks of high distinction. You should write this circumstance in red letter in your record.

To this expedition is still left a fine field. I hope we may be able to make *our* efforts too worthy of a red letter record.

This concludes our summer and autumn campaign.

We commenced our winter by losing suddenly on the 20th October Thomas Mobley, a marine, a most excellent man; his complaint, disease of the heart.

10th November. In coming from *Intrepid*, my attention was arrested by a noise like the rushing of strong winds in squalls, which continued all night and part of next day; the wind moderate at S.W., with thick weather. On clearing up, we were astounded to find that the noise was occasioned by the crushing of the ice a short half mile astern of us. When the old floe came in contact with the young floe (not more than a foot thick) it broke it in pieces of three feet square, and raised them in a wall of fifteen to twenty feet. The nip extended east and west about two miles. From the summit of Dealy Island, it put me in mind of some of the very much enclosed parts of Ireland,* minus the emerald green.

We now (10th November) completed our housing in. Put snow nine inches thick on the decks, and macadamized it with a mixture of snow, gravel, and water; which made a solid rough coating all over. With blocks of snow, we built a wall round the ship, four feet from her side, which was filled in with snow as high as her decks.

Our school was organized under the Master and Purser.

Our first theatrical performance took place on 23rd November. I never saw anything better done; dresses magnificent. It was an affair of a month's preparation, and a nine days wonder after.

On the 12th December, we unfortunately lost, from consumption, a most excellent man belonging to *Intrepid*, named George Drover. In the early part of the winter we had a few very severe pulmonary cases; very similar to that described by Middleton in Hudson Bay, and cured by the same treatment.

22nd Dec. We had a *soirée fantastique*, with tricks in legerdemain, and songs, on board *Intrepid*. All in great glee; not a man on the sick list.

Our second and last play came off on the 1st February. The men performing "Raising the Wind," and the officers "King Glumpus," as after piece; the latter took amazingly.

A second affair of Wizard of the North, with magic lantern, on board *Intrepid*, concluded our theatricals. We really had not time for more. Our whole time engrossed with preparations for travelling; a perfect mania. Nothing spoken of but reduction of constant weights. Some reduced their medicine chests; M'Clintock his pickaxe, he even found out that the preserved meat tins held, instead of four pounds, at which they are issued, nearly four pounds and a half.

In consequence of M'Clure having done all south of us, my parties required re-organizing. The following is the programme:—

* The stone walls.

South-west Melville.—Lieutenant Mechem, auxiliary Nares, 14 men, 156 provisions for 8 men.

North-west Melville.—Commander M'Clintock, auxiliary DeBray, 18 men, 146 provisions for 10 men.

Lieutenant Hamilton and Roche, with their crews of 14 men, to place a depôt for me on north shore, to search N.E. Sabine Island.

Hamilton, when he returns, to take Byam Martin Channel and rendezvous; and Mr. Roche the Lame Ducks to Beechey Island depôt, with Domville's news from Banks Land, and to remain there.

Lieutenant Pim and Doctor Domville.—Early party for Banks Land (Harbour of Mercy), 9 men and 6 dogs.

On the morning of the 10th of March calm and fine, temperature very low—50. Lieutenant Pim and Domville, nine men and six dogs, assisted by Mr. Roche and ten men, left for Banks Land. Three miles from the ship Pim's sledge broke down; sent him on with another, which also proving weak, he sent the dogs back for another. He encamped within about eight miles of the ship. A furious northerly gale came on during the night, which detained them in their tents for four days. This was the earliest, and with the lowest temperature that travelling has been attempted in these regions before. I communicated with them on the fourth day; all well. No accident of consequence; a nipped finger, face, or ear the greatest. On the 14th they made another start, assisted as far as Point Hearne by a 10-man sledge. Dogs doing wonders. One man sent back; another went on in his place. The weather continuing beautifully fine and mild; temperature zero.

On Monday, 4th April, we made our grand start, in two divisions. Mechem, with a fair wind, westerly. Commander M'Clintock, Hamilton, DeBray, Roche, and myself, northerly, with five sledges and thirty-nine men. Master, purser, boatswain, and carpenter, with five men who could not travel, were left on board *Resolute*. Master, assistant surgeon, two engineers, and four men who could not travel, were left on board *Intrepid*. On Sunday I read prayers, and made a short address to the men, which they appeared to understand. I hoped they would leave little for any one to do coming after us, and that they would render the expedition (by their exertions) so remarkable, that every person would feel proud in having belonged to it. We will do our best, was their response, and they will I am convinced. As there was not many to cheer us, we cheered one another and parted. I accompanied M'Clintock and my depot sledges out for three days and a half, to assist them through their greatest difficulties. This brought us to the top of the island, and clear of the heavy dragging ice, and out of ravines. There I left them, as they were obliged to encamp in a strong North wind. I reached the ship on the seventh day, having been confined to the tent for two in a heavy gale from North. The number of men we had together greatly facilitated our journey. In some of the passes out of the ravines I was obliged to clap all hands (39 men) on to one sledge. This made the work light and rapid, but even with this number we had to 1, 2, 3 haul frequently.

I have been a long time at sea, and seen various trying services, but

never have seen (for men) such labour, and such misery after. No amount of money is an equivalent. The travelling parties ought to have some honorary and distinctive mark; the captain of the sledge something better than the others. Men require much more heart and stamina to undertake an extended travelling party than to go into action. The travellers have their enemy chilling them to the very heart, and paralyzing their limbs; the others the very contrary. I should like to see the travelling men get an Arctic medal. I would gladly give £50 towards it, and I am sure every Arctic officer would be anxious to subscribe, but to be of value it ought to be presented by the authority of Her Majesty.*

This concludes my narrative until Domville's return, which I look for anxiously every hour. In the mean time I shall add any remark I may think of.

Our provisions are all of the best quality. We by some mistake sailed rather short of preserved meats. It was supposed *North Star* had them, but no, they went back to Deptford.

Game was plentiful in the autumn. Musk oxen remain with us all the winter; one was shot in March. You cannot fancy a man wishing for a good tough beefsteak, but after preserved meats there is a great pleasure in getting between your teeth something to bite. The venison eaters of England ought to come here for it; nothing can exceed a haunch of a good reindeer buck, tender, and highly flavoured. Hares were shot in winter, and four or five ptarmigan, with full crops and in good condition, a fine cock weighing two pounds and a half.

Our winter has been comparatively a very cold one, with a great deal of wind. For several days together we had the thermometer down to —50, for some hours —57, and for a considerable time the mercury frozen.

17th April. Lieutenant Hamilton returned, having left M'Clintock fairly started on the floe to the north-west; all his party in high spirits. The forty miles over the land takes more out of the men than five times that distance on the floe, particularly if they have preserved meats in lieu of pemmican. With preserved meats they can not do half the work, and fall away to thread papers, whereas with pemmican they can work well, and it keeps their stamina up.

19TH APRIL, 1853. This is really a red letter day in my voyage, and shall be kept as a holiday by my heirs and successors for ever. At 9 o'clock of this day our look-out man made the signal for a party coming in from the westward. All went out to meet them and assist them in. A second party was then seen. Doctor Domville² was the first person I met. I cannot describe to you my feelings when he told me that *Captain M'Clure was amongst the next party*. I was not long in reaching him, and giving him many hearty shakes. No purer were ever given by two men in the world.

M'Clure looks well, but is very hungry. His description of Pim's

* The proposal of an Arctic medal is no new idea, having been repeatedly talked of. We should be glad to see it carried out.

reaching the Harbour of Mercy would have been a fine subject for the pen of Captain Marryatt, were he alive.

M'Clure and his First Lieutenant were walking on the floe. Seeing a person coming very fast towards them, they supposed he was chased by a bear, or had seen a bear. Walked towards him. On getting within a hundred yards they could see from his proportions that he was not one of them. Pim began to screech and throw up his hands, his face as black as your hat. This brought the captain and lieutenant to a stand, as they could not hear sufficiently to make out his language. He was a considerable way ahead of his sledge—a solitary man, and that man as black as Old Nick. M'Clure says he would have turned and run if he had seen a tail, or a cloven foot. At length Pim reached the party, quite beside himself also. Stammered out, on M'Clure asking him, who are you, and where are you come from? "Lieutenant Pim—*Herald*—Captain Kellett." This was more inexplicable to M'Clure, as I was the last person he shook hands with in Behring Strait. He at length found that the solitary stranger was a true Englishman; an angel of light he says. He soon was seen from the ship. They had only one hatchway open. The crew were fairly jammed there in their endeavour to get up, to see—they did not know what. The sick jumped out of their hammocks, and the crew forgot their despondency; in fact, all was changed on board *Investigator*. One man had unfortunately died, by accidentally poisoning himself, the morning of Pim's reaching here. On the 15th of April M'Clure had thirty men and three officers fully prepared to leave for the depot at Point Spencer. What a disappointment it would have been to them to find the miserable *Mary* yacht and four or five casks of provisions, instead of a fine large depot. Another party of seven were to have gone by M'Kenzie, with a request to the Admiralty to send out a ship to meet him at Port Leopold in 1854. The thirty men are on their way over to me now. I shall, if possible, send them on to Beechey Island, with about ten men of my own crew. To be taken home the first opportunity.

The seven remain by the ship. *Investigator* will now have thirty-five men, officers, and all. I must stay here myself another winter, if *Investigator* does not break out this year. But *Intrepid* will go, please God, direct to England, with half *Investigator's* crew, and the portion of mine sent to Beechey Island.

She must be sent back to me again in 1854, with a transport full of provisions. Solids, preserved meats, vegetables, pemmican, (a large quantity, some tons, ten at least,) blankets, mits, wigs, mocassins, &c. *Intrepid*, with M'Clintock her captain. The *Lady Franklin* and *Sophia*,* filled with grub and fuel. I feel satisfied with a little assistance from a large steamer (*Desperate*) beyond the Orkneys, and starting on the 10th of June the *Lady Franklin* and *Sophia* might be in England again by the same date in October, having deposited their provisions at Beechey Island. Failing getting to Beechey, they would be certain to reach Port Dundas, on North side of Straits. *North*

* These two vessels were sold to Captain Penny, who has proceeded with them to Cumberland Straits.

Star is really no depot, if Port Leopold was not so near her, having not a single ounce more than three years for herself. Provisions must be sent to Beechey Island next year, or we shall run short.

2nd May. *Investigator's* second party, consisting of Lieutenant Cresswell, Wynniatt, Mr. Piers, and Mr. Miertsching, arrived, bringing two men on their sledge. They made an extraordinary passage across, for men in their state. The greater part of them are affected with scurvy, but are rapidly improving.

I have given M'Clure, who has been with me for fourteen days, orders to desert his ship, if the medical officers are of opinion they cannot stand another winter, or if there are not twenty volunteers to remain. M'Clure is in capital health. I cannot explain to you my feelings on shaking hands with him. You will find from his dispatch his, on Pim's meeting him on the floe. I thought I had the best officers the navy could produce in the *Herald*. My present are certainly their equals. Nothing can exceed their zeal. My only duty has been to restrain within proper limits, and to direct it. I hope his Grace will not have forgotten my request on his leaving the *Resolute*, the promotion of Lieut. Trollope,* who has himself so well served his country, and whose relations have done the same. Mr. Richards, my clerk in charge, I hope may be thought of; he is an old and worthy officer. M'Clintock has really been my second, but he will have to come again for me.

I intended to have written to Colonel Colquhoun, giving an account of our experiments with powder in blasting the ice. With light ice, three feet thick, I found small charges of four or five pounds most effective. The 20lbs. charge simply blows out a hole, but with the heavy polar ice of 72 feet thick, M'Clure used as much as 250lb. in one charge, and with great success. He recollected, when in great difficulty, the Colonel telling him, use 100lbs. This saved his ship. He called, therefore, the point near him Colquhoun Point.

Notenda.—Gimcracks on board *Resolute*: Mr. somebody's machine for driving pure air into the ship; Mr. — galvanic batteries; balloons; kites. We have too large a proportion of sails; not enough leather for soles. Sleeping bags should be made up in bales ready made. A larger proportion of stearine should be supplied. Mr. Dale's cooking machines have been very carelessly made.

I must now conclude, as my party is ready for a start: beautiful weather, temperature +6. "May your shadow never be less," is the wish of your faithful friend,

HENRY KELLETT.

* This officer has been promoted, and appointed to the command of the *Rattlesnake*, now employed in active service in Behring Straits.

[The general interest which prevails respecting our absent countrymen in the Arctic Regions has induced us to fill this number with their proceedings, to the exclusion of all other matter. We shall make up for this in our December number, besides concluding our Arctic Papers on the N.W. Passage.]

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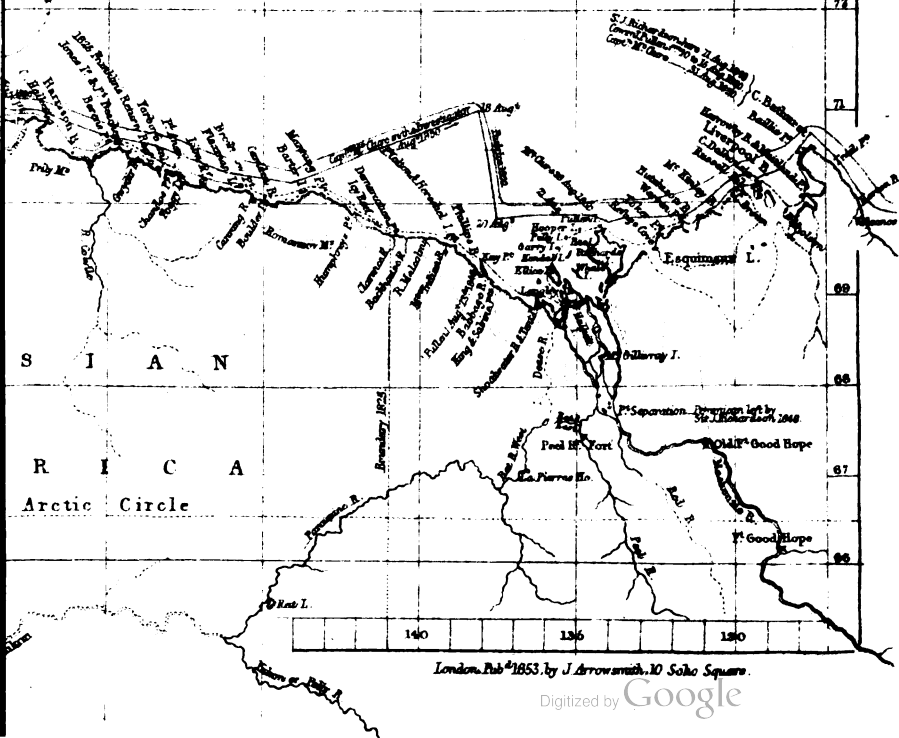
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Capt. Collinson / M.S. Endeavour
1818-1819



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THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

DECEMBER, 1853.

THE NORTH-WEST PASSAGE.—*Brief Summary of Captain M'Clure's Passage in the "Investigator" from Behring Strait to the Bay of Mercy, Banks Land.*

[Having completed the dispatches of Sir Edward Belcher and Captain Inglefield we now proceed with those of Captain M'Clure which, as containing the narrative of the first officer who has made the N.W. Passage to the N.E., we give without any abridgement whatever.]

Abstract of the proceedings of her Britannic Majesty's discovery ship *Investigator* since parting company with the *Herald*, upon the 31st of July, 1850, off Cape Lisburne:—

At 5.50 a.m., Aug. 2nd, in lat. $72^{\circ} 1' N.$, long. $166^{\circ} 12' W.$, made the ice, which did not appear heavy; but upon entering it a short distance was undeceived and ran out.

5th.—In running along the pack edge, endeavouring to find an opening, exchanged numbers with the *Plover*, and at 11 a.m. made a low shingle beach to the eastward of Wainwright Inlet, and at midnight rounded Point Barrow in three and one-third fathoms, but, from the foggy state of the weather, did not see it.

8th.—1.45 a.m., being off Point Drew, sent Mr. Court, second-master, and Mr. Miertsching, interpreter, to deposit a notice of our having passed, who met some Esquimaux that had arrived three days previous. These trade with the Russians, and were very friendly, therefore sent a letter with the chance of it reaching the Admiralty. We also heard from them that last year three boats had passed to the eastward with white men and Indians, which was, most probably, Lieutenant Pullen. In the evening erected a cairn and buried another notice at Point Pitt.

9th.—Passed the Colville, about forty miles from its entrance, in three fathoms and a half.

11th.—Deposited a notice upon Jones Island, which was thickly strewed with driftwood. In the forenoon two baidars, containing twenty-four natives, came alongside. The chief possessed a gun, with "Barnet, 1840," on the lock, obtained from the Russians. Bartered tobacco for salmon and ducks. In the afternoon communicated with another party, who were exceedingly intelligent and clean. Sent dispatches for the Admiralty via Colville, and, from what the interpreter states, believe they will arrive.

12th.—Several baidars came alongside. Received fish and ducks for presents of beads and tobacco. These are adroit pilferers.

14th.—Ran upon a shoal eight miles north of Yarrowborough Inlet, having, during the last two days, narrowly escaped several of these dangerous banks, which are very little above the water, and hidden from view by the ice. Hove off with the stream anchor, but unfortunately upset a whale-boat and lost eleven casks of beef, having to carry sail to prevent being set again on shore.

15th.—Found it impossible to get two miles in any direction, the ice having closed from the northward, resting upon the shoals in that direction, and to the southward, the low banks which we grounded upon yesterday. Anchored to await some favourable change.

16th.—Ice to the northward of the shoals slightly eased leaving about 150 yards of open water. Weighed and warped through two cables' length of the ice to get into it, which occupied six hours' of hard labour, so heavy was the pack.

17th.—At noon the weather, which had been foggy, cleared with a breeze from N.E.; made sail through heavy sailing ice, occasionally striking violently; navigation along this coast very dangerous, the sand-banks being low and numerous. Lat. $70^{\circ} 30' N.$, long. $148^{\circ} 4' W.$

21st.—Made the Pelly Islands off the Mackenzie. Since the 17th have encountered very heavy ice; ran ninety miles into a bight, which brought us to the solid pack; fortunately we were enabled to run out of it before it closed.

24th.—Observing some huts a little to the westward of Point Warren, sent dispatches for the Admiralty, with the hopes of their being forwarded by the Hudson's Bay Company; this tribe, however, have no traffic with them, but barter with others further west that trade with the Colville, giving as their reason that the Hudson's Bay Company had given the Indians water which had killed many of them, and that they did not wish to have any: they appear savage and warlike, and are at enmity with their neighbours. Brought the dispatches back.

30th.—Observing a post erected on the beach near Point Maitland, in Liverpool Bay, sent to examine it, and deposit a notice of our passing. Found it was an Esquimaux mark, who apparently had recently quitted it, there being several *cachés* containing birds and fish. In the afternoon, while approaching Cape Bathurst, observed Esquimaux on the shore. Upon communicating with them found that they belonged to a tribe now at Cape Bathurst, who were catching

whales, and the same who had seen Sir J. Richardson last year. In the evening, being thick, and getting into three and a half fathoms, anchored between Baillie Islands and the main land.

31st.—Proceeded to Cape Bathurst. Tribe consisted of 300, very friendly; would go south in three weeks; gave them dispatches for the Admiralty, a gun and ammunition to the chief, and many presents among themselves, and, judging from their intelligence and cleanly appearance, have great expectation of their reaching.

Sept. 1st.—Off Cape Bathurst; many natives came on board, and being nearly calm, remained until the evening, when a breeze springing up, we took our final leave of the Esquimaux upon the American coast, fully convinced that neither the ships nor any of the crews of Sir John Franklin's expedition have ever reached their shores. They appear a quiet inoffensive people (with the exception of those at Point Warren, which the Cape Bathurst tribe have no dealings with) and would assist any white people thrown among them.

The whole of this coast is shallow, but, with the lead, may be safely navigated, the soundings being very regular. The shoals terminate about thirty miles to the eastward of Yarrowburgh Inlet, and water, varying in breadth from one mile to forty, may be calculated upon along shore, between the beginning of August and 10th of September, according to the winds more or less ice encumbered, but the natives state that every year the ice opens from the shore. We found the prevailing winds from E.S.E. to N.E.

6th.—At 11.30 a.m., being to the northward of Cape Parry, remarked high land from N.b.E. to E.N.E.

7th.—At 9.30 a.m. landed and took possession of the discovery, and named it Baring Island. The land is bold upon the southern side, being upwards of 1000 feet in height, its northern being Banks Land. Erected a signal-pole with black ball, and left a notice in lat. $71^{\circ} 8' N.$, long. $122^{\circ} 48' W.$

9th.—Observed land N.N.E. Named it Prince Albert Land, which is continuous with Wollaston and Victoria Land, and extends north to lat. $73^{\circ} 21' N.$, long. $112^{\circ} 48' W.$

11th.—Ship beset, lat. $72^{\circ} 52'$, long. $117^{\circ} 3' W.$, but ice in motion.

Oct. 8th.—Since the 11th of last month have been drifting in the pack—narrowly escaped destruction several times—until, with a heavy nip, at 3 a.m. this day, which listed the ship 34 degrees, we were firmly fixed for the space of nine months in lat. $72^{\circ} 47'$, long. $117^{\circ} 34'$.

10th.—Took possession of Prince Albert Land, distant four miles.

13th.—And to-day of the Princess Royal Isles, lying in the centre of the Prince of Wales Strait, distant four miles from the ship. There is erected a large cairn, pole, and ball upon its summit, in lat. $72^{\circ} 46' N.$, long. $117^{\circ} 44' 10' W.$, and have deposited three months' provisions for sixty-six men, besides leaving a boat and some ammunition.

21st.—The Captain, Mr. Court, and party, started to trace the Strait towards the north-east.

26th.—Discovered the entrance into Barrow Strait in lat. $73^{\circ} 30' N.$, long. $114^{\circ} 14' W.$, which establishes the existence of a north-west passage.

30th.—Five musk oxen shot upon 'Prince Albert' Land, which terminated our operations in 1850.

April 18th, 1851.—This day dispatched three travelling parties to search the coast line; under Lieutenant Haswell, to the south-east, towards Wollaston Land, Lieutenant Cresswell in the direction of Banks Land, and Mr. Wynniatt, Mate, to the north-east; who respectively reached the position as noted below,* and traced the coast as per accompanying chart.

June 2nd.—Captain and Mr. Miertsching (the interpreter) communicated with the Esquimaux upon Prince Albert Land, about sixty miles south of our position, who had previously been met by Lieutenant Haswell. They traced the coast line as marked in the chart, and state that there are many of their tribes inhabiting the land towards the south; but that they know of none to the northward. They are a kind, simple people, and have never before seen the white man, at whom they were evidently alarmed.

July 14th.—Ice opened without any pressure, and the vessel was again fairly afloat, but so surrounded with it, that we only drifted with the pack, having been able to use our sails but twice, and then only for a few hours, up to August the 14th, when we attained our furthest northern position in Prince of Wales Strait, lat. $73^{\circ} 14' 19''$, long. $115^{\circ} 32' 30''$ W.

Aug. 16th.—Finding our passage into Barrow Strait obstructed by north-east winds setting large masses of ice to the southward, which had drifted the ship fifteen miles in that direction during the last twelve hours, bore up to run to the southward of Baring Island.

20th.—Lat. $74^{\circ} 27' N.$, long. $122^{\circ} 32' 15'' W.$ Have had clear water to reach thus far, running within a mile of the coast the whole distance, when our progress was impeded by the ice resting upon the shore. Secured to a large grounded floe-piece in twelve fathoms. Ice appears to have but recently been detached from this coast.

29th.—Ship in great danger of being crushed or driven on shore by the ice coming in with heavy pressure from the Polar Sea, driving her along within 100 yards of the land for half a mile, heeling her fifteen degrees, and raising her bodily one foot eight inches, when we again became stationary and the ice quiet.

Sept. 10th.—Ice again in motion, and ship driven from the land into the main pack, with heavy gale from the S.W.

11th.—Succeeded in getting clear of the pack, and secured to a large grounded floe. Lat. $74^{\circ} 29' N.$, long. $122^{\circ} 20' W.$

19th.—Clear water along shore to the eastward, cast off and worked in that direction, with occasional obstructions and several narrow escapes from the stupendous Polar ice, until the evening of the 23rd, when we ran upon a mud-bank, having six feet water under the bow and five fathoms astern; hove off without sustaining any damage.

24th.—At daylight, observing Barrow Straits full of ice, and large masses setting into this bay, determined upon making this our winter

* Lieutenant Haswell, lat. $70^{\circ} 38'$, long. 115° ; Lieutenant Cresswell, lat. $74^{\circ} 16'$, long. $117^{\circ} 40' W.$; Mr. Wynniatt, lat. $72^{\circ} 6' N.$, long. $117^{\circ} 42' D.R.$

quarters, and finding a well sheltered spot upon the south side of the shoal upon which we last night grounded, ran in and anchored in four fathoms, lat. $74^{\circ} 6' N.$, long. $117^{\circ} 54' W.$ This night were frozen in, and have not since moved. The position is most excellent, being well protected from the heavy ice by the projection of the reef, which throws it clear of the ship 600 yards.

The currents along the coasts of the Polar Sea appear to be influenced in their direction, more or less, by the winds; but, certainly, upon the west side of Baring Island, there is a permanent set to the eastward. At one time we found it as much as two knots during a perfect calm; and that the flood tide sets from the westward we have ascertained beyond a doubt, as the opportunities afforded during our detention along the western shore of this island gave ample proof.

The prevailing winds along the American shore, and in the Prince of Wales Strait, we found to be N.E., but upon this coast S.S.W. to N.W.

A ship stands no chance of getting to the westward by entering the Polar Sea, the water along shore being very narrow and wind contrary, and the pack impenetrable, but through Prince of Wales Strait, and by keeping along the American coast, I conceive it practicable. Drift wood is in great abundance upon the east coast of Prince of Wales Strait, and on the American shore; also, much game.

In this vicinity the hills abound in reindeer and hares, which remain the entire winter: we have been very fortunate in procuring upwards of 4000lb.

The health of the crew has been and still continues excellent, without any diminution of number, nor have we felt the slightest trace of scurvy.

It is my intention, if possible, to return to England this season, touching at Melville Island and Port Leopold; but should we not be again heard of, in all probability we shall have been carried into the Polar pack, or to the westward of Melville Island, in either of which to attempt to send succour would only be to increase the evil, as any ship that enters the Polar pack must be inevitably crushed; therefore, a depot of provisions, or a ship at winter harbour, is the best and only certainty for the safety of the surviving crew.

No trace whatever has been met with, or any information obtained from the natives, which could by any possibility lead to the supposition that Sir J. Franklin's expedition, or any of his crews, have ever yet reached the shores we have visited or searched; nor have we been more fortunate with respect to the *Enterprise*, not having seen her since parting company in the Straits of Magellan on the 20th April, 1850.

This notice was deposited by a travelling party in April, 1852, consisting of Captain M'Clure, Mr. Court, second master; John Calder, captain of the forecabin; Serjeant Woon, Royal Marines; George Gibbs, A.B.; George Bounsall, A.B.; John Davis, A.B.; and Peter Thompson, captain of the foretop.

Whoever finds this it is requested it may be forwarded to the Secretary of the Admiralty.

Dated on board H.B.M. discovery ship *Investigator*, frozen in, in the Bay of Mercy, lat. $74^{\circ} 6' N.$, long. $117^{\circ} 54' W.$, April 12, 1852.

ROBERT M'CLURE, Commander.

Unless there is a vessel now at Melville Island, it is not my intention to revisit it; but make the best of my way down the straits.

R. M'CLURE.

It will be seen that the foregoing summary was deposited in April, 1852, on Melville Island, the season of 1850 having been passed in making the voyage from Behring Strait to Prince of Wales Strait, the wintering place of 1850-1, and that of 1851 having been passed in the voyage from Prince of Wales Strait to the Bay of Mercy. The following dispatch gives a description of the intended progress of the expedition during the present year, when the abandonment of the ship appeared certain, previous to the arrival of Lieutenant Pim, as related by Captain Kellett.

H.M. discovery ship *Investigator*, Bay of Mercy,
Baring Island, April 10, 1853.

Sir.—In the event of our not getting to England this year, I think it necessary to acquaint you, for the information of the Lords Commissioners of the Admiralty, what our operations will be, to effect that object, in 1854, that their lordships may be enabled to take such co-operative measures for our relief as may appear expedient.

Should the ice break up in this bay sufficiently early to permit of our getting through the Straits this season, and finding the water open to the eastward of Leopold Island, it would be my object to push forward, without stopping to take on board any provisions from Port Leopold; but if, contrariwise, the ice should be thick towards Lancaster Sound, I would, if possible, proceed to Port Leopold, and complete a twelvemonth's provisions, and then risk wintering in the pack, or getting through, in preference to remaining at the above port. If, however, we are detained in this bay until next year, it will then be necessary to leave towards the end of April, and make for Port Leopold, where I am aware there is a good boat, a house, and ample supplies; and when the navigation season opens, proceed to Pond Bay, coasting along the south shore of Barrow Straits. Arriving at Pond Bay, and if, finding from the Esquimaux that no whalers have as yet been there, I should there await their appearance as long as my provisions would admit, and then go down the west shore of Baffin Bay, keeping close along the land floe, where whalers or their boats are almost certain of being met with. Failing this, I should cross to Disco, with the hope of getting a passage in some of the Danish vessels which come there annually, and leave about the beginning of September; or, being too late for them, either charter or purchase one of their coasting schooners, which I believe trade among the settlements, if she was capable of standing an Atlantic voyage. Could neither of these be accomplished, we must of necessity remain until the following season at that settlement. Should any of her Majesty's ships be sent for our relief, and we have quitted Port Leopold, a notice containing information of our route will be left at the door of the house on

Whaler's Point, or on some conspicuous point; if, however, on the contrary, no intimation should be found of our having been there, it may be at once surmised that some fatal catastrophe has happened, either from being carried into the Polar Sea or smashed in Barrow Straits, and no survivors left; if such should be the case, which, however, I will not anticipate, it will then be quite unnecessary to penetrate further westward for our relief, as by the period that any vessel could reach that port, we must from want of provisions all have perished. In such a case I would submit that the officer may be directed to return, and by no means incur the danger of losing other lives in quest of those who will then be no more. As, however, it may occur (as was the case with Sir John Ross) that the ice may not break up in Prince Regent Inlet during the whole summer, it is as well to provide against such a contingency. If such should happen, it would be necessary to winter at Port Leopold; unless apprised of the locality of any ship that might be sent to our relief; which I think might be accomplished without any very great difficulty; as, although such vessel may not be enabled to get far up the straits, yet, as Admiralty Inlet would be pretty certain of being clear of ice, she might proceed thither, and in some secure bay freeze in; and when the straits are firmly frozen over about the middle of October, a small travelling party could be dispatched with the intelligence. The whole would then proceed to her, and although rather late in the season, men working for their lives are not likely to be discouraged by a little cold.

Whatever may be the final termination of this long, tedious, but I hope not unimportant, voyage, I hope, sir, that you will assure their lordships that in every stage I have been guided entirely by what I have considered to be my duty, in prosecuting to the utmost the object for which the expedition was fitted out; and, although we have not succeeded in obtaining any information which could throw the slightest clue upon the fate of our missing countrymen, I hope that the services performed in the tracing of a very great extent of coast line, the discovery of much land, (a portion inhabited by a simple and primitive people not hitherto known,) and, above all, the accurate knowledge of that passage between the Atlantic and Pacific Oceans which for so many hundred years has baffled maritime Europe—its very existence being almost considered sceptical—will, I trust, be considered events sufficiently interesting and important to elicit from their lordships a favourable consideration of our services.

I have the honour to be, Sir,

Your most obedient humble servant,

ROBERT M'CLURE, Commander.

The following letters contain a narrative of this voyage, in which the proceedings of the *Investigator* are more fully described, and those interviews between Captain M'Clure and the Esquimaux tribes of the coast along which he passed. We have added to them a chart of the coast, showing the *Investigator's* track, referring the reader to the former for those parts alluded to by Captain M'Clure, of (Baring or) Banks Island and Prince Albert Land. We have also added to it

the positions of the *Enterprise*, Captain Collinson, in 1850, and those of other ships engaged in the western search.

H.M. discovery ship *Investigator*, off Point Warren, Polar Sea, Aug. 24th, 1850, in lat. $69^{\circ} 43' N.$, long. $131^{\circ} 57' W.$

Sir,—I have the honour to report to you, for the information of the Lords Commissioners of the Admiralty, that we arrived off the Mackenzie on the 21st inst. The letters that I forwarded by H.M.S. *Herald*, from whom I parted company on the 30th ult., off Cape Lisburne, will have put you in possession of my proceedings up to that date.

After parting with the *Herald* I stood to the N.N.W. with a fresh breeze from the N.E., with the intention of making the ice, which was accomplished on the morning of the 2nd of August, in lat. $72^{\circ} 1' N.$, long. $166^{\circ} 12' W.$, and at 11 a.m. stood into the loose ice for the purpose of examining the pack; the wind, however, failing before we got far in, I was induced to run out to avoid being beset, having ascertained that the pack was very close and heavy, extending from E.N.E. to W.N.W., and, seeing no hope of getting through, worked along its edge in soundings from 24 to 26 fathoms (mud), the hundreds of walruses that were lying upon the ice, thickly huddled together like sheep in a fold, were most astonishing.

We continued working along the ice, occasionally getting drifted in, until the 5th, when the weather, which had been previously thick and misty, cleared a little, and, no ice being in sight, I shaped a course for Wainwright Inlet, with the intention of getting between the pack and shore; in running exchanged numbers with H.M.S. *Plover*, and at 11.30 a.m. observed a low beach, apparently shingle, distant about two miles.

The weather again having become thick, we went entirely by our soundings, which varied from 14 to 73 fathoms, in which latter we rounded Point Barrow at 11.30 p.m., without, however, observing the land, and steered to the eastward, direct for Banks Land, finding that the ice was sufficiently loose and practicable for sailing through. These hopes were soon, however, dissipated; for on the forenoon of the 6th it suddenly cleared, when I found that we had been running directly into the pack, which was very heavy and impenetrable, extending from S.E. to S.W. (by the north), in lat. $71^{\circ} 35' N.$, and long. $155^{\circ} 12' W.$, and the sea through which we had come looking nearly as white as the ice ahead, except that lanes of water were observable. We instantly hauled to the wind, and commenced working out.

During the night the breeze freshened considerably, bringing showers of rain with thick weather, while being compelled to carry a press of canvas through very heavy and close sailing ice rendered the navigation extremely critical. The vessel occasionally struck with some violence. This continued till the afternoon of the 7th, when clear water was reported from the crow's-nest. The wind almost immediately failing, the boats were all manned, and towing commenced amid songs and cheers, which continued with unabated good humour

for six hours, when their laborious work was brought to a successful termination; being in perfectly clear water in Smith Bay, a light air springing up, we worked to the eastward.

At 2 a.m. of the 8th, being off Point Drew, sent Mr. Court (second master) on shore to erect a cairn, and bury a notice of our having passed. Upon landing they were met by three natives, who at first were very timid, but, upon exchanging signs of friendship, which consisted of raising the arms three times over the head, they approached the boat, and, after the pleasant salutation of rubbing noses, became very communicative; when, by the assistance of our invaluable interpreter, Mr. Miertsching—the selection of this gentleman for this important office does infinite credit to the discernment of those who sent him,—we found the tribe consisted of ten tents (this being the only approach to their numbers he could obtain), that they had arrived only three days previously, and that they hold communication with a party inland, who trade with the Russian Fur Company. The evening before they had observed us, but could not imagine what large trees they were moving about (our masts), and all the tribe had assembled on the beach to look at them, when they agreed that it was something very extraordinary, and left the three men who met the boat to watch. They also gave the pleasing intelligence that we should find open water along the coast from about three to five miles' distance during the summer; that the heavy ice very seldom came in or never left the land further than at present; that they did not know if there were any islands further north, as they found it impossible to go in their kyacks, when in pursuit of seals, further than one day's journey to the main ice, and then the lanes of water allowed of their proceeding three-quarters of a day further, which brought them to very large and high ice, with not space enough in any part of it to allow their kyacks to enter. The probable distance Mr. Miertsching therefore estimates, from his knowledge of the Esquimaux habits, to be about forty miles off shore, and, from what I have seen of the pack, I am inclined to think this is perfectly correct, for a more unbroken mass I never witnessed.

They also mentioned seeing the boats with white men going eastward last year (which, I suppose, was Lieutenant Pullen) but had not seen any other white persons or anything like this vessel before; they had, therefore, no name of sufficient grandeur to give the great "omiac," so they called her the "fast moving island." Several of them came off to the vessel, but had little to barter, as all their hunters were away, but immediately we had been observed they were sent for, and would soon arrive. Then, said they, "you will be gone, and how disappointed they will be." They appear a simple, kind people, very poor, very filthy, and, to us, looking exceedingly wretched. The time of our return was repeatedly inquired for by them. They would have a quantity of skins; they were anxious for us to wait a little, that they might send off a supply of reindeer; but, the boat returning and the wind fair, I made them a few presents, and gave them a letter to be

forwarded to the Russian Fur Company, and made sail to the eastward.

The wind being light as we ran close alongshore, in from four to six fathoms, we had a great many visitors; many of them had been their whole lives between the Coppermine and Point Barrow. These could give no information of the missing expedition. I am certain that had any of them reached these shores we must have heard of it. The coast is inhabited throughout, and the natives are, to all appearance, a kind and merry race, and when we gave them presents, through the medium of the interpreter, we told them that we were looking for our lost brothers, and if they saw any white men in distress they were to be very kind, to which they assented, by saying they would, and give them plenty of "deer's flesh."

While running along the land, which is exceedingly low, observed upon Point Pitt two conical mounds; thinking they might have some communication buried beneath, ran in to examine them. While in stays the vessel took the ground, but was hove off almost immediately without any damage, the bottom being soft clay. The boat sent to examine the mounds reported them old Esquimaux caches, where they deposit their venison. They left a bottle containing a notice of our passing.

Upon rounding Cape Halkett on the morning of the 9th found the ice was set close to the shore, which rendered it a passage of much anxiety, great labour, and imminent risk, as the wind was strong from E.S.E., with thick fog, and the ice closing around us fast, so that we had barely space to work in, tacking frequently in five, and never beyond ten minutes, standing upon one tack into three and a half fathoms, and upon the other to four and a half and six fathoms; this operation was continued the greater part of the middle and all the morning watch. At 9 a.m. the weather cleared a little, and open water was observed in Smith Bay; our soundings gradually increased; the reaches became longer as we rounded the Cape, and all apprehension of being forced on shore was over.

10th.—In crossing Harrison Bay found the influence of the Colville to extend twelve or fourteen miles, the surface of the water being of a dirty mud colour, and scarcely salt. The weather (thick and foggy) prevented any land being seen. The soundings were very regular; on one tack the ice allowed of our standing off to eight fathoms, and on the other the land to three and a half fathoms, black mud.

11th.—In the morning the weather cleared a little, and discovered to us Jones Island. An erect piece of wood on the shore attracted the attention of the officer of the watch; a boat was sent to examine it, when it appeared to be a piece of drift wood, which had been squeezed up by the ice. The shore was strewn with it, and one spar was as large as our mainmast, and forty-five feet in length. We erected a cairn and left a notice. In the forenoon about thirty natives came off in two baidars, from whom we obtained some fish and ducks, in exchange for a little tobacco. They had been about two months on the

coast, and trade with the Russian Fur Company. Their surprise, of course, was very great, particularly at the size of our handkerchiefs (the sails); the whale-boats attracted their attention, and they asked if trees grew in our country sufficiently large to make them. The head man possessed a gun with "Barnett, 1840" upon the lock; this he obtained from the Russians.

As a fair specimen of the observation of these people and their aptitude for trade, the following way be taken:—Seeing that we cut the tobacco into pieces to give in exchange for their fish (salmon trout), they began to do the same with the fish. This, however, we would not admit, so they were obliged to come to our terms. During the afternoon, while standing along a low flat island, we observed a flag (a pair of seal skin inexpressibles) upon a lofty pole, and a number of natives around it; we stood for them, but when the boats were pulling in they appeared to regret their temerity, for down came the seal-skin and away they ran; shortly, gaining courage, they returned, and, as we approached, arranged themselves in line upon the beach, and commenced extending their arms above their heads (typical of friendship), which being answered from the boats, perfectly assured them of our amicable intentions. Upon landing they evinced a most manly confidence, rubbing noses and embracing most vigorously; these were very cleanly, so that the operation was not so unpleasant as it otherwise might have been. Through the interpreter, Mr. Miertsching, we learnt that these people had never before seen a European, nor had they the smallest article of European manufacture about them (Lieut. Pullen's boats they observed last year, but they were some distance off, and consequently had no communication). They live during the summer months upon these desolate islands, and in the winter retire a short distance on the mainland to their warmer residences. Their women and tents were upon another island. They were a fine active set of young men, average height about five feet six inches. These barter their skins, &c., with a tribe further west, who, in their turn, do the same with others, until they reach the Russian post upon the Colville. To them I intrusted a dispatch for their lordships, which they promised most faithfully should be forwarded to the Colville. I made them a few presents, giving them also a boat's ensign, in commemoration of the first man-of-war whose flag has ever floated in these sterile regions. The magnificence of the gift they could not for some time comprehend, and were loth to touch it, but at length the interpreter made them understand it was sent them by a great chief, and in return they were to be very kind to all white men they met, and show it to them. All this they promised. The chief then seized it in his arms and ran across the island to his canoe, followed by the remainder of his tribe, and no doubt hurried with the joyful tidings to the women. We find a westerly set, which prevents our making but slight progress, the wind hanging so much to the eastward.

On the morning of the 12th four baidars came alongside, containing the whole encampment of the tribe we met last night, and also some that we had seen two days previously, from which it appeared they

are migratory. They brought off a supply of fish and a quantity of venison; but the latter was in such a state of high putrefaction we could not touch it. We allowed most of the men to come on board, and, although well aware of their knavish propensities, and, consequently, a sharp look-out was kept upon them, they most adroitly managed to slip both handles of our winch and a small ice anchor into their baidar, when the fair sex became the recipients. It was by the greatest accident that the theft was discovered, by the end of one handle protruding from beneath the ample proportions of the lady—who, when taxed, immediately returned the articles, and informed upon her husband. For this immorality the whole boat was exempted from receiving any present.

Working to the eastward observed a few deer upon one of the low islands, but was prevented sending any boat, as a south-east current was setting us into shoal water very fast, so that all the boats were required to tow until 8 p.m., when a light air ran us to the westward into six fathoms; the loose ice was in rapid motion, and the larger floe pieces, as they passed, appeared to create a current which frequently turned the vessel completely round against helm and sails, the power of a two-knot breeze being insufficient to counteract it.

On the morning of the 13th we were enveloped in a dense fog, among exceedingly heavy and close sailing ice, through which we attempted to work, but found that endeavouring to avoid one piece we ran upon another, striking occasionally with great force, which determined me to secure to a floe until it cleared. In this we fortunately succeeded, getting one that was grounded in seven fathoms. It was a heavy piece, but not so much so as many that were about us. I took its height above the water in seven places, which gave an average of 11 feet 11 inches; a pack chiefly composed of such would be too powerful a foe for any ship long to contend against.

At 8 a.m. of the 14th, it having cleared a little, slipped from the floe, and commenced working to the eastward among masses of ice. At 10.30 a.m. observed a shoal just in time to avoid it; it was completely hidden from view off deck, not being as high as the ice, having a quantity of driftwood upon it, which is in great abundance along the whole coast. At 3.30 p.m. our course was impeded by another of these low islands, which had the ice resting upon its northern extreme, while the southern point was flanked by a shoal, which connected it with the island seen in the morning. We were thus perfectly hemmed in. The boats were sent to sound, when Mr. Court represented a passage practicable in three fathoms. In running through we unfortunately hit upon a spot with only two and a half fathoms, which had escaped observation. We had, consequently, to lighten the vessel considerably before she got off, which, however, was accomplished without any damage (the bottom being sand) by 11 p.m., having been on shore five hours. I regret to add that 11 casks of salt meat, which were placed in the first whale-boat, were lost by her upsetting, being compelled to place the provisions in the whalers, the cutters having the bower anchors in them. This was a serious loss; indeed, an irre-

parable calamity. As soon as we were off it was my wish to return by the way we came in, but we found that the ice had set upon the shoal we had first observed, and cut off our retreat, under which circumstances I was obliged to anchor and wait a change of wind.

On the 16th the wind came slightly from the westward, which set the ice in motion off the north point of the island. At 9 a.m. weighed and towed to the edge of the ice, which presented a barrier of about 500 yards in width between us and the open water we wished to get into. We commenced warping at 2 p.m., and so heavy was the ice that it was not until 8 p.m. that we could get through. It fell calm, so made fast to the ice for the night.

Next morning, the 17th, a very thick fog, with light north-east wind; and at 4 a.m. commenced kedging to the eastward, but at 7 a.m. gave it up; the wind freshened and unable to see for fog. At 2 p.m. it cleared; we slipped from the ice and plied to the north-east amid heavy streams and large floe pieces, vessel striking violently, but unavoidably, against them.

18th.—To-day, from the mast-head, observed the first lane of open water in the pack, extending, east and west, several miles, but very narrow. In the evening a fresh breeze from the south-west, and, almost simultaneously, a slight pitching motion was observed, which is considered an infallible symptom of open water being near. It was so foggy that nothing could be seen; but, notwithstanding, I shaped a course N.N.W. for Banks Land, thinking that we had rounded the pack, having coasted it between four and five hundred miles. We continued the greatest part of the night to run without much obstruction; but upon the following morning, the 19th, our progress was checked by finding that we had run into a deep bight which compelled us to work back again to the south-east.

20th.—Before getting clear of this pack, into which we had penetrated a considerable distance, being decoyed by a few lanes of open water, we were compelled to run seventy miles south, which placed us in lat. $69^{\circ} 50' N.$, long. $136^{\circ} 50' W.$ It is seldom that observations can be obtained, this being only the sixth set since the 5th of the month, the fog and mist being more continuous than I ever remember to have met elsewhere.

21st.—We have succeeded in getting again into clear water; at 1 p.m. made the Pelly Islands, off the mouth of the Mackenzie. The coast is, however, so excessively shoal that I find it impossible to reach the mainland, which I was very anxious to accomplish, but, at the distance of forty miles from it, was obliged to tack in three and three quarters fathoms. We passed the line of its tide most distinctly marked about ten miles further north, the water being the colour of the Thames at Woolwich, slightly brackish, and its temperature 39 degrees, the sea, four hours previously, being 28 degrees. From what I have observed of the pack, I feel convinced that any attempt to reach Banks Land through it would only terminate in failure, and the consequent loss of valuable time, but by working between its edge and the shore have confidence in making a good advance this season; it is,

therefore, my intention to pursue the latter method, and, in so doing, deviate from my original purpose of pushing into the ice, as mentioned in my letter to their lordships, dated the 19th of July.

22nd.—Fog during the whole of the night very dense, but, having much open water upon the eastern shore from the Mackenzie towards Cape Bathurst, had no difficulty in working along it, in soundings from four to eight fathoms; which latter was the extent that the ice permitted us off shore. At noon a slight clear discovered to us a cluster of islands, which a very indifferent observation (lat. $69^{\circ} 34' N.$, long. $135^{\circ} 9' W.$) points out as those of Pelly.

23rd.—A fine clear day, the temperature rising to 40 degrees at noon. Made the northern extreme of Richards Island from the mast-head, and by a good observation established our position lat. $69^{\circ} 54' N.$, long. $133^{\circ} 48' W.$, the water towards the shore being perfectly clear of ice; which agrees with the account given by Sir John Richardson that the natives observe no ice for two moons, but these never quit the land any distance, for were they to extend their excursions ten miles further north than our position, they would find the pack solid and impenetrable. This, however, gives ample space for navigation, the soundings being so exceedingly regular that, during the most foggy weather, we can stand in shore with the most perfect confidence to $3\frac{1}{2}$ fathoms. A whale was seen to day, being only the third since rounding Point Barrow, although upon the day we were off that point seven were counted.

24th.—Observed huts and natives off Point Warren. I hastily close this communication in the hope of its reaching their lordships this year through Fort Good Hope, as I imagine these people communicate with the Mackenzie. I have written to the company's officer at the above-mentioned post, to request his exertions in sending it forward.

In conclusion, it gives me great pleasure to state that the whole of the crew are in excellent health and spirits. The season appears exceedingly favourable, the temperature being mild and the water perfectly free from ice along the shore as far as we can see. It was my intention to touch at Cape Bathurst, with the chance of being able to forward this dispatch, which will now not be necessary, but shall make the most of the remainder of the season by getting to the northward, in pursuance of their lordships' directions.

I have the honour to be, Sir,

Your most obedient humble servant,

ROBERT M'CLURE, Commander.

H.M. discovery ship *Investigator*, off Cape Bathurst,
Polar Sea; lat. $70^{\circ} 23' N.$, long. $127^{\circ} 57' W.$,
August 30, 1850.

Sir,—Having closed my dispatch of the 24th with an intimation that it would be left near Point Warren with the natives observed from the ship, in accordance with that intention I proceeded to the

shore. Why it was not so left I shall, in continuation of my narrative, relate.

From the contiguity of this tribe to the Mackenzie, I was naturally led to imagine that their trade was with the Hudson's Bay Company. Great therefore was my surprise upon approaching the beach to find, instead of being greeted with the usual friendly signs, that two savages, with gesticulations the most menacing, having bended bows with arrows on their strings, and one with a large knife, which he brandished most significantly, waved us off. Taking no heed of these hostile demonstrations, we pulled in; they retreated, yelling furiously. On our reaching the fall of the beach we made the same signs of friendship which we had used with the Esquimaux further west, but without any effect until joined by the interpreter, who was in full native costume. This gave them confidence; and, upon his explaining our friendly intentions, they approached; but when within about thirty yards, remarking some muskets which the boat's crew had, their fury revived; to pacify them they were laid on the ground, where they became the object of a cautious examination. Still unsatisfied, they beckoned to take them to the boat. Seeing that nothing short of this would allow of any communication, I sent them away; when they approached and permitted us to examine their bows and arrows.

Mr. Mertsching informed me that we had been observed at 5 o'clock in the morning. The whole tribe had immediately taken to their baidars, with their most valuable skins, and left the settlement, with the exception of the chief and his son, who remained to defend their property, as it would have been undignified to retire when danger was apprehended. A sick son and his mother, seeing our friendly disposition, soon joined us. Dr. Armstrong examined the poor lad's foot; it was in a frightful state of mortification. The chief stated that they were at war with the neighbouring tribes, and had occasional skirmishes with the Indians; that they had no communication with any persons belonging to the Great River (Mackenzie), nor had they seen any white people before; but, when the sea freezes, (the latter end of next month,) the whole tribe proceed west, and trade with the Esquimaux whom we had met near Jones Island. The interpreter told him that he had found a brother in the chief of one of those tribes, whose name was Attawas; the old chief clapped his hands and said he knew him well; that he was the great chief he traded with, and their reason for going such a distance, in preference to the Mackenzie, was that the white men had given the Indians very bad water, which killed many, and made others foolish (drunk), and that they would not have any such water. From this it evidently appears that the company lose annually many valuable skins, which find their way to the Colville, instead of the Mackenzie.

Observing an old flat brass button suspended from the ear of the chief, he said it was taken from a white man who had been killed by one of his tribe, who went away in his kyack when the vessel was seen; the white man belonged to a party which had landed at Point Warren, and there built a house; nobody knew how they came, as

they had no boat, but that they went inland; the man killed had strayed from the party, and that he and his son buried him upon a hill at a little distance. The only answer we could obtain as to the probable time when this transaction took place was, "that it might be last year, or when I was a child." To examine the grave I was very anxious, but was prevented by the state of the weather, becoming foggy with fresh breezes, which compelled our immediate return to the ship; so, making them a few presents, we parted on very amicable terms. This intelligence appeared of so important a nature, with respect to the white men on the point, that I determined to remain until it became sufficiently clear to land and examine the house, which might possibly contain some indication of the missing expedition; this detained me eighteen hours, but to have left with a doubt would have been a subject of perpetual regret.

At 2 a.m. on the following morning, the 25th, we reached the point, the weather being tolerably clear. The interpreter, Dr. Armstrong, and myself, went on shore in eager expectation of discovering some clue that would lead to a knowledge of the parties, but in this we were miserably disappointed; two huts, indeed, were there to excite hopes, but upon approaching them we found the wood work to be perfectly rotten and of a very old date, without any description of mark to yield the slightest information. The general appearance of the country about the point was low and marshy, covered with grass, moss, and flowers, the breeding-place of the eider duck, and every species of wild fowl; we also remarked the footmarks of the fox and reindeer; so fertile a landscape I could not anticipate upon the shores of the Polar Sea. The interpreter, from his knowledge of the customs of the Esquimaux, is of opinion that the story of the white man is traditional; probably some of the early discoverers had been engaged in some affray with the ancestors of the present chief, and one of them had been killed. The present generation inherit the honour, and so identify themselves with their forefathers, speaking of the transaction in the first person as if they themselves were the actors; which is very likely, from the vague definition of the time—"it might be last year, or when I was a child;" so the history of the white man will still continue a mystery. We also heard that last year two boats came from the westward, and landed at Point Warren and then returned. I cannot imagine what boats these could be, unless they were those of Lieutenant Pullen, who, in thick weather, might have missed the Mackenzie, and, by sights obtained at the point, discovered his error. They had not seen any this year.

Aug. 26.—N.E. winds and snow, occasionally clearing, so that the land could be discerned, which presented the same low line, with a few conical hills a short distance inland. We saw a few old tents, but not a native. Two whales passed us close to the vessel, one very large, although only in six fathoms of water.

Aug. 27.—Light northerly winds and thick fog. It was my intention to send a boat along-shore, that she might examine it thoroughly, as the water to the eastward of Cape Brown permits us standing within

two miles of the coast, and take her on board in the evening; but, under the circumstance of thick weather, I could not venture to do so, fearful of being detained by missing her.

Aug. 28.—Light winds from N.E., with a mild, cloudy day. At noon, Cape Dalhousie S.W. 12 miles, several masses of drift ice, some of the pieces very heavy, which, however, is not any obstruction to our progress, as the space of open water is ample for sailing. We have found, during the last four days, a current varying from 11 to 16 miles daily, setting to the southward. We have had no opportunity of shooting; the greatest part of the birds had taken their southern flight before our arrival; the few flocks that we have seen were very shy, and unapproachable.

Aug. 29.—Very dense fog, with light wind from N.E., which cleared at noon sufficiently to obtain a meridian altitude, and found that we had been set since yesterday south 12 miles, Cape Dalhousie distant S.W. (true) 3 miles; the fog enveloped us again while standing off shore, when we ran into a narrow channel, having but $3\frac{1}{2}$ fathoms on either side, which compelled us to bear up west. This carried us into deep water in about fifteen minutes. In the course of the afternoon we fell in with very heavy drift ice, composed of large floe pieces, occasionally becoming entangled in consequence of the thick fog, although there was much open water among it.

Aug. 30.—Wind from the northward, with clear weather. Observing a mark on the beach upon the island off Maitland Point, in Liverpool Bay, sent Mr. Sainsbury (mate) to examine it, and to leave a notice of our passing. Upon his return he reported that an Esquimaux encampment had recently broken up, the traces of their tents and footmarks being quite distinct. We observed from the ship several reindeer, which were not seen by the party on shore. In standing along the coast, observing natives, I ran in to forward this dispatch, trusting it might reach the Hudson Bay Company this year, which is probable, if they are not as great a set of savages as we met near Point Warren. I hope to round Cape Bathurst to-morrow. This will therefore be the last communication which it will, in all probability, be in my power to make to their lordships. The temperature has hitherto been exceedingly mild, thermometer very seldom being below 32° , and from the present favourable appearance, both of the weather and state of the ice, I have very strong hopes of getting well to the northward ere the navigation ceases, which will be about the latter end of next month, according to Esquimaux report.

I have the honour to be, Sir,

Your most obedient humble servant,

ROBERT M'CLURE, Commander.

H.M. discovery ship *Investigator*, off Cape Bathurst, Polar Sea, August 30th, 1850, in lat. 70° 28' N., long. 128° 33' W.

Sir,—In accordance with the intention expressed at the conclusion of my last letter, I proceeded in the first whale-boat, accompanied by Dr. Armstrong and Mr. Miertsching, followed by Lieutenant Cresswell and a party of officers in a cutter, bringing a variety of presents. We were met upon landing by two women, who greeted us very cordially, and, through the medium of the interpreter, acquainted me that the remainder of the tribe were at Cape Bathurst, catching whales, which was at no great distance, and they would be our guides. Gladly availing ourselves of this apparently fortunate incident, the boats were directed to pull along shore, while we ascending the cliff, reached a fine level plain, extending several miles north and south, rich with verdure and abounding in moss. We preferred walking, hoping to meet some reindeer, for which the pasture was excellent, but mile after mile was walked without any appearance of the fishing party. Arriving, after the expiration of three hours, in a small bay, we were, however, gratified at being told this was the spot where two boats, the year before last, had pitched their tents for the night (Sir J. Richardson), and we had to go a very little further. On reaching the next bay we found there two tents, which our guides said belonged to them, but the Cape or any appearance of the tribe could not be seen. We declined going any further, as, in consequence of the wind falling light, the vessel was by this time hull down. We were then kindly invited to become partakers of their tents, and go on the next morning, which hospitable offer was not accepted; but, bartering several articles in exchange for salmon and making them a few presents, we returned on board, when, at 10.30 p.m., it becoming dark and foggy, and getting into 3½ fathoms, we anchored for the night.

August 31st, at daylight, found that we were between the mainland and Bailey Islands, about a mile from the latter, the weather still foggy, with a moderate N.W. breeze, but determined, if possible, to discover the fishing party; at 7.30 a.m. I left the ship, with Mr. Miertsching and Dr. Armstrong, in the cutter, and, after coasting about ten miles, discovered, upon the extremity of Cape Bathurst, a large encampment, consisting of thirty tents and nine winter houses, numbering a little over 300 people. On landing upon a very low isthmus, which connects, within a very few yards, the islands and mainland, we remarked a commotion at the village, and a number of men rushed down the cliffs, launched their kyacks, and crossed to meet us, hauling these light and elegant skiffs on the beach, they advanced with knives drawn and bows bent, evidently prepared for hostilities. Finding by our gestures that our intentions were amicable, their bows were returned to their sealskin cases, but the knives they still retained. The interpreter told them that our visit was friendly, and that they should put away their knives. "Yes," said they, "when you do your

guns." To be allowed to carry the musket appeared a great favour, for which they presented you with their knife, as a token of friendship.

We remained upwards of an hour; during the greater part of the time, Mr. Miertsching was in earnest conversation with the chief—a fine, intelligent, middle aged man—upon the necessity of his forwarding our dispatches to the Mackenzie, which he promised most faithfully to perform, for which he was to receive a musket and ammunition, and, upon his delivering the packet, a further reward equal in value to a silver fox skin. He, however, said that their tribe do not trade with the Mackenzie, but with another further south, who in their turn traffic with the Indians who are in the service of the Hudson Bay Company; so, as they have to pass through three tribes of the heathen before they come into the hands of civilized man, I think it extremely probable that they may never reach their destination. Mr. Miertsching, from his knowledge of the Esquimaux character, thinks otherwise, and imagines that the chief will himself carry them. The perfect ease with which this gentleman understands and converses with these interesting people surprises them very much; they were most anxious for him to remain, promising to be very kind. The chief presented his daughter, a very pretty girl of about fifteen, who should be his wife; tents and all appurtenances were to be added.

While these negotiations were going forward, upwards of 100 persons had descended from the village. With such a concourse I did not think it prudent to open the bag containing the presents, well knowing their cupidity is easily excited by the display of such valuables, when they are not to be relied on. We consequently returned to the boat. When the chief was instructed in the use of his gun, he showed himself an apt pupil, and when the ammunition was given into his hands, expressed himself very much gratified at the gift, and walked towards the village with his chief men. A line was then made on the beach, which the recipients of gifts were not to pass (and this they perfectly understood); the interpreter then commenced the distribution. For a little time order was maintained, but the fair sex becoming clamorous and closing round, the line was broken, and, to prevent being driven into the water, we were compelled to retreat to the boat, which was lying aground about twenty yards from the beach.

By this manoeuvre, we escaped from all that had not on water-tight boots, but still about forty surrounded the cutter; and, although the crew were stationed round her to prevent their getting on board, so eager and persevering were the women that several were lifted in, endeavouring to seize everything within their reach; one of them in the most dexterous manner slipped the compass out of its box into the breast of her jacket, and with difficulty it was recovered. It was only by great firmness and stoppage of the supplies that reduced them to order, or to quit the boat. The presents being at length distributed, and every one in good humour, we wished them farewell, and commenced launching the boat, in which operation they most vigorously assisted, and seventeen, in their fairy kyacks, escorted us to the

ship, arriving about a quarter of an hour before we did—except one, who, having got some little distance off the shore, encountered a fresh breeze and rough sea. We shortened sail, and took boat and all in. The poor fellow being drenched we offered him a little brandy, which he drank at a mouthful, not being aware of its strength. He suffered the sensation to subside without evincing (except by his eyes watering) any symptom of vexation, and then asked for water. Many came on board the ship, but one only ventured below, who was exceedingly surprised to find that we had not tents but houses (cabins), and said he should have many wonderful things to relate when he went home. This tribe is a fine intelligent race—cleanly, handsome, and well-grown; and I deeply regret that so little has been hitherto attempted in civilising them. I sincerely hope that the day is not far distant when this interesting people may be redeemed from their deplorable state of heathen darkness.

At 5.40 p.m. we sailed with a moderate breeze from the S.W., and reached to the S.E. for the purpose of clearing the Bailey Islands. At 9 tacked and stood to the N.W., the wind becoming light and variable. During the night we made but little progress; and at 8 a.m. on the morning of September 1st I observed Cape Bathurst, N.E.b.E., six miles. In the course of the forenoon many kyacks came off. The natives, now assured of our friendly intentions, came on board without the slightest reluctance, and, through the medium of the interpreter, acquainted us that during the night they had been preparing a feast, roasting whale and venison, and had salmon, blubber, and other delicacies, besides plenty of skins ready at the tents, and hoped we would come on shore, which, indeed, I should very much have enjoyed had the vessel being in a less precarious position; but, under the present circumstances, it was impossible, which, it appeared, that those on shore understood, for in the afternoon a great many of both sexes visited us; and, all being clamorous to get on board, we were obliged to take their kyacks on deck.

Seeing their boats were in safety, they made themselves perfectly at home, examining every article of furniture most minutely. The pictures and looking glasses in the officers' cabins were objects of much admiration. Many were dancing with our men, and so mutually happy were all parties, that it was near six o'clock before I could get them to leave the ship; indeed, had not the interpreter told them that we were going towards the pack, and would not again come near their tents, I very much question if we should have got them away without compulsion. We understood from them that the main pack is permanent, never leaving the shore above 12 or 14 miles. They designate it as the "land of the white bear," as it abounds with those animals, which they appeared rather to dread, as, when we stood towards the pack in the forenoon, they entreated not to be left there as they were fearful of the bear. One mother mentioned that she had her little child carried away by one of them a short time previous, while playing on the shore a little distance from her. The poor creature shed tears

in relating the catastrophe. At parting several presents were bestowed upon them, which had the effect of eliciting promises of friendship for us or any of our white brethren who might come on their coast.

These people had no article of European manufacture, except a few iron pots, which certainly they gave a very formidable price for—no less than five of the best silver fox skins for each. The tribe leave the Cape about the 20th of September, when the ice is sufficiently stotng to bear their sledges, for the purpose of bartering with the bordering tribe. They then go to their winter houses some distance inland, with the exception of a few families, who live the entire year upon this bleak and inhospitable shore.

Sept. 2nd.—Fine day, with light northerly wind; ran along the pack edge, the ice being heavy and impenetrable: not a drop of water to be seen from the mast-head among it. The water between it and the shore is practicable, although encumbered with much loose ice. Experienced a strong current from the S.E., which set us to the westward of the Bailey Islands.

On the morning of the 3rd, the wind gradually veered to the southward, bringing with it a very dense fog, and, being at the time surrounded with heavy floe pieces and close sailing ice, through which it was necessary to pursue our course, so that every advantage might be taken of the favourable breeze, the vessel occasionally came into violent collision. At noon it cleared a little, when Trail Point bore S.S.W., about seven miles; sounded in 65 fathoms (mud). The nights having a few hours' darkness, blue lights and rockets are fired for the purpose of attracting the attention of any parties that might be returning from Wollaston or Victoria Lands bound to the Mackenzie.

4th.—Light variable winds, with warm weather, the temperature rising to 41°; the water along shore free from ice. About four miles to the westward of the Horton, sounded in 83 fathoms, and shortly after passed over a narrow shoal having but 13 fathoms; a few pieces of heavy ice were grounded upon it. The land appears to average from 80 to 100 feet in height, composed of blue clay intermingled with sand. Many whales have been about the ship: at one time eight, and from one to four the greater part of the day. A bear, the first that has been seen, was likewise remarked upon some loose ice in shore, but time would not allow of its being pursued.

5th.—The weather, which had been squally, accompanied by a thick fog during the early part of the day, cleared towards noon, when a volume of smoke was observed about twelve miles S.W., and five to the eastward of the Horton, in the same spot that it had attracted our attention yesterday. As divers opinions were in circulation respecting its probable cause, and the icemate having positively reported that from the crow's nest he could distinguish several persons moving about, dressed in white shirts, and observed some white tents in a hollow of the cliff, I certainly had every reason to imagine they were a party of Europeans in distress, convinced that no travellers would remain for so long a period as we had remarked the smoke in one spot for their pleasure; therefore, to satisfy myself equally as others, I deter-

mined to send a boat on shore, as it was now calm; the first whale-boat, under Lieutenant Cresswell, with Dr. Armstrong and Mr. Miertsching, was dispatched to examine into the cause, who on their return reported the smoke to emanate from fifteen small mounds, of volcanic appearance, occupying a space of about fifty yards, the place strongly impregnated with sulphur, the lower mounds being about 30 feet above the sea level, the highest about 50 feet. The land in its vicinity was blue clay, much intersected with ravines and deep water-courses, varying in elevation from 300 to 500 feet. The mark of a reindeer was traced to a small pond of water immediately above the mounds. A notice of our having landed was left, which would not long remain, as the cliff is evidently rapidly crumbling away. Thus the mystery of the white shirts and tents was most satisfactorily explained. A breeze shortly springing up from the westward, we made sail to the N.E. During the night it freshened considerably, with rain and thick weather; this, combined with four hours' darkness, compelled me to shorten sail, although loth to lose the full benefit of the fair wind, but we struck so heavily against large blue floe pieces, that were barely above the water, that the greatest vigilance and attention were insufficient to avoid them, so no alternative remained to prevent disaster.

A great many seals and whales were seen in Franklin Bay; no less than fifteen of the latter were playing around us at one time, but very small, or according to Greenland fishing phraseology, "having only three-foot bone," so Mr. Newton, the icemate, informs me. At 4 a.m. on the morning of the 6th, we were off the small islands near Cape Parry, bearing N.E.b.N., ten miles, with a fine westerly breeze, and loose sailing ice, interspersed with many heavy floe pieces; the main pack was about three miles to the N.W. apparently one solid mass. At 11.30 a.m. high land was observed on the port bow, bearing N.E.b.N., distant about fifty miles. On approaching it the main pack appeared to be resting on the western shore, which side it was my intention to have coasted had it been possible; the eastern one being, however, comparatively clear as far as could be ascertained from the mast-head, decided me to follow the water, supposing it an island round which a passage would be found into the Polar Sea.

We continued working to windward the whole of the night, and by 9.30 a.m. of the 7th, were off the South Cape, a fine bold headland, the cliffs rising perpendicularly upwards of a thousand feet, which was named "Lord Nelson Head," in memory of the hero whose early career was connected with Arctic adventure. We shortly afterwards hove to, and, with the first whaleboat and cutter, landed and took possession, in the name of her most gracious Majesty, calling it "Baring Island," in honour of the First Lord of the Admiralty. A pole was erected, with a large painted ball upon it, near a cask, which was left, containing a notification and other particulars of our having been there. The sights obtained by artificial horizon place the signal-staff in lat. $71^{\circ} 6' N.$, long. $123^{\circ} W.$; and the fall of the tide was ascertained to be six inches during one hour and a half. We observed nu-

merous recent traces of reindeer, hare, and wild fowl; moss and divers species of wild flowers were also in great abundance; many specimens of them equally, as of other subjects, of interest to the naturalist, were selected with much care by Dr. Armstrong. From an elevation obtained of about 500 feet, we had a fine view towards the interior, which was well clothed with moss, giving a verdant appearance to the range of hills that rose gradually to between 2,000 and 3,000 feet, intersected with ravines, which must convey a copious supply of water to a large lake situated in the centre of a wide plain, about fifteen miles distant. The sight to seaward was favourable in the extreme, open water, with a very small quantity of ice, for the distance of full forty miles towards the east, insured good progress in that direction.

Returning on board at 1 p.m., we made sail to the eastward, having a beating wind. Continued working along shore, in soundings varying from nine to seventy-six fathoms, dark mud mixed with yellow clay, until close to the land, when it changed to fine white sand. The weather becoming foggy, our lead was the only guide until 10 a.m. of the 9th; it then cleared for a short time, when land was observed to the eastward about fifteen miles distant, extending to the northward as far as the eye could reach. The mountains in the interior are lofty and snow-covered, while the low ground is quite free. Several very remarkable peaks were discernible, apparently of volcanic origin. This discovery was named Prince Albert Island, in honour of her Majesty's consort, in lat. $72^{\circ} 1' N.$, long. $119^{\circ} 25' W.$, continuing our course slowly to the N.E., in consequence of thick fog, snow, and baffling winds.

At 8 a.m. of the 10th, we were near two rocky islets, named after H.R.H. the Princess Royal, the largest being about 600 feet in height, and a mile and a half in length, the southern and eastern sides being precipitous: the other was about a quarter of a mile long and a hundred feet high, gradually sloping to the water's edge, representing very much the appearance of an inverted whaleboat. The wind becoming fair, and weather clearing, all the studding sails were set, with the hope of reaching Barrow Straits, from which we were now distant about seventy miles, as the water was tolerably clear in that direction, although much ice was lying against the western land, and from a shoal extending towards it from the largest of the Princess Royal Islands, upon which we obtained thirteen fathoms water. Much loose ice was also in motion, and while endeavouring to run between two floes, at the rate of four knots, they closed so rapidly, one upon either beam, that our way was instantly stopped, and the vessel lifted considerably: in this position we were detained a quarter of an hour, when the pressure eased and we proceeded. Our advance was of short duration, as at 2 p.m. the wind suddenly shifted to the N.E. and began to freshen. The water, which a few hours previous had excited sanguine hopes of a good run, became soon thickly studded with floes, that by 4 p.m. there was scarcely sufficient to keep the ship free. This by much exertion was, however, effected, until 2 a.m. of the 11th, when we were beset. At 5 a.m. the ice again opened, which admitted of our

getting a few miles to the N.E., until 11.30 a.m., when our course was impeded by a very dense pack. At 7 p.m. the wind shifting to the N.W., set the whole body of the ice upon the eastern shore, which shoaled our water from 80 to 50 fathoms in one hour. A clear space of two miles was, however, the result of this movement, in which we continued working the whole night, and upon the morning of the 12th perceived we had lost some miles, as the pack was in motion to the southward; also the further mortification of seeing the whole of the western shore perfectly exempt from ice, while the space of water we occupied was become rapidly more limited by very large and heavy floes, through which we were unable to force, and at 11 a.m. were again beset.

A fresh gale, with snow, which continued until the morning of the 13th, pressed the ice so heavily upon the vessel that the rudder was unhung to prevent its being damaged; during the night the temperature fell to 10°, and the land became completely snow-covered. On the 15th, however, it rose to 30°, with the wind from the S.W., which set the ice in motion, compelling us to shift our berth to avoid collision with an immense floe. At 2.36 a.m. commenced warping, which tedious and laborious duty continued with but slight intermission until half-past 12, when we passed into clear water. A run of five miles to the N.E. brought us to another icy field too dense to penetrate, extending from shore to shore, which is here about 12 miles asunder. The weather towards sunset becoming thick with snow, we ran into six fathoms, and secured to a piece of grounded ice under the western land, with the intention of remaining during the night, as they were then long and dark, therefore navigating among close ice is quite impracticable. The wind, which had been fresh from the S.W. during the day, about 7 p.m. fell light, when the ice in the N.E., no longer restrained, spread with such rapidity that at a little after 8 it was observed approaching, its white line clearly defined running like an unbroken wave along the dark smooth water. To turn the hands up, make sail, and cast off the warps, was but the work of a few minutes; yet, with such violence was it impelled, that we had scarcely time to tow clear of the piece we had been fast to before it encircled the vessel, sweeping her away to the S.W. into five fathoms. I expected to have been driven on the beach; fortunately, from some unseen cause, its course was changed to the S.E., which took us into 20 fathoms; thus fluctuating between hopes and fears until 11.45 p.m., when its progress was mysteriously arrested, and gradually opening allowed of our running into clear water.

As the navigable season was now drawing to a close, which the fall in the temperature, as well as the formation of pancake ice upon the surface of the water whenever the wind became light, unmistakably pointed out, it became a subject of anxious consideration what course to adopt in regard to the safety of the vessel; whether, by running to the southward, in which direction the water was still open, to endeavour to obtain a harbour in one of the bays indenting the south-eastern side of Baring Land, the nearest, probably, being 60 miles distant, and then

only the chance of finding a safe anchorage, which, if our search proved a failure, would place the vessel in a worse situation than at present, exposing her to a wide sea range, subject to heavy pressure from the enormous massive floes with which the Polar Sea is encumbered, from which we are here protected by the Princess Royal Islands; or, continue our advance to the north-east as long as the season permitted, and then submit to the only alternative, that of hazarding a winter in the pack. I decided upon the latter, for these reasons—that to relinquish the ground obtained through so much difficulty, labour, and anxiety, for only the remote chance of finding safe winter quarters, would be injudicious, thoroughly impressed as I am with the absolute importance of retaining every mile to insure any favourable results while navigating these seas, the loss of which might frustrate the operations of a whole season. Above all, being in the vicinity of Banks Land, and in the direction which Sir J. Franklin would in all probability have endeavoured to penetrate could he have reached Cape Walker, I therefore considered that our position was most eligible for carrying into full effect the instructions of my Lords Commissioners of the Admiralty when the season becomes favourable for dispatching parties upon this important and interesting search. These, sir, were the considerations which influenced me in this “choice of difficulties,” and they will, I trust, appear of sufficient validity to meet with the concurrence of their lordships, hazardous as was the experiment.

At 6 a.m. of the 17th the wind, which had been light from the N.W., gradually died away, when we were almost immediately beset. There were several heavy floes in the vicinity; one, full six miles in length, passed at the rate of two knots, crushing everything impeding its progress, and grazed our starboard bow. Fortunately there was but young ice upon the opposite side, which yielded to the pressure; had it otherwise occurred, the vessel must inevitably have been cut asunder.

In the afternoon secured to a moderate sized piece, drawing 8 fathoms, which appeared to offer a fair refuge, and from which we never afterwards parted; it conveyed us to our furthest N.E. position, lat. $73^{\circ} 7' N.$, long. $117^{\circ} 10' W.$, back round the Princess Royal Islands. Passed the largest within 500 yards to lat. $72^{\circ} 42' N.$, long. $118^{\circ} 42' W.$, returning along the coast of Prince Albert Land, and finally freezing in at lat. $72^{\circ} 50' N.$, long. $117^{\circ} 55' W.$, upon the 30th of September, during which circumnavigation we received many severe nips, and were frequently driven close to the shore, from which our deep friend kept us off. To avoid separation we had secured with two stream cables, (one chain,) two 6 and two 5-inch hawsers.

As our exposed position rendered every precaution necessary, we got upon deck a twelvemonth's provisions, with tents, warm clothing, &c., and issued to each person a pair of carpet boots and blanket bag, that in the event of any emergency making it imperative to quit the vessel we might not be so destitute. The 8th of October our perplexities terminated with a nip that lifted the vessel a foot, and heeled her four degrees to port,

in consequence of a large tongue getting beneath her, in which position we quietly remained. As, however, there was a probability of being thrown upon the ice, it was requisite that a smooth surface should be made to receive the vessel, which was accomplished with much facility by blasting the hummocks along the edge of the floe for about 150 yards, and twenty in breadth. This done, and every indication of the pack being now thoroughly cemented, with a temperature of 7° minus, we completed housing over, and other arrangements for our winter quarters.

As the weather upon the 10th was calm and fine, and the ice quiet, at 8.30 a.m. left the ship, accompanied by Lieutenant Cresswell, Dr. Armstrong, and Mr. Miertsching, with a party of seamen, carrying a pole, &c., to plant upon the shores of Prince Albert Land, which we proceeded to take possession of in the name of her most gracious Majesty. This accomplished, we walked to the highest hill observable at the distance of five miles, to an elevation of 1,500 feet, which gave an extended view in every direction.

The country was very hilly, with deep ravines and large lakes. This appears the general character of the land on both shores. The course of the water towards the N.E. we were anxious to trace, hoping to see an opening into Barrow Strait. In this we were disappointed, from the many low points intervening, rendering it impossible to ascertain the land from the sea, both being frozen. On our return we had the mortification to find that the land and sea ice had separated about 100 yards along the whole line of coast. We walked by its margin for some miles, hoping to meet with a loose piece of ice to ferry us across; but night closing rapidly, subjected us to so many falls, owing to the inequalities of our road not being distinguishable, we were compelled to halt, and commence firing to attract attention, but our distance from the ship was too far to render our signals of any utility.

At 8.30 p.m. Mr. Court, with one of the many parties that were searching the ice in all directions, fortunately saw our flashing and made for it; but, unsuspecting our dilemma was created by open water, had no boat; immediately returning, he met with a party which had two of Halkett's. These were soon launched, only getting through the pancake ice, which was by this time an inch thick, was attended with great difficulty. The sea ice also rapidly setting to the northward, the boats after each transit had to be carried south before being launched, so as to insure their reaching the only spot from which the party to be relieved could embark. This operation commenced at 10.30 p.m., and by midnight we were all over, and reached the ship at 2.30 a.m., all parties meeting with heavy falls, but receiving no accident of consequence.

I cannot refrain from noticing the excellence of Halkett's boats, or speak in too high terms of the ingenuity of the inventor. These admirable little articles were inflated on board, and with the greatest facility carried upon a man's shoulders over ice which, from its excessive roughness, no other boat could by any possibility have been got across

without being smashed. By their means a large party were relieved, who were without tents, clothing, fuel, provisions, or in any way provided to withstand the severities of a polar night, with the thermometer 8° *minus*. The consequences to them might have been very serious; as it was, however, the annexation of Prince Albert Land to the British crown was considered to have terminated so favourably, that I directed an extra supper and allowance of grog to be issued to my energetic crew as a reward for their eight hours' rigorous exertions.

Being dissatisfied with the view obtained from Prince Albert Land respecting the waters we were now in as to their connection with Barrow Straits, which would settle the question of a north-west passage, I determined to proceed in that direction with a travelling party, although rather late in the season, as soon as I felt that the vessel might be safely quitted, which I judged would occur after the ensuing spring tides, if at that period there was no commotion among the ice. Accordingly, upon the 21st, everything being favourable, I started with Mr. Court, second master, and the following men—Robert Calder, captain of the forecastle; Robert Tiffeny, captain of the maintop; Michael Flinn, quartermaster; George Brown, A.B.; Peter Thomson, captain of the foretop; and James Saunders, private, Royal Marines. The ice, for two miles from the ship, was so rough that Lieutenant Haswell and the whole of the ship's company, were occupied in carrying the sledge and different articles of lading. At 8 a.m. the sledge was finally packed, when, with the fatigue party in charge of Mr. Wynniatt, (mate,) accompanied by Dr. Armstrong, as an amateur, we set off to the north-east; at noon the fatigue party, having taken us eight miles, were directed to return. Soon after quitting us we got among very difficult ice. The sledge was broken, but quickly fishing it, we proceeded. Unfortunately, scarcely an hour had elapsed, when in crossing a floe, the inequalities of which were imperceptible, it came down with such a crash that it broke into pieces. This was unlucky, but, pitching our tent, Mr. Court and Peter Thomson (captain of the foretop) started for the ship, where they arrived at 7.30 p.m., and rejoined the next day at 2 p.m., with a fresh and larger sledge and a fatigue party, with Mr. Wynniatt to carry the damaged one one back. (This party, upon my return, I found did not get on board until the following day, being stopped by heavy snow drift, but having a tent and provisions did not suffer.)

As soon as the new comers were refreshed, the sledge was packed, and by 3 p.m. were again off, continuing our course without any further disaster, until 3.45 p.m. of the 26th, when we had the extreme gratification of pitching our tent upon the shores of Barrow Straits, in lat. $73^{\circ} 31' N.$, long. $114^{\circ} 39' W.$ (chronometer), long. $114^{\circ} 14' W.$ (lunar), nearly on the line, as represented in the charts, where Sir Edward Parry has very correctly marked the loom of the land.

On the following morning, before sunrise, Mr. Court and myself ascended a small hill about 600 feet in height, so that we could command an extensive view of forty or fifty miles. The extreme point

of Prince Albert Land bore lat. 78° E. (true), about thirty-five miles, the farthest land north, N.N.E., eight miles. The Melville Island shore could not be discovered, but in that direction the ice appears to be very heavy, and the floes exceedingly large. While we were making these observations, the crew were busily engaged erecting a basin about fifteen feet above the water (which had been named Prince of Wales Strait, in honour of H.R.H.), in which a copper cylinder was deposited. The spot is so conspicuous, that any person passing along the shore must remark it. All being completed by 10 a.m. of the 27th we turned for the ship, arriving upon the morning of the 31st, having, in nine days, made in a direct line 156 miles by observations, with a temperature between 7° and 15° .

From the afternoon of the 30th the weather, which had been overcast, suddenly brightened, showing the Princess Royal Islands, distant about twelve miles. At 3 p.m. I left the sledge, with the intention of getting early on board, to have everything in readiness for the comfort of the party, anticipating their arrival at 9 p.m. Unfortunately, the weather became again foggy about 5 p.m., followed soon by darkness, consequently my way was speedily lost, compelling me to wander about the floe during the night, with a temperature from 5° to 15° minus, when at 7 the next morning had the mortification to find that I had passed the vessel four miles, which I reached by 8.30 a.m., and immediately dispatched a party to assist Mr. Court, who was at five miles distance, having most judiciously encamped about seven miles from the ship, when the fog became too dense to travel.

I was agreeably surprised to learn from Lieutenant Haswell that on the 29th a party, consisting of Messrs. Sainsbury, Paine, Miertsching, and Newton, while sporting upon Prince Albert Land, had encountered a herd of musk cattle, two bulls, a cow, an heifer, and a calf, and, most adroitly, shot the whole, which yielded 1,296lbs. of excellent nutritious meat. A supply thus opportune and unexpected may be regarded as a most favourable termination to our season's operations, in which we have been nearly enabled to carry out verbatim their lordships' instructions, in reaching the ice by the 1st of August, and establishing a position near Banks Land, which services have been performed under circumstances over which we could exercise but little control, our only credit consisting in seizing the advantages that an Invisible Power scattered along our road, through fields of ice, where all human exertion would have been equally unavailing as the feebleness of a child to advance us one yard.

The winter—that dreary period of the voyage which I had looked forward to with much apprehension—passed mildly away, there being very little snow or wind, without our sanitary state being in the slightest degree impaired, for which happiness I assign these reasons—viz.:

1. The unflagging spirits and cheerfulness of the men.
2. The excellency of every species of provisions.
3. The free ventilation of the lower deck.
4. The extreme attention of Dr. Armstrong (upon our monthly inspections) to the state of the crew.

So that the month of March found us in a most healthy and efficient condition. Accordingly, upon the 3rd, we commenced our preliminary duties by taking a 30-foot whale-boat to the larger Princess Royal Island, where it is my intention to leave three months' provisions for all hands, that, at the breaking up of the ice, should the vessel unfortunately get crushed, we may have a certainty to fall back upon, which will enable us to reach the *Plover* without hazard of starvation. This duty being completed, as well as the transporting another whale-boat besides one of Halkett's to the eastern shore, distant five miles, for the facility of allowing the travelling parties going along that coast, should the ice break up and carry the vessel away during their absence. All arrangements being now made for the start of the searching parties, and the weather becoming very favourable, upon the 18th of April three were dispatched: under Lieutenant Haswell, S.E. shore; Lieutenant Cresswell, N.W. shore; and Mr. Wynniatt, (Mate,) N.E. shore; with six weeks' provisions each.

May 6th.—At 1 a.m., Mr. Wynniatt, having broken his chronometer, at the distance of 120 miles from the ship, returned; but, all being in good condition they were completed to thirty days' provisions, and at 6 p.m. were again *en route*. At the same time, two hunting parties with tents, &c., left the ship—one for each side of the Straits, as some deer had been seen, besides several ptarmigan and four hares shot. This early indication of fresh provisions is a subject of deep congratulation, independent of the very healthy and exciting occupation of the crew, who are all eager for the sport.

20th.—Lieutenant Cresswell returned in consequence of the severe bites of two of the men, having reached lat. $74^{\circ} 16' N.$, long. $117^{\circ} 40' W.$; being absent thirty-one days. During the greater part of the time he was subject to strong N.W. winds, sweeping from the Polar Sea through Barrow Strait, which, meeting him in the face, rendered it exceedingly difficult to walk against, the thermometer being frequently 15° below zero. He, however, traced the coast line, which, for about seventy miles along Banks Land, was very precipitous, averaging from 1,000 to 1,400 feet, from which it gradually sloped to a point trending to S.W., apparently the extreme of the land in that direction, as it abruptly turned to southwards. An elevation of a thousand feet, aided by an exceedingly clear atmosphere, left no doubt in his mind but that the Polar Sea was before him, and that Banks Land is a part of Baring Island. He was anxious to have made a further advance, and encamped during two days with the hope that the invalids would recover, but, finding them getting much worse, he, very properly, deemed it advisable to return with all haste to the ship. Before reaching her, however, both had to be borne upon the sledge, which threw the work upon four men; when, getting into heavy snow, the officer had to fall in at the drag ropes; nevertheless, the working party arrived in most excellent health and spirits.

On the 21st a large bear was killed. Upon examination of the stomach an extraordinary medley was discovered, consisting of raisins,

tobacco, pork, and adhesive plaster, that I came to the conclusion that the *Enterprise* must be near, the animal not having been seen before near our dirt heap, nor were there any traces of him about the ship. I therefore determined to send a party to the S.W., the only direction we had no travellers, to satisfy myself upon the subject. Accordingly, at 6 p.m., on the 22nd, Lieutenant Cresswell, with his party completed with two fresh hands, was again dispatched, with provisions until June 10th.

On the 24th the above mystery was satisfactorily solved. Some men in pursuit of a bear about half a mile from the ship picked up a preserved meat tin, with articles in it identical with those found in the stomach of the bear killed on the 21st; the foot prints of the animal were likewise abundant on the snow. This evidence was perfectly conclusive as to the locality where bruin had obtained his dainties. This being the anniversary of the birthday of Her Most Gracious Majesty, a royal salute was fired, and the colours displayed in celebration of the event.

29th.—Lieutenant Haswell and party returned, all in the most perfect health, having traced the coast towards Wollaston Land to lat. $70^{\circ} 38' N.$, long. $115^{\circ} W.$; from which point, the day being remarkably clear, he observed the outline of land to the distance of full forty miles trending to the S.W.; but, having advanced twenty-five days, he considered it prudent to proceed no further. Two large inlets and a deep bay were examined, besides an archipelago of small islands along the northernmost shore of the southernmost inlet, which is high, bold, and stratified, each inlet trending to the E.N.E., from eighty to ninety miles. The whole coast was strewn with driftwood, and many vestiges of Esquimaux encampments were met with, but of a very old date. On returning he was most surprised to find a party, consisting of eighteen natives, encamped upon the ice a few miles from the N.W. point of the northernmost inlet, in quest of seals; but, not understanding each other, no information could be obtained. They exchanged a few presents; and upon that day week he arrived on board, having remained out his forty-two days, thereby fulfilling his instructions to the letter.

In consequence of the above, I immediately decided upon proceeding to these people for the purpose of obtaining information that might determine the question relating to the Prince Albert, Wollaston, and Victoria Lands, as to their forming part of the American continent, or whether each was an island. Therefore, taking Mr. Miertsching (our invaluable interpreter) and twelve days' provisions, at 6 p.m. we started, and early upon June 3rd, fell in with them about ten miles to the northward of the point where they were first met with. They conversed freely with the interpreter, giving every information we required, relative to the trending of the coast, as far as they knew, which was some distance along Victoria Land. This they did by tracing upon a large sheet of paper which I brought for that purpose, continuing a sketch which Mr. Miertsching had made from the ship

to their tents, which they immediately comprehended, and as they were very particular in placing the Islands of "Lutton" and "Liston" with three smaller ones not mentioned in the chart, off Wollaston Land, I am, therefore, fully persuaded of its correctness, and only regretted that they could not go further (a tracing of which accompanies this narrative). They describe a large land opposite Wollaston, called "Nunavaksaraluk," (this, of course, is America,) to which they had never been, as they only trade with the Esquimaux to the S.E.; nor had they the slightest article of European manufacture about them. The use and sight of iron was perfectly new, all their implements being copper, their spears and arrows barbed with the same.

The copper ore is remarkably fine; but, not observing any when at the tents, the specimen was given me some time after quitting them; unfortunately we lost the opportunity of inquiring where it was procured, but I am inclined to think that it comes from the south-east tribes, in their bartering transactions, as the few and simple ornaments which they possessed were of that metal and obtained from thence. They are a kind, simple, and purely pastoral tribe, devoid of the knavish propensities which so strongly characterize those upon the Mackenzie and Colville, where intercourse with civilized man has demoralized the savage. Upon displaying the presents brought for them, the utmost propriety was observed. Although, doubtless, all men were anxious to participate in those treasures, there was not that eagerness to seize which rendered our interchanges with the other Esquimaux so troublesome; so far was it from these to do so, that it was with difficulty we could persuade them to accept without our receiving an equivalent, they inquiring of the interpreter, after each article was given them, what we wanted for it.

A piece of scarlet cloth, which I tied round a girl's neck, remained there until we were going away, when she ran up to Mr. Miertsching to ask what she was to give in exchange, and, when assured it was a gift from the chief, she gracefully acknowledged it with a smile. No weapons were remarked among them, except for the chase: their whole demeanour bespoke peace. They live near their present locality the whole year, not going any further to the northward, nor do they believe that there are any others in that direction; but to the S.E., along Victoria and Wollaston Land, the coast is thickly populated. It appears very extraordinary that they do not even possess traditional legends of their ancestors having been north, where the numerous traces which we meet with upon both sides of the Straits, as well as on the large Princess Royal Island, show that at one period the whole of this coast must have been densely populated; their language, Mr. Miertsching observes, is identical with that spoken upon the Labrador coast. At 9.30 we left this interesting people and returned to the ship, which we reached at 7 p.m. of the 5th, exceedingly gratified by the result of our pleasant excursion, our only misfortune being Cornelius Hullott, my coxswain, having both feet badly frost-nipped.

At 5 a.m. of the 7th, Mr. Wynniatt (Mate) returned with his party, having been fifty days under the tent. From his exploration of a portion of the south-eastern shores of Barrow Strait, as far as lat. $72^{\circ} 6' N.$, long. $107^{\circ} 42' W.$ (D.R.), whence the land was observed for about fifteen miles trending to the N.E., after rounding Point Peel, lat. $73^{\circ} 21' N.$, long. $112^{\circ} 30' W.$, the N.W. point of Prince Albert Land, he reports it to be in all respects, as to formation, the same as in this vicinity, for the distance of about forty miles, when, upon crossing a deep inlet, the land then assumed a N.W. aspect, when it became high, precipitous, and barren. No driftwood of any description was met with, but the ice lay against its base in heavy and unbroken masses. Further to the eastward a lesser one was circumambulated, having in it several smaller islands, with its southern shore formed of stratified cliff, having an elevation of about 800 feet.

On the 10th, at 7.45 am., Lieutenant Cresswell and party, having completed their nineteen days, returned from their search towards the S.W., (to lat. $71^{\circ} 10' N.$, long. $123^{\circ} 4' W.$), making in the aggregate fifty under the tent; during which he has coasted three sides of Baring Island, from the north shore of which he looked upon the Polar Sea, and upon the south walked twenty-four miles on it, both presenting the same smooth surface, which I consider to be attributable to the long prevalence of north-easterly winds at the termination of the navigable season setting the heavy ice which we encountered, and saw resting upon the western side of the island, over to the American and Asiatic shores, which may cause the great difficulty in rounding Point Barrow late in the season. Unfortunately, the weather became overcast, which limited his view to the northward, only allowing him to observe that the coast was high and bold.

On this excursion he met with four partitions of the ice, varying in breadth from ten to twenty feet, apparently running across the Strait; but, being provided with one of Halkett's valuable little boats, this obstacle, which would otherwise have caused a detour of many miles, was easily overcome. It is impossible to recommend these boats too highly upon a service of this description, where every article of weight is objectionable. Their whole fitting is but 25lb. When not required they form a platform on the sledge to stow the baggage, and when in use they are carried inflated upon the top. Thus, on two occasions, they have been of essential service, without the smallest inconvenience.

Lieutenant Cresswell erected a cairn, and deposited a cylinder within it upon a low beach near Cape Lambton. He also remarked the vestiges of Esquimaux encampments upon almost every part of the coast upon which he pitched his tent for the night, many of them thickly strewed with the heads of musk oxen, which denotes no paucity of those animals upon these lands; indeed, at the present time, both shores of the Strait are covered with wildfowl of every description, musk oxen, deer, hares, ptarmigan, and golden plover. This is certainly the most fertile part of the Polar regions, and must be the breeding place of those animals, which find rich pasturage among its

alluvial plains and valleys, unmolested by the Esquimaux, the traces of whose remains being overgrown with moss and rotten, have reference to a time long anterior. This party, with much spirit and zeal, performed their return journey of upwards of 160 miles in nine days and a half, under circumstances reflecting much credit upon them, the lateness of the season being unfavourable to so rapid an advance.

All being now on board and in excellent health, with the exception of three of the travellers suffering from foot-nips, our season's operations may be considered to have terminated fortunately; and, from the close examination which has been made over a vast extent of coast, whose direct distance, by observation, embraces 800 miles, to which a third may be added for the devious windings of the coast-line, without observing the slightest vestiges of any spar or other indication of civilized man having reached these shores. I am fully confident that the missing expedition under Sir John Franklin has never penetrated towards the Polar Sea in this direction, as some portion of the immense mass of stores, spars, or fitments with which those ships were provided must have been picked up, when driftwood of very inconsiderable dimensions did not escape observation. (A chart, showing the extent of discovery and course of each searching-party, accompanies this letter.)

I am also of opinion that Prince Albert Land is part of the continent of America, and that Point Peel is its N.W. extremity, and that the land thence is continuous to Cape Walker. The peculiar formation of its shores, from the very deep inlets which run into the interior, give the appearance of Straits, which, in reality, do not exist, as was apparently the case between Victoria and Wollaston Lands, and which is, very probably, the same between Cape Walker and North Somerset. My opinion is strengthened by the Esquimaux upon this coast speaking the same language as those of Hudson Straits, which Mr. Miertsching, the interpreter, thoroughly understands, and conversed fluently with them, while with those of the Colville and Cape Bathurst he found it sometimes difficult to do so. Consequently, I think it very probable that the forefathers of these have crossed from Hudson Straits, and kept the coast-line of Victoria and Wollaston Land, and have thus retained the purity of their language, which those upon the north coast of America have lost by constant intercourse with the Indians. I certainly should have considered it my duty to endeavour to decide this point by detaching a boat through the Dolphin and Union Straits, but I feel assured that service has been accomplished by Dr. Rae last year, as he evidently was not in this direction.

During the absence of the searching-parties the refitting of the ship was carried on, under the direction of Messrs. Sainsbury (Mate) and Court (second Mate), so that upon their return little remained but to get the boats from the eastern shore, and the tents and appurtenances which the shooting parties had upon each side of the Strait on board, the weather being unfavourable and the state of the ice becoming too precarious to allow of any persons being so far distant from

the ship. This being effected, as also the repairing and painting of a boat which is to be left with the provisions at the large Princess Royal Island, completed upon the 13th, we had the satisfaction of having every one on board, with the vessel thoroughly refitted, caulked, painted, and watered, and in every respect as efficient for the service we have to perform as the day we quitted Plymouth, with a trifling sick-list, principally from the effects of frost-nips and foot-soreness from the travelling. We now await, with no little anxiety, the disruption of these mighty masses of ice by which we are encircled and the consequences depending upon that event, which cannot be contemplated without deep apprehension.

The first indication of open water occurred to-day (July 7th, 1851), extending some distance along the shore of Prince Albert Land, about a mile in width. The ice in every direction is so rapidly decaying, being much accelerated by sleet and rain, with the thermometer standing at 45° , so that by the 14th that which for the last few days had been slightly in motion, with large spaces of water intervening, suddenly and noiselessly opened around the vessel, leaving her in a pond of forty yards; but, seeing no possibility of getting without its limits, we were compelled to secure to the floe which had for ten months befriended us, and, with the whole of the pack, gradually drifted to the southward, towards the Princess Royal Islands, which we passed on the eastern side, within half a mile.

On the 17th, at 10 a.m., being among loose ice, we cast off from the floe and made sail with the hope of getting upon the western shore, where the water appeared to be making, but without shipping the rudder, in consequence of being in the vicinity of several large floes, and, at 2 p.m., again secured to a floe, between the Princess Royal and Baring Islands (we passed over a shoal having 19 fathoms).

On the 20th, at 11.30 a.m., a light air from the S.W., which slackening the ice, gave hopes of making progress to the N.E., in which direction I was anxious to get for the purpose of entering Barrow Strait, that, according to circumstances, I might be enabled to carry out my original intentions of proceeding to the northward of Melville Island, as detailed in my letter to the Secretary of the Admiralty of July 20th, 1850: or, should such not be practicable, return to England through the Strait. The ship was cast off and a mile gained, when the wind died away, and we were again beset.

On the morning of the 22nd, open water appearing in the N.E., the rudder was shipped in expectation of a start, which was not, however, realised until the afternoon of the 23rd, when a light S.W. wind set the ice to the N.E., carrying us over a shoal upon which there was much ice, and we grounded in 13 fathoms. The corner of the floe to which we were attached, coming in contact with some of these masses, gave way, throwing pieces of twelve and fourteen feet square completely out of the water. It grazed the hard bottom with a sound not unlike distant thunder, as it crushed, crumbled, and upheaved, throwing an enormous mound up in its centre, as if under the influence

of volcanic agency, and then rent asunder; the part we were secured to remaining firmly grounded, while the other and lighter portion, being forced onwards with accelerated speed, came direct for our unprotected stern. To let go warps and anchors was but the work of a minute, and most fortunate were we in accomplishing it; as, ere they could be got on board, it struck the stern, forcing the ship ahead at the rate of two knots. A small space of open water, occasioned by the grounding of the floe, allowed of our advance; when, by warping and towing, we speedily got beyond its influence. Had our position been less favourable, nothing could have saved the vessel from momentary destruction.

At 11.30 p.m., with a breeze from the S.E., made sail through large leads of water towards the eastern side of the straits, and by the afternoon of the 24th, had nearly reached Point Armstrong, on which the ice was resting, and our course checked. There was much drift wood on the beach, mostly American pine. The cutter was consequently dispatched for a load, and some of the pieces appeared so fresh, that Mr. Ford, the carpenter, was of opinion that two years is the extreme of their quitting the forest. The wind veering to the westward during the night, set large bodies of ice into the water we occupied, which was filling rapidly. To prevent being forced on shore, we were obliged at 8 a.m. of the 25th, to run into the pack, where we drifted, according to the tide, about a mile and a half from the beach; but during the twenty-four hours made about two miles and a half to the N.E., from which I am of opinion, when taken with the quantity of drift wood that is thickly strewed along the beach, that on this side of the strait there is a slight current to the N.E., while upon the opposite one it sets to the southward, on which there is scarcely any wood, and our progress, while similarly situated, was in a southern direction.

We continued drifting in the pack, without meeting any obstruction, until 10 a.m. of the 1st of August, when a sudden and most unexpected motion of the ice swept us with much velocity to the N.E., towards a low point off which were several shoals, having many heavy pieces of grounded ice upon them, towards which we were directly setting, decreasing the soundings from 24 to 9½ fathoms. Destruction was apparently not far distant, when, most opportunely, the ice eased a little, and a fresh wind coming from the land, sail was immediately made, which, assisted by warps, enabled the ship to be forced a-head about 200 yards, that shot us clear of ice into 16½ fathoms, in which water we rounded the shoals. The ice then again closed, and the ship became fixed until the 14th, when the fog, which since yesterday had been very dense, again cleared, and discovered open water about half a mile from the vessel with the ice loose about her. At noon commenced warping, and at 3 p.m. passed into it with a light breeze from the N.E., that carried us some distance along the eastern shore. At 11 p.m. the fog was so thick that we were compelled to make fast to a floe, having, while standing in shore, stirred up the mud while in stays, shooting from no soundings at 25 fathoms to a quarter less 3,

which convinced me of the impracticability of remaining under way, as, had we been set on the beach, the ice, which came in before a freshening north-easter out of Barrow Sarait, would most effectually have detained us there.

Previous to quitting the floe, I was desirous of trying what effect blasting would have upon such a mass. A jar, containing 36lbs. of powder, was let down twelve feet into the water near the centre, the average thickness was eleven feet, and its diameter 400 yards. The result was most satisfactory, rending it in every direction, so that with the greatest ease we could effect a passage through any part of it.

15th—At 8 a.m. the fog cleared a little, which showed the base of the cliffs very close, although we were in 42 fathoms. Having water to the westward, we instantly made sail in that quarter; and at 11 a.m., being unable to see in any direction, again made fast, having carried away the spankerboom in breaking through a neck of ice, which forced the vessel from the wind, causing it to jibe. Our soundings increased to 62 fathoms, and the ice was ascertained to be setting bodily a mile and a half an hour to the W.S.W., so that upon the weather clearing at 30 minutes a.m. of the 16th, we found the vessel had been drifted fifteen miles to the S.W. As there was, however, water to the eastward, every exertion was made to reach it by warping; and at 3 a.m. succeeded, working along the eastern shore to ascertain what probability existed of being able to round the pack, and thus get into Barrow Straits, from which we were not distant more than 25 miles.

At 9 a.m. all hopes disappeared, as a clear view from the crow's-nest discovered the ice to be closely packed, resting upon Point Lady Ross, extending in one unbroken line to the opposite side of the strait. This determined me to give up all idea of prosecuting our search in this direction. Having been foiled in attempting this passage the latter end of one season, and at the commencement of another, I considered it not practicable, except under the favourable circumstances of a continuance of south-westerly winds, which would drive the ice into Barrow Strait, but I imagine there would be little difficulty in coming from the N.E., from which quarter we found the winds prevail. Our greatest advance in that direction was lat. $73^{\circ} 13' 43''$ N., long. $115^{\circ} 32' 30''$ W.

Accordingly at 9.30 a.m. we bore up with the intention of running to the southward of Nelson Head, and continue our search along the western side of Baring Island, with the hope of reaching the entrance of Barrow Strait by that route; as, from the report of Lieutenant Cresswell, I felt convinced that by Banks Land there is a passage from the Polar Sea. At 4 p.m. passed the Princess Royal Islands with a fine breeze; not a particle of ice to be seen in any direction, which only a month previous had presented enormous floes, and heavy grounded masses lying against their base and upon the shoal connecting them, which we considered had been there for years, and likely to remain for many more; even the huge pieces which had been thrown

upon the eastern shore had vanished; so that every vestige of that formidable element had passed away, which for nearly eleven months had held us in its trammels.

On the 17th, while near Nelson Head, with a fine breeze from the S.E., we experienced a heavy swell from that direction, causing the vessel to pitch the hawse-holes under, and send the sea as far aft as the fore hatchway. A circumstance so unusual was hailed as a favourable omen, being a convincing proof that we were in much open water; and at 11.30 p.m. rounded the head. The land, for about 25 miles to the westward, is remarkably bold and lofty, where Cape Lambton, jutting out and rising perpendicularly 1,000 feet, presents a grand termination to it in that direction, whence it gradually recedes to the N.W., where it loses this bold character, partaking more of that remarked in the Prince of Wales Strait, being ranges of hills, gradually sloping from the interior to the shores, having fine valleys and extensive plains, several small and one considerable river, the water from the latter discolouring the sea two miles from its mouth, likewise many small lakes and harbours, which, however, would be only of utility for boats, as a heavy surf was breaking across their entrances; much drift wood strewed the beach, and the land was well covered with verdure, upon which were large flocks of geese feeding, while ducks were flying in great numbers, and I have little doubt that a walk a short distance inland would have discovered herds of deer and musk oxen. Nothing that was on the coast could escape observation, or could anything be more favourable for the object we had in view, as, with a fair wind and fine clear weather, we ran along it, from one to two miles distant.

At 4 p.m. of the 18th, being off a very low spit of land, (Point Kellett,) which extended to the westward for about twelve miles in the form of a horseshoe, having its sea side thickly studded with grounded ice, while its interior was exempt from any, I sent Mr. Court (second master) to examine, who reported an excellent and commodious harbour, well sheltered from N.W. to south, varying five fathoms within ten yards of the beach, which was shingle, and covered with drift wood. A set of sights were obtained, and a cask, containing a notice, was left there; its position lat. $71^{\circ} 56' N.$, long. $125^{\circ} 29' W.$ From this the land turns abruptly N.b.E., and a great change takes place in its general aspect, gradually becoming low and flat, so that near the beach it is scarcely discernible, resembling separate sand banks, but, upon closing it, a low spit, barely above the level of the water, was remarked connecting them. The lead may be considered an infallible guide along the whole of this coast, as the soundings are regular from 3 to 30 fathoms, at from one to four miles off shore.

On the morning of the 19th we left this low coast, and passed between two small islands lying at the entrance of what appeared a deep inlet, running E.S.E., and then turning sharp to the N.E. It had a barrier of ice extending across, which prevented any examination. Wishing to keep between the northernmost of these islands and the

main land, to avoid the pack, which was very near it, we narrowly escaped getting on shore, as a reef extended from the latter to within half a mile of the island. Fortunately, the wind being light, we rounded to with all the studding sails set, and let go the anchor in $2\frac{1}{2}$ fathoms, having about four inches to spare under the keel, and warped into four, while Mr. Court was sent to find a channel, in which he succeeded, carrying 3 fathoms, through which we ran for one mile, and then continued our course in eight, having from three to four miles between the ice and land.

At 8 p.m. were near two other islands, the ice resting upon the westernmost, upon which the pressure must have been excessive, as large masses were forced nearly over its summit, which was upwards of forty feet. Between these and the main we ran through a channel in from 9 to 15 fathoms, when an immediate and marked change took place in the general appearance and formation of the land; it became high, precipitous, sterile, and rugged, intersected with deep ravines and water-courses, having 65 a quarter of a mile, and 15 fathoms one hundred yards from the cliffs, which proved exceedingly fortunate, as the whole pack, which had apparently only just broken from the shore, was within half a mile, and in many places so close to it that, to avoid getting beset, we had nearly to touch the land. Indeed, upon several occasions the boats were compelled to be topped up, and poles used to keep the vessel from off the grounded ice, which extends all along the coast; nor could we round to, fearful of carrying the jibboom away against its cliffs, which here run nearly east and west. The cape forming its western extreme I have called Prince Alfred, in honour of his royal highness.

There were two apparently good harbours about twenty miles to the eastward of the Cape; the westernmost had a breakwater half a mile in length, twenty feet high, facing the north, with entrance on its east and west sides about sixty yards in breadth; the other was circular, about three-quarters of a mile in diameter, with its entrance on the west side. Our critical position would not admit of any detention, otherwise they would have been sounded, being very anxious to find a secure retreat in the event of having to winter on this coast.

The weather, which had been fine, with a S.E. wind, veered to the W.S.W., bringing fog and rain, so that on the morning of the 20th our further progress was impeded by finding the ice resting upon a point, which formed a slight indentation of the shore, and was the only place where water could be seen. To prevent being carried away with the pack, which was filling up its space, we secured to the in-shore side of a small but heavy piece of ice, grounded in 12 fathoms, 74 yards from the beach; the only protection against the tremendous Polar ice, (setting a knot per hour to the eastward before a fresh westerly wind,) which at 9 p.m. placed us in a very critical position, by a large floe striking the piece we were fast to, and caused it to oscillate so considerably, that a tongue, which happened to be under our bottom, lifted the vessel six feet, but, by great attention to the anchors and

warps, we succeeded in holding on during the conflict, which was continued several minutes, terminating by the floe being rent in pieces, and our being driven nearer the beach. From this until the 29th we lay perfectly secure, but at 8 a.m. of that day the ice began suddenly to move, when a large floe, that must have caught the piece to which we were attached under one of its overhanging ledges, rising it perpendicular thirty feet, presented to all on board a most frightful aspect. As it ascended above the foreyard much apprehension was felt that it might be thrown completely over, when the ship must have been crushed beneath it. This suspense was but for a few minutes, as the floe rent, carrying away with it a large piece from the foundation of our asylum, when it gave several fearful rolls and resumed its former position; but, no longer capable of resisting the pressure, it was hurried onward with the drifting mass. Our proximity to the shore compelled, as our only hopes of safety, the absolute necessity of holding to it; we consequently secured with a chain stream and hemp cable, three 6 and two 5-inch hawsers, three of which were passed round it. In this state we were forced along, sinking large pieces beneath the bottom, and sustaining a heavy strain against the stern and rudder; the latter was much damaged, but to unship it at present was impossible.

At 1 p.m. the pressure eased, from the ice becoming stationary, when it was unhung and laid upon a large floe piece, where, by 8 a.m., owing to the activity of Mr. Ford, the carpenter, who is always ready to meet any emergency, it was repaired, just as the ice began again to be in motion, but as the tackles were hooked, it was run up to the davits without further damage. We were now setting fast upon another large piece of broken floe, grounded in nine fathoms upon the debris formed at the mouth of a large river. Feeling confident that should we be caught between this and what we were fast to the ship must inevitably go to pieces, and yet being aware that to cast off would certainly send us on the beach, from which we were never distant eighty yards, upon which the smaller ice was hurried as it came in contact with these grounded masses, I sent John Kerr, (gunner's mate,) under very difficult circumstances, to endeavour to reach it, and effect its destruction by blasting. He could not, however, find a sufficient space of water to sink the charge, but remarking a large cavity upon the sea face of the floe, he fixed it there, which so far succeeded that it slightly fractured it in three places, which at the moment was scarcely observable from the heavy pressure it was sustaining. By this time the vessel was within a few feet of it; every one was on deck in anxious suspense, awaiting what was apparently the crisis of our fate; most fortunately the stern post took it so fairly that the pressure was fore and aft, bringing the whole strength of the ship to bear. A heavy grind which shook every mast, and caused beams and decks to complain as she trembled to the violence of the shock, plainly indicated that the struggle would be but of short duration. At this moment the stream cable was carried away, and several anchors drew. Thinking that we

had now sufficiently risked the vessel, orders were given to let go all the warps, and with that order I had made up my mind that in a few minutes she would be on the beach, but, as it was sloping, conceived she might still prove an asylum for the winter, and possibly be again got afloat, while, should she be crushed between these large grounded pieces, she must inevitably go down in ten fathoms, which would be certain destruction to all: but before the orders could be obeyed, a merciful Providence interposed, causing the ice, which had been previously weakened, to separate into three pieces, and it floated onward with the mass, our stern tightly jammed against, but now protected by it. The vessel, which had been thrown over fifteen degrees, and risen bodily one foot eight inches, now righted, and settled in the water; the only damage sustained was several sheets of copper ripped off and rolled up like a sheet of paper, but not a fastening had given way, nor does any leakage indicate the slightest defect.

By midnight the ice was stationary and everything quiet, which continued until the 10th of September; indeed, from the temperature having fallen to 16° , with all appearance of the setting in of the winter, I considered our further progress was stopped until next year. The crew were employed collecting ballast (of which they obtained fifty-five tons), and other arrangements making for such an event. Shooting and other parties made daily excursions inland; in which rambles an exceedingly old Esquimaux encampment was met with, and a most interesting discovery of a range of hills, composed of one entire mass of wood in every stage from a petrification to a log fit for firewood. Many large trees were among it, but, in endeavouring to exhume them, they were found too much decayed to stand removal; the largest piece that we have been able to bring away being three feet ten inches in girth, and seven in length; these were found by Messrs. Sainsbury and Piers, at an elevation of 300 feet above the beach, (in lat. $74^{\circ} 27' N.$, long. $122^{\circ} 13' 15'' W.$), which is strewed with chips and small bits of wood, as are the water-courses and ravines as far as any person has walked inland, evidently washed down by the thaw from those ligneous hills. The country has fine vallies, well covered with verdure, and at some period of the year must be frequented by large herds of animals, as the heads of musk oxen and the well picked carcasses of deer are everywhere met with, many quite fresh. Two large wolves were disturbed in the act of finishing a fawn which they had just killed, but only two musk oxen were seen, besides a few hares and ptarmigan shot by our parties.

To day the temperature, from a change of wind to the southward, rose to 29° , accompanied by rain, which had the effect of so loosening the ice that the main pack separated from the ship, opening a lane of water, about sixteen miles to the eastward, varying in breadth from 50 to 200 yards, which, however did not promise any release to the vessel, until 11.50 a.m. (while the officer of the watch and quartermaster were examining the tide pole fixed on the beach, through a hole cut in the ice, about forty yards from the shore, which puzzled

them both, to find that they could not keep the guage erect, as it slipped from their hands while endeavouring to do so) it noiselessly opened, and drifted towards the pack, which it was impossible to avoid, and were carried to the N.E. a knot per hour, at the distance of half a mile from the shore, in soundings from 107 to 134 fathoms. All methods by warps and saws to extricate the vessel from her perilous position proving abortive, having masses of ice frozen to her bottom, recourse was had to gunpowder, which fortunately effected her release by the expenditure of 150lb., in charges of from 3lb. to 20lb., according to the distance from the vessel. This by any other means could not have been achieved, and saved us from being set against the thick grounded ice, which was resting upon Point Colquhoun, (certain destruction,) into which we should have been hurried by five minutes' longer detention, having barely time to make sail and shoot the vessel, without rudder, clear of the piece we had been so long frozen to, into the water, cutting the hawsers, which canted us, just as it entered the solid mass, upon the weather edge of which we twice grazed as we worked into the land; when, at 7 p.m. of the 11th, we again secured to a large grounded floe, seventy yards from it, in 10 fathoms.

At 10 p.m. our position was hazarded by a portion of the main pack, which had extended itself over the open water, coming in violent collision with the corner of our floe, turning it partially round; while the smaller ice pressed with so much strain upon the ship, that the anchors began to draw, and hawsers carry away. The stream chain luckily held until the pressure ceased, by the pack giving way, and our being pushed a few fathoms nearer the shore.

At 2.50 a.m. of the 13th, a lane of water opened about sixty yards from the vessel; and towards noon a rise in the temperature of 45° , with heavy rain, created hopes of liberation, an object of the highest importance, not only with respect to the views with which the expedition was fitted out, but for the safety of the ship, at present in a most exposed position, being on the eastern side of a large bay, open to the whole pressure of the Polar pack, and surrounded by masses of ice sixteen to eighteen feet thick, while the grounded floes were from thirty to sixty-seven feet in depth. To remove these impediments, or at all events endeavour the formation of a dock, blasting was had recourse to, with charges of from 16lb. to 65lb.: those made little impression, except near the explosion; therefore, a 26 gallon rum cask, containing 255lbs of gunpowder, was now sunk five fathoms among those large masses, at thirty yards from the vessel. Its effect was most conclusive, shivering them to atoms, rending that to which we were attached, and which was sixty-seven feet thick on the outer base, and thirty-five on its inshore edge, asunder, without the concussion being very much felt on board. All hands were employed in floating the loose ice into the water, having vainly attempted to force the ship through, aided by a strong wind, and a nine-inch hawser brought to the patent capstan, (such resistance from merely this sludge is incredible,) which work was continued until the afternoon of the 14th, when all was drifted

away, leaving a snug harbour, forty yards in width, flanked by heavy grounded floes, forming an excellent protection. The rudder was now hung, in anticipation of a start on the following morning; but at 11 p.m. the wind freshened from W.N.W., bringing the whole pack down upon this coast, filling our little harbour with loose and small ice, its entrance being too narrow to admit the large pieces. An enormous floe, however, carried away one of our flanks, but without disturbing the vessel in the slightest.

At daylight on the morning of the 15th these expectations were sadly blighted, it blowing hard from W.N.W., with sleet and snow; nor was a drop of water to be observed in any direction, and the ice apparently was again unhung, which, with the thermometer at 14°, scarcely afforded any probability of its being reshipped this season. In the course of the forenoon Messrs. Court (second master) and Newton (ice mate) were sent to examine the coast and state of the ice to the eastward of Point Colquhoun, distant about four miles. Their report was such as to confirm the opinion previously entertained, with this consolation, that the position which we occupied was better than any they had seen, as the ice to the eastward was much larger and more massive than that we were encompassed by. The soil on this coast is composed of gravel and limestone; and in the valleys near the beach the quantity and richness of the moss is quite surprising; but on reaching the first range of hills, about a mile distant, a more sterile landscape never met the eye. The whole country appears nothing but one mass of limestone, without the slightest vegetation; the traces of animals, so numerous fifteen miles further west, are no where in this barren ground to be met with.

On the 17th the westerly wind ceased, and was succeeded by one from the eastward, with a rise of temperature from 11° to 21°, which, by daylight of the 19th, had increased to 32°, with water extending along the coast three miles in width. We immediately cast off, and at 7 a.m. rounded the point, whence the land falls back E.S.E. Our progress was slow from many causes; the copper being torn and projecting from four to twelve inches from the bottom, light winds, and an ice-encumbered sea, so that at 3 p.m. our further advance was arrested by the pack touching the land, and extending with unbroken line to the northward as far as the eye could reach. Our day's work did not exceed fifteen miles, when we were compelled to make fast to the land ice, which along the whole coast is of the most massive and terrific dimensions I have ever witnessed. There was little selection of berth on a coast line nearly straight; but a slight indentation, protected east and west by two large pieces of a broken floe thirty feet above the water, gave hopes of some shelter; when, at 6 p.m., the water and loose ice, which was before perfectly still, suddenly rushed forward at the rate of two knots an hour, and, striking against the vessel, forced her from her anchors with such violence that she was driven astern upon a hard point of the floe, which rose her twelve inches, but, fortunately, held until the rush was over, which swept our

eastern bulwarks, but did no other damage. We then warped to the western side of the floe, where a small space was blasted for the bow, in which we quietly remained during the night.

At daylight of the 20th, finding the ice loose and drifting, though a perfect calm, a mile and a half an hour to the eastward, cast off and, laying hold of a large floe piece, was dragged along close by the grounded ice, which, with some difficulty, was avoided by shifting round the floe as it canted towards us.

At noon, having a light air from the westward, made sail; but soon had reason to regret it, as it shortly failed and the ice filling the land water it gradually forced the vessel into the pack, which hitherto we have been so anxious and careful to avoid. As the only hope of navigating this sea consists in keeping close to the shore, it now became evident that every exertion must be made, by warping, to regain the land, which, under the circumstances of the ice being in motion, with much that was small and loose filling up the intervals between the larger pieces, which allowed a secure footing for the men, was difficult, laborious, and anxious in the extreme, as, with every precaution, they frequently fell in. After seven hours' incessant work we succeeded, as the night closed, in reaching a huge and solid floe that had just been upturned, three of its sides being twenty-five feet perpendicular, grounded in 29 fathoms on the outer edge and having 10½ upon the inner one, around which was scattered much debris, part of its original self that had crumbled from the pressure against a cliff, up which it had been forced full seventy feet, and where a large mass was still remaining about a mile to the westward of a Cape (Austen) 400 feet in height, which is stratified, and of the same description as Nelson Head, where we secured for the night.

At daylight of the 21st, a thick fog, with hail, permitted a very circumscribed view; but, as the ice appeared loose in the direction of the Cape, at 5 a.m. started, and grazing round it within fifteen yards found ourselves in a large bay, entirely covered with ice, formed by another cape three miles S.E., compelling us, at 6.30 a.m., to make fast immediately beneath the cliff, whose summit nearly plumbing the hatchways rendered our position very unsafe, many fragments appearing so loose from the action of frost and water that a slight concussion would have brought them down. At 11 a.m. the ice eased a little from the land, when we again endeavoured to force towards the S.E., aided by a westerly wind and warping; but in the afternoon the fog became so dense, with an easterly breeze, that we made fast to the land floe; in which a small dock was formed, with the assistance of a little powder, about a mile from our forenoon's position, remaining until the morning of the 22nd, when a little progress was made towards the S.E., our operations by warping being brought to a termination.

At 1 p.m., having reached the Cape (Crozier) upon the south-eastern side of which the ice was resting, therefore, securing to a ridge twenty feet in height, lying at its base, I proceeded with Mr. Court to its summit for the purpose of examining the coast line. Towards the

S.E., a deep bay, extending thirty miles in that direction, filled with ice, which was commencing to move bodily to the westward and of a much less formidable character to that we had been subjected to, while what was lying along the shore was small and widely detached, well repaid the toil of ascent; indeed, since rounded by Cape Austen, it has lost much of its terrible aspect, which led to the inference that we were fairly in Barrow Strait, and that the main polar pack takes a direct line from the last mentioned Cape to the E.N.E., and that that which fills these Bays and is carried down Barrow Strait is the comparatively small ice which drifts from its southern edge, as we have invariably remarked that there is a decidedly easterly current, which impels the enormous polar floes on that course, while the lighter, influenced by wind, is oftentimes setting in an opposite direction.

This Cape (Crozier) is 250 feet perpendicular, presenting among its debris many interesting geological specimens; it is composed of lime and sandstone, having fossiliferous shells imbedded, also pieces of coal and petrifications of wood, identical with what has been met with upon other parts of this large Island and upon the Princess Royal Isles.

At 3.30 a.m. of the 23rd, although not daylight, open water was ascertained to be at hand from the dark appearance of the horizon to seaward; the vessel was cast off and, standing in that direction, found we had not been deceived. The wind during the forenoon coming from the westward enabled our running close along the shore, on which still rested a line of thin ice rendering the entrance of what appeared three good harbours inaccessible. The land was much less rugged, having small hills gradually sloping to the beach, and large valleys well calculated for the pasture lands of animals, but no particle of driftwood could be observed, which article has not been seen, excepting the small chips near the ligneous hills, since rounding Point Kellett, on the western shore.

At 5.30 p.m. our course was nearly obstructed from the ice resting upon a point about two miles distant: the studding sails were taken in but almost immediately reset, as it gradually opened, allowing just sufficient space for our passage by tipping up the lower booms. The shore shortly trending more to the southward increased our water, but snow and thick weather with night coming on rendered the land (not 200 yards distant) barely discernible. Most anxious, however, at the close of the season to embrace every opportunity of getting to some place of security our course was continued with easy canvas when, under other circumstances, we should have most assuredly secured for the night; and at 7.30 p.m., with the lead going, went, from 15 fathoms, upon a mud bank, having only six feet under the bow, and at the distance of ten feet from the stern only 18 inches, while the stern was in 5 fathoms. The stream anchor and cable were laid out, which service was well performed by Messrs. Wynniatt, Sainsbury, and Court, it requiring four boats in consequence of the freshening N.W. gale and pieces of loose ice with snow, which, caking as it reached the water, formed so thick a coating over its surface and offer-

ing such resistance that it was scarcely possible to pull through, which, with clearing the forehold and warrant officer's storerooms, and bringing all the weight abaft the mizen-mast, at 10 p.m. we were enabled to heave off, and brought up with both bowers in 6½ fathoms. The remainder of the night was occupied in restowing the holds, weighing the stream anchor, &c., so that at daylight of the 24th we were in perfect readiness to move.

On a view of our position we found that we were on the N.W. side of a large bay, whose eastern limit bore N.E., eight miles, which we subsequently found formed the western point of Banks Land, and running to the S.S.W. about seven miles, which was rapidly filling up with ice flowing in before a fresh gale from the Polar Sea.

Still wishing to see if any possibility remained of getting down Barrow Strait, we weighed and stood as far as the ice would allow to the N.E., when, observing from the crow's-nest no water in that direction, I determined to make this our winter quarters, and having remarked on the south side of the bay, on which we had grounded, a well protected bay, Mr. Court was dispatched to sound it; and, shortly making the signal that there was sufficient water, we bore up, and at 7.45 a.m. we anchored in 4½ fathoms, and that night were firmly frozen in, in what has since proved a most safe and excellent harbour; which, in grateful remembrance of the many perils that we had, during the passage of that terrible Polar Sea, escaped, in reaching, we have named the "Bay of Mercy;" thus finally terminating this short season's operations, being actually only five entire days under way. Preparations were now made for housing in and everything was completed, except hauling over the cloth, by October 1st, which was not done that the daylight should be enjoyed as long as possible and a saving in lights effected. On that day, as a precautionary measure, the crew were placed upon two-thirds allowance of all species of provisions.

On the 4th Mr. Court was sent with a travelling party to connect our position with that visited by Lieutenant Cresswell in May last, from which we were only distant eighteen miles. On the 7th he returned, which service completed the search round the entire coast line of this island. He reported open water a few miles from the shore, which, gradually extending, reached the cliffs of Banks Land. Upon the 6th, with two men he was examining a few miles to the south-eastward of his tent, that detached the heavy grounded land ice from their base, drifting the whole party off shore to the N.W., fortunately being unencumbered with the sledge, they succeeded, with difficulty and by much agility, jumping from piece to piece, in regaining the shore, and that evening no ice could be remarked in the Strait, the whole being set into the Polar sea.

On the 10th Mr. Sainsbury (mate), with a travelling party, went to examine an inlet, which appeared to run some distance to the S.W. from the south side of the bay, but, upon the following day, returned, finding it extended only twelve miles, the water shoaling, until it finally

terminated in a large marsh, which, from the numerous traces of animals and wild fowl, may be considered as a favourite resort during the summer. As there appeared much game in the vicinity, and the weather continuing mild, shooting parties, under Lieutenant Cresswell, Messrs. Wynniatt, Court, and Piers, and the Marines, under Sergeant Woon, were established in different directions between the 9th and 23rd, so that, with what was killed from the ship, our supply of fresh provisions on the commencement of the winter consisted of 9 deer, 53 hares, and 44 ptarmigan, all in fine condition, the former having from two to three inches fat.

The weather during the winter has been much more boisterous, but in each month several degrees more mild than was experienced in the Prince of Wales Strait, nearly a degree and a half further south, last year, which, in conjunction with the animals remaining in numbers in this locality the entire winter, must, I suppose, be taken as a proof of its mildness, although lying exposed to the north-west winds, direct from the Polar Sea, which, upon our first being frozen in, led to the anticipation of having to encounter a severe season. In consequence of our favoured position, the crew were enabled to ramble over the hills almost daily in quest of game, and their exertions happily supplied a fresh meal of venison three times a fortnight, with the exception of about three weeks in January, when it was too dark for shooting. The small game, such as ptarmigan and hares, being scarce, were allowed to be retained by the sportsmen as private property. This healthy and exhilarating exercise kept us all well and in excellent spirits during another tedious winter, so that on the 1st of April we had upwards of 1,000lb. of venison hanging at the yard-arms.

All wearing so fair an aspect, and being desirous of visiting Winter Harbour, Melville Island, with the hope of meeting an officer there with whom arrangements might be made in the event of any accident occurring which would render it necessary to quit the ship, I proceeded on the 11th with Mr. Court (second master) and a sledge party for that port, but in consequence of thick weather coming on a few hours after leaving the vessel, and continuing unintermittingly for several days, we did not reach until the 28th. On the 15th we observed a very lofty Cape, bearing N.E.b.E. 30 miles, which I have called Queen Victoria, in honour of her most gracious Majesty, (the same which had been remarked last autumn from the high land near the ship); the land to the north-east forms the bottom of Lyddon Gulf, while that upon its western side stretched to the N.W. in one unbroken mountain line as far as the eye could reach.

At Winter Harbour we obtained a set of sights for the purpose of testing our chronometers, which were ascertained to be going exceedingly well; and, having deposited a notice of our visit under the same cairn that Lieutenant M'Clintock left one last year, upon a large fragment of sandstone, bearing this inscription, viz.: "His Britannic Majesty's ships *Hecla* and *Griper*, Commanders Parry and Lyddon, wintered in the adjacent harbour during the winter of 1819-20, A. Fisher,

sculpsit," at 6 p.m. commenced our return, travelling upon flat ice nearly the entire way, accomplishing in ten days what occupied eighteen upon the outward trip, and reached the ship upon the 9th of May, when I had the gratification of receiving the most satisfactory reports concerning our sanitary condition, and likewise that the supply of venison continued abundant, having twenty head of deer on board. In consequence the ration of venison was increased to one pound and a half thrice a week, as the crew were at hard work, clearing the holds, collecting and bringing off ballast; the latter a very laborious occupation, from the large space they had to search over in picking up a sufficiency of stone to complete one hundred tons, which was not accomplished until the 25th, after which we commenced watering, obtaining it from a lake about a mile from the ship, by boring through seven feet ten inches of ice, and cutting a reservoir to receive it; this forming a species of Artesian well, which gave a bountiful supply, enabling the watering to be completed by the 13th of June, previous to the commencement of the thaw, which was a great advantage to the crew, as it kept them dry footed.

About this time flocks of wild fowl, consisting of swans, geese, and all descriptions of ducks, began to arrive, but finding no water, merely took a flight round the north-west extreme of the land, and returned to the southward, from which it would appear that the season is late. Indeed, the land is as much covered with snow as in the depth of winter, nor was it until the 25th of the month that any alteration took place, when small streams commenced trickling down the sunny slopes of the ravines, and little ponds formed upon the ice. On the 30th we had an entire day of heavy snow, with one of the most severe northerly gales I ever witnessed at so advanced a period of the season; and upon the 1st of July found that the ice had increased its thickness four inches during the last month, being seven feet two inches, a most unusual circumstance, as both at Port Leopold and in the Prince of Wales Strait we found a very considerable decrease. During the month of June the temperature likewise was very low, showing an average of $31\frac{1}{2}^{\circ}$.

The appearance of the crew at their monthly inspection elicited a more unfavourable report from the surgeon than I have hitherto received. Evident symptoms of debility among the generality of them, and sixteen having a decided scorbutic tendency, plainly the effect of the late heavy labour in ballasting and watering; but as all our work is now on board, their gradual return to perfect health may be anticipated, without encumbering the sick list.

On the 8th of July Sergeant Woon, of the Marines, while in pursuit of a wounded deer, unexpectedly met a couple of musk bulls, which he succeeded in killing, evincing the most soldierlike coolness and intrepidity during the entire transaction. Having expended his ammunition, as one of the wounded and infuriated monsters rushed towards him, he fired his worm when at a few yards, but without much effect, as he continued his advance, evidently, however, weak from loss of

blood, till he had reached within six feet, when putting his head to the ground previous to his final rush, the Sergeant, as his last resource, fired his iron ramrod, which entering behind the left shoulder, passed through the heart and out at the right flank, dropping him dead at his feet. They are fine animals, whose gross weight are 1,330lbs., and yield, after deducting offal and hunter's perquisites, 650lbs. of excellent beef, which providential supply is most opportune, as our reindeer were expended last week.

Two Esquimaux huts upon a small islet in the centre of the bay, and the site of an encampment on a peaked hill on the western shore of the main land, are the only indications we have met with of that extraordinary and hardy people having at some period long past inhabited this coast; we have now discovered traces of them upon all sides of this island. But where are they gone, for certainly there is not one upon it at present, or why should they have quitted an island so abounding throughout the entire year with game; except, as the Esquimaux interpreter observes, there may be a great paucity of seals, without which luscious food they cannot exist, and this may be the reason, as we have seen very few.

During the month of July, the little thaw, which a temperature falling to 31° every night and rising only to 39° and 42° in the day could effect, has not been much, but the water draining from the land rotted the ice round the entire bay and detached it from 100 to 300 yards from the shore, so that it has power to move, and only requires open water in the offing to allow of its going out, which joyful event we entertained hopes of realising, as upon the 10th of August some lanes of water were observed to seaward, and along the cliffs of Banks Land there was a clear space of six miles in width, extending along them as far as the eye could reach from the north-west hills at an elevation of one thousand feet; and on the 12th, the wind, which had been for some time from the northward, veered to the south, which had the effect of separating the sea ice from that of the bay entirely across the entrance; but, shortly shifting to the north, it closed again, and never after moved.

On the 20th the temperature fell to 27°, when the entire bay was completely frozen over, and on the 27th to 19°, so that the whole aspect was cheerless in the extreme, the young ice being two and a half inches thick, so that the whole bay may be safely perambulated; indeed, the summer was fairly gone, for the uplands are all snow-covered, the wild fowl all departed, and the flowers, which gave cheerful variety to this bleak land, are all withered. The very season may be considered as one long sunless day, as since the latter part of May that luminary has been scarcely visible, or his influence felt, upon those icy masses which block Barrow Strait entirely across; nor do I imagine that the Polar Sea has broken up this season, as not a drop of water has been seen in that direction.

During July and the early part of August, the crew were daily employed gathering sorrel, of which there was a great quantity, upon the

hills in this vicinity, and eaten as a salad with vinegar, or boiled, when it resembled spinach, was found a most desirable anti-scorbutic, and a great benefit to all, being exceedingly relished; but that hardy and miserable herbage could not withstand this rigorous summer beyond the 15th of the month.

For several days the ice had been perfectly stationary, and no water visible in any direction, that along the cliffs of Banks Land being frozen, so that I felt assured that the winter had fairly set in, and all hopes of any release this year totally annihilated, the young ice being five inches thick. Having previously determined what course I should adopt under circumstances thus unfavourable, on the 8th of September I announced my intention to the crew of sending half of them to England next April, with all the officers not in charge of stores, *via* Baffin Bay (taking the boat from Cape Spencer) and the Mackenzie, detaining the remainder with the hope of extricating the vessel during the summer of 1853, or, failing that, to proceed with sledges, in 1854, by Port Leopold, our provisions admitting of no other arrangement; although we had already been twelve months upon two-thirds allowance, it was necessary to make preparations for meeting eighteen months more, a very severe deprivation and constitutional test, but one which the service we are employed upon calls for. The vessel being as sound as the day she entered the ice, it would therefore be creditable to desert the ship in 1853, when a favourable season would run her through the straits, and admit of reaching England in safety, where the successful achievement of the long-sought for and almost hopeless discovery of the North West Passage would be received with a satisfaction that will amply compensate for the sacrifices made and hardships endured in this most trying and tedious accomplishment. This statement was well received, and its execution will, I hope, be carried out without difficulty.

On the 17th the wind shifted to the S.S.E., and blew hard, which a few days earlier might have been attended with favourable results; but now it had no effect. The ice being eight inches thick, was too firm to be moved. The sails were consequently unbent, and preparations commenced for housing in.

24th.—This is the anniversary of our arrival. The contrast is very remarkable. We entered the bay with temperature at 33°, and not a particle of ice in it: to-day, the thermometer stands at 2°, with ice which had never moved, and every indication of a severe winter.

On the 25th of October, closed the hatchways and housed the vessel over; it becoming damp and cold between decks, the vapour funnels, of which there are five, giving a sufficient ventilation, those over the hatchways being never closed, carry off all impurities, so we enjoy a clear wholesome atmosphere below. This has very much contributed to the excellent preservation of our health: and the 26th being the second anniversary of our discovery of this passage, and the last that we should all be together, the occasion was celebrated by a small additional allowance of provisions and an extra glass of grog, which had

the effect of putting all in high spirits, so that the evening was passed most jovially in singing and dancing.

On November 8th completed the banking up and other outside work, finally terminating our winter arrangements on the 18th, by covering the upper deck with eighteen inches of snow.

The deer for the last few days have been coming from the southward to their winter quarters among those ravines and sand hills; ninety have been met with at one time, and forty at another; but so very wild that few have been shot. Our two seasons' experience show that these animals do not migrate to the south as is generally supposed, but bear the extreme rigour of the climate, and exist upon the scanty herbage, chiefly the dwarf willow, from off which they break the snow with their feet, which tapping can be heard at a considerable distance when the weather is calm, and frequently leads to their discovery. The hares and ptarmigan have also descended from the high ground to the sea ridges, so that a supply of game has been kept up during the winter, which has enabled a fresh meal to be issued twice weekly, and the usual Christmas festivities to pass off with the greatest cheerfulness. As it was to be our last, the crew were determined to make it memorable, and their exertions were completely successful. Each mess was gaily illuminated and decorated with original paintings by our lower-deck artists, exhibiting the ship in her perilous positions during the transit of the Polar Sea, and divers other subjects: but the grand feature of the day was the enormous plum-puddings, some weighing 26lbs., haunches of venison, hares roasted, and soup made of the same, with ptarmigan and sea pies. Such dainties, in such profusion, I should imagine never before graced a ship's lower deck. Any stranger to have witnessed this scene could but faintly imagine that he saw a crew which had passed upwards of two years in these dreary regions, and thrown entirely upon their own resources, enjoying such excellent health, so joyful, so happy; indeed such a mirthful assemblage under any circumstances would be most gratifying to any officer; but in this lonely situation I could not but feel deeply impressed, as I contemplated the gay and plenteous sight, with the many and great mercies which a kind and beneficent Providence had extended towards us.

March 1st, 1853.—The most dreary and dark time is now passed; and severe and trying it has been. The cold of the last two months was excessive, January showing a mean of 44°, being 17° below the corresponding period last year; and one day the temperature fell to 65°, and for twenty-four hours actually averaged 62°. I should have doubted the correctness of the thermometer (as no former experience shows so low a register) had it not been well tested the two preceding winters, when it only fell to 52°; but, independent of the glass, the feelings gave unmistakeable evidence of the extreme keenness of the weather, as for one entire week the temperature never rose above 40°, the wind being about S.S.W., from which quarter during both winters we have invariably felt the greatest cold. I, therefore, imagine

that in the interior the land must be very lofty, as, when the wind veers to the north, which is directly off the Polar Sea, the glass rises, showing the highest temperature when it is easterly. These low temperatures have caused much moisture between decks, and, from not being able to allow a sufficiency of firing to counteract the effect of this damp atmosphere, it has been materially felt by the crew. The sick list at one period consequently increased to nineteen; five being cases of scurvy, and the same of dropsy; but now happily reduced to ten, and the surgeon's report upon the scurvy of the crew to-day, as to their general state and condition, is as favourable as I could under all circumstances have anticipated.

During the last month we have been employed gravelling a distance of 800 yards towards the sea ice, with the hope of its weakening it, in the event of our being able to move when the season for navigation arrives.

On the 3rd told the men off that were to proceed to England next month, *viâ* Mackenzie and Baffin Bay. They appeared extremely well satisfied with the arrangement, as I explained to them my object was to send home all who had suffered the most from the severity of the climate, and to which another year might prove exceedingly trying, as well as to retain the most effective men in the event of being detained another winter.

On the 15th the travellers went upon full allowance of provisions, which, I have little doubt, will, before they are required to start, get them in good condition.

21st.—The weather has been beautiful during the last week; the temperature, which, until the 16th, continued almost daily to fall to -56° , on the 17th rose to -27° , the following day to -14° , and on the 19th to $+3^{\circ}$, which sudden and delightful change, after the excessive cold of the last three months, is most grateful. The invalids are rapidly improving, the majority taking a daily airing of from two to three hours. The temperature at noon to-day, exposed to the sun, rose to $+40^{\circ}$, so that the extreme severity of the winter is over; in fact, to the present time, April 5th, the temperature daily mounts, in the shade, above zero, which, according to past experience, is exceedingly mild, and may be considered indicative of an early break up of the ice. God grant such may be the case.

On the 15th it is my intention to start the parties destined to make their way to England, and from our good sanitary condition I feel but little doubt all will safely arrive. A fatigued party, under the command of Mr. Court, second Master, will accompany Lieutenant Haswell for a few days, while John Calder, captain of the fore-castle, a trustworthy and zealous petty officer, will proceed with Lieutenant Cresswell as far as the Princess Royal Islands, and from the dépôt there return with as many cases of potatoes and as much chocolate as can be brought on the sledge, which extra supply will give an ample allowance of those excellent articles in the event of being detained here during the ensuing winter. To this period we have not lost an

individual of our crew, either by accident or disease; the officers particularly have enjoyed an immunity from sickness which is surprising, with the exception of Mr. Sainsbury, Mate, who, since the winter of 1850, has suffered with a pulmonary complaint that has entirely prevented his participating in the arduous duties of the travelling parties or in the more exciting but not less laborious occupation of hunting over this rugged and severe country; and Mr. Paine, clerk in charge, who had been a great invalid from rheumatism until this last winter, when he has made a most rapid and wonderful recovery, and, at present, is in the enjoyment of more robust health than when he quitted England. I can attribute our excellent salutary state to the causes already alluded to in this narrative, in conjunction with the bountiful supply of game which a merciful Providence has aided us with, and has so materially added to our otherwise scanty ration, as well as the excellence of all species of our provisions, which are certainly of the best description I ever met with, more particularly the superior quality of the lime juice, which, as an antiscorbutic, has proved most inestimable, with the preserved meats supplied by Messrs. Gamble, which, for weight, exemption from bone, and excellence, rank in the very highest scale, and that invaluable vegetable the preserved potato manufactured by Edwards.

Sir, I have nothing more to add to this narrative, except to state that I forwarded a list of game killed, and a monthly abstract of the meteorological journal, which has been registered every alternate hour since leaving England by the respective officers of the watches, and carefully arranged and tabulated by Mr. Court, second Master, which complete tables, I hope, with other interesting observations, to be enabled to carry safely home in the ship.

And, having particularised the officers in the various services they have been employed upon, I cannot conclude without expressing the extreme satisfaction that the crew have given me upon all occasions, when, in the perilous passage of the Polar Sea, activity, energy, and arduous duty was required, as well as during this long period of inactivity, they have been characterised by cheerfulness, propriety, and good conduct, which fully entitle them to the most favourable consideration of their lordships.

ROBERT M'CLURE, Commander.

Bay of Mercy, Baring Island, April 5th, 1853.

Lat. $74^{\circ} 6' 34''$ N., long. $118^{\circ} 15'$ W.

TABLE showing the mean height of Barometer with the Temperature of the Air on board H.M.S. "Investigator" from August, 1850, to March, 1853.

Year and Month.	Barometer.			Temperature of Air.			Mean Force of Wind.
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	
1850.							
August . .	30·060	29·390	29·751	+50	+27	+36·5	3·5
September .	·650	·470	·809	+46	- 1	+20·2	3·6
October . .	·180	·380	·861	+24	-23	+ 0·2	2·0
November .	·270	·160	·739	+ 7	-32	-10·2	3·1
December .	·560	·480	·978	- 4	-40	-23·4	2·5
1851.							
January . .	·570	·400	·885	-15	-51	-32·5	
February .	·630	·030	·958	- 0	-51	-37·7	
March . . .	·720	·338	·946	- 5	-51	-28·8	
April . . .	·610	·410	30·037	+38	-32	- 4·8	3·1
May	·600	·560	·023	+47	- 5	-18·9	2·2
June	·150	·470	29·837	+53	+27	+36·1	3·5
July	·030	·450	·756	+52	+32	+37·5	3·0
August . . .	·400	·300	·865	+52	+21	+37·6	2·8
September .	·270	·450	·876	+43	+ 1	+24·6	3·1
October . . .	·200	·300	·877	+26	-22	+ 3·3	1·9
November .	·750	·630	30·097	+10	-40	-15·2	1·8
December .	·810	·490	·046	+11	-44	-20·0	3·5
1852.							
January . .	·600	·280	29·841	+ 8	-51	-27·3	3·4
February .	31·000	·070	·777	- 1	-47	-25·8	3·1
March . . .	31·000	·410	30·082	+ 5	-62	-28·4	2·0
April	30·430	·520	·164	+31	-38	- 1·4	2·5
May	·250	·600	29·987	+37	-25	+10·2	2·6
June	·100	·430	·758	+51	+11	+31·5	3·1
July	·000	·870	·749	+52	+30	+36·7	2·9
August . . .	·170	·400	·816	+52	+19	+33·2	2·9
September .	·100	·070	·785	+38	- 4	+20·1	3·6
October . . .	·300	·440	·986	+16	-33	- 5·6	2·2
November .	·680	·460	·978	+ 9	-43	-16·5	3·1
December .	·670	28·970	·944	- 4	-48	-26·1	3·7
1853.							
January . .	·120	29·180	·748	-16	-65	-43·87	4·05
February .	·580	·400	30·058	-13	-57	-38·50	2·50
March . . .	·720	·540	·048	+17	-58	-25·4	2·30

Yearly Abstract.

1850.			1852.		
Barometer.			Barometer.		
Maximum	.	30·650	Maximum	.	31·000
Minimum	.	29·160	Minimum	.	28·970
Mean	.	29·828	Mean	.	29·906
Air.			Air.		
Maximum	.	+5	Maximum	.	+52
Minimum	.	-40	Minimum	.	-52
Mean	.	4·66	Mean	.	+0·05
1851.			1853.		
Barometer.			Barometer.		
Maximum	.	30·750	Maximum	.	30·72
Minimum	.	29·030	Minimum	.	23·180
Mean	.	29·934	Mean	.	29·960
Air.			Air.		
Maximum	.	+52·0	Maximum	.	+17
Minimum	.	-51·0	Minimum	.	-65
Mean	.	+1·58	Mean	.	-35·92

ROBERT M'CLURE, Commander.

The foregoing closes the public dispatches of Captain M'Clure. We now add the following private letters, without which the subject would not only be incomplete but we are desirous of preserving the sentiments expressed in them as doing honour to the head and heart of the writer.

The following letter from Commander M'Clure to his sister, Mrs. Thomas E. Wright, of Dublin, has been communicated to a Dublin paper by Dr. Wilde:

H.M.S., *Investigator*, Bay of Mercy,
Polar Sea, April 10, 1853.

Communication by post from this region of the globe is rather unprecedented, but nevertheless I hope it will arrive at its destination, and be the means of allaying for the present any apprehension for our safety. I sent a letter to you, with my dispatches, from Cape Bathurst, by the way of the Mackenzie River, in August, 1850. A skin-clad chief of the tribe fishing at the cape was the emissary, and I hope that he proved faithful to his trust. Since that period I may say we have been the inhabitants of a living tomb, for, with the exception of a few natives we saw for about an hour upon Prince Albert Land, in the summer of 1851, and from whom we obtained some interesting information, not a strange face have we seen. It is unnecessary to enter very largely into our proceedings during this most anxious, difficult, and most dangerous voyage, as most probably my dispatches to the Admiralty will be published, by which you will learn everything, and a most dry production you will find it. I shall therefore briefly mention that we succeeded in the discovery of the long-sought for

North West Passage, which has baffled maritime Europe during the last 400 years, thereby adding another laurel to Old England's name and glory, and a memorable event to our dear little Queen's reign. We have circumnavigated a very large island, its northern extreme being the cliffs of Banks Land, separated from the main land of America, (I think it is, and not an island,) which part I have called Prince Albert Land, as we have connected it with Victoria and Wollaston Land by the Prince of Wales Strait, through which, on the 26th of October, 1850, was the important discovery of the passage established, by the connecting of the waters of this strait with those of Barrow, which was accomplished by a travelling party with a sledge, consisting of six men, an officer, and myself, and bitter cold work it was at that advanced period of the year, particularly as the ice we had to sleep on was not sufficiently snow-covered to keep us dry, which, during the usual time of travelling in these regions in the spring, is always the case, of which we had now ample experience, and it is then warm and comfortable under the tent. Our expedition was short, and that certainly was an advantage, only occupying ten days going over 180 miles of ice. I nearly made a bad termination of the otherwise interesting trip. The last day, I left the sledge for the purpose of getting on board some time previous to the party, that a few comforts might be prepared on their arrival; we had about 15 miles to go. Shortly after quitting them it came on a thick mist, but as long as it continued daylight, and I could see my compass, I got on pretty well; but at five o'clock darkness set in, and I very soon lost my way, got entangled amidst heavy ice, rough and uneven as a stonemason's yard, having much snow, through which I was tumbling and floundering at the risk of breaking my legs, arms, or neck, so of necessity I was obliged to stop, and being much exhausted, having had nothing since a scanty seven o'clock breakfast, I made myself a comfortable snow bed under the lee of a large piece of ice, burying my feet up to the knees to keep my toes from being frostbitten, soon fell into a doze, and about midnight was aroused by a bright meteor flashing across the heavens, so got up and found a fine starlight night with a brilliant aurora, and, starting in the direction of the ship, was in hopes of getting on board. However, having expended all my ammunition, I could not attract the attention of those in the vessel, and so, to make a long story short, I wandered about until daylight, when I had the extreme satisfaction of finding I had passed her about four miles. In proceeding to her I came upon several fresh footsteps of bears, but arrived safe at half-past eight, none the worse, although the thermometer was 15° below zero, having been twenty-five hours without anything to eat. For this and many other mercies which have been signally extended to us all during this most perilous voyage our heartfelt thanksgivings and praises are due to that beneficent Providence, whose protecting finger alone could have directed our path in a sea through whose ice-encumbered surface the power and ingenuity of man could not have advanced the ship one yard. Surely one moment's reflection when contemplating

these mighty works of nature, brings conviction to the mind, that the same arm that sustained the first ark of Gopherwood as it floated over the waters of an engulfed world, has guided this our ark of British oak; and that its inmates will return in safety to enjoy the blessings of their native land, which will be another miracle of Divine mercy. I often say with Menochs' wife, "If God had intended to kill us he would not have shown us so many mercies."

In 1850, not being able to find a harbour, we wintered in the pack, a very dangerous thing, as we found in the *Terror*, but received no damage. In April, 1851, several travelling parties were dispatched in different directions, but no tidings whatever of poor Franklin; and learning upon the return of one which went towards Wollaston Land, that a party of natives had been seen, but from only being able to communicate by signs, no information was obtained, I started with the interpreter, who is a Moravian brother belonging to the Labrador mission, and, being only seventy miles off, we soon found them, and a most intelligent and interesting tribe they were; but they were very much frightened at us. When at some distance they made signs for us not to approach, shouting frequently, "Oh! we are very much afraid." These people never quit this desolate land, and are the farthest north. They mentioned that along the coast there are many Esquimaux, and that those furthest south trade with the people which inhabit a large land opposite, of course the north shore of America. Now, is it not shameful that the Hudson Bay Company know nothing of this people, and that their charter should remain a dead letter, for their title to it mainly rests upon their exertions to civilize the heathen; but it appears very evident that provided they obtain "peltries," little is thought of the rest. Surely such should not be tolerated. Intelligent missionaries from Greenland or Labrador of their own countrymen would very soon bring these kind and simple people—for those upon this land, being uncontaminated by intercourse with civilized man, are in their primitive condition—would soon lead them to embrace the truths of the Gospel, for which they are certainly half prepared. I hope our coming this way may be the means of compelling the Hudson Bay Company to pay some attention to the necessity of Christianizing these simple people.

The ice broke up in July, but finding we could not get into Barrow Strait, from strong N.E. winds setting fresh in upon us, I determined in August to try the passage through the Polar Sea and came into the above Strait to the west of Melville Island, in which transit we had to contend with many dangers; but arrived here safe on the 24th September, by running upon a mud bank during a thick snow storm, where we have since remained—not, however, on top of the bank.

On the west side of this island, about 500 feet above the level of the sea, and a little inland, we discovered a range of hills, composed of trees in all states—from a petrification to a chip that would burn, and a large bivalve, as large as an oyster, but of the description of a cockle, the most perfect fossil. I take this as a further proof, if any

more are required, of the universal deluge; for surely such timber or such shell-fish do not belong to those regions, our largest timber at present being the dwarf willow, whose stem is about the size of a tobacco pipe, upon which the deer feed. These animals are in great abundance, we having killed nearly 120. This providential supply of excellent fresh meat has kept us in perfect health, having also many hares and ptarmigan, with wildfowl, during the summer.

In April, 1852, I went to Melville Island, about 150 miles, in hopes of meeting some ship from Captain Austin's expedition, and was sorely disappointed, as I had calculated upon it, or else on finding stores. The only notice met with was a few lines left upon a large block of sandstone at Winter Harbour by my friend M'Clintock, of 3, Gardiner's Place, Dublin. It is curious that two Irishmen, one coming round the world by the east, and the other by the west, should leave a notice upon the same stone.

The summer of 1852, being only a mollified continuance of winter, the ice has not broken up, so we remain firmly fixed. It is therefore necessary this year to send half the crew home—some by the whalers in Baffin Bay and others by the Mackenzie river, to meet the contingency of another year's residence in this land of desolation, as otherwise our provisions would run out. I hope this measure, which I have adopted solely upon my own responsibility to endeavour saving the ship, as well perhaps as a little pardonable vanity in wishing to bring her as a trophy to England, will be approved of by the Admiralty. If we do not get out this year it will be then our fate to quit her next April, when I shall go direct to Port Leopold, where there are good supplies and a boat capable of carrying us to the whalers or the Danish settlements, should a man-of-war be not sent for us. In the event of the latter, my friend M'Clintock will most probably be selected to command her, by whom you may send out a few lines.

The health of the crew has generally been most excellent, although this has been a trying winter to all, the thermometer falling to 65° below zero, a temperature never before known, and very unlike our two preceding years, when 52° was the lowest. However, we have had only five cases of scurvy of any consequence, and now all are rapidly recovering, so that when the travellers leave I expect to have only one case upon the sick list. Nor have we lost a single man either by disease or accident—a degree of health and exemption from accidents I should say unequalled by any society consisting of the same numbers in any part of the world. Why these blessings should be bestowed upon one so unworthy and so undeserving as the writer of this, often causes much reflection, and I can only feel that "He will have mercy upon whom he will have mercy;" and, moreover, endeavour, feebly indeed, to put in practice the words of the wise king, "Trust in the Lord with all thine heart, and lean not unto thine own understanding. In all thy ways acknowledge him, and He shall direct thy path."

You can observe by the address of this that it was written before I had any idea of receiving any communication from England, or, indeed,

if ever I should revisit my native land. Now a wonderful and overruling Providence has directed a party detached from the ship of our countryman, Captain Kellett, to this Bay (Mercy). The officer, Lieutenant Pim, appeared amongst us as an apparition; having advanced some distance before his sledge, he came close to the ship unnoticed, being taken for one of our own people. When the mistake was discovered I cannot even faintly convey to you the sensation experienced by my crew—from despondency they were at once raised to the very height of exultation and delight. We now, God be praised, consider ourselves saved. The next day, April 7th, I proceeded across the Straits to visit our preserver, and the reception given me, I need not tell your warm heart, has amply compensated for our deprivations and miseries. I still continue on board the *Resolute*, and shall not return for another week to Mercy Bay. * * * *

Your ever affectionate brother.

ROBERT M'CLURE.

The following letter from Commander M'Clure, of H.M.S. *Investigator*, written from Captain Kellett's wintering place at Melville Island, eastward of Winter Harbour, the celebrated place of Parry's first wintering in the Arctic Regions, has been published in a Wexford paper. Commander M'Clure is a Wexford Man, and the letter is addressed to his uncle, the Rev. R. W. Elgee :

H.M.S. *Resolute*, Dealy Island, Barrow Straits,
April, 1853.

My dear Uncle,—Your kind and most unexpected letter reached me through a travelling party dispatched by my excellent friend Captain Kellett at a position on the opposite side of these Straits, where we had been frozen in since 1851. The surprise caused by the appearance of strangers, where none were imagined to be within a couple of thousand miles, was more than I can describe, and what can only faintly be imagined by any who have not been similarly situated, particularly when it was ascertained that two vessels and large supplies were so close at hand. The spirits of my crew seemed to revive, and from despondency to joy was but the work of a moment—the sick forgot their maladies, and, jumping from their hammocks, were carried in the stream of human creatures up the solitary hatchway which the severity of the weather allowed of being kept open, rushed on deck to be assured that the strange apparition was actually living flesh and blood, and not denizens of the nether world—for certainly their faces were black as Erebus, from cooking in their tents. When all was discovered to be real, and not a dream, my poor fellows, equally with myself, could not find words to express our thoughts; the heart was too full—it was a call from the grave. Never, I trust, may the feelings of gratitude to the Almighty Disposer of events which then swelled in my bosom pass away. Many and great have been the mercies we have experienced in our long, tedious, and terrible navigation of that fearful Polar Sea, which has for four hundred years baffled

the navies of maritime Europe, and through which the directing finger alone of Providence has safely guided us. All human agency was powerless, indeed, to advance us one yard in its accomplishment amidst the stupendous barriers of ice which never leave its frozen surface.

You will, I am certain, be very happy to learn that the North West Passage has been discovered by the *Investigator*, which event was decided on the 26th of October, 1850, by a sledge party over the ice, from the position which the ship was frozen in; but as in all probability my dispatch will be published, I do not think it necessary to trouble you with further details: sufficient to say, we have been most highly favoured, both as respects the health of all, having only lost one man, who accidentally poisoned himself about a fortnight since, as well as in being able to extend our search in quest of Sir John Franklin over a very large extent of coast, which was not hitherto known, and found inhabited by a numerous tribe of Esquimaux, who had never ere our arrival seen the face of the white man, and were really the most simple, interesting people I ever met, living entirely by the chase, and having no weapons except those used for that object. The fiercer passions of our nature appeared unknown; they gave me a pleasing idea of man fresh from his Maker's hand, and uncontaminated by intercourse with our boasted civilization. All those who traded with the — Company we found the greatest reprobates.

On the 7th of this month I left the *Investigator*, and arrived on board here on the 19th, and was received by Captain Kellet with such a welcome as none but a generous Irish heart could give; indeed, the kindness we have received from all amply repays the toil, difficulties, dangers, and privations which for three years we have endured. If the country and Admiralty only view our services with but a small portion of the interest which those we have met evince, there will be little left to complain of. * * * *

Every exertion is now being made to follow up the traces of poor Sir J. Franklin, and if nothing is met with by the numerous parties that are now traversing the shores of this inhospitable and inclement country, nought will ever be heard to throw a light upon his mysterious fate, and search will have arrived at its utmost limits. I know nothing of the *Enterprise*, and can only regret her leaving us.

The foregoing letters, which do honour to their author, conclude, for the present, our digressions on the subject of Arctic Proceedings. We say for the present, as it will naturally be resumed in the approaching season, all hopes having now ceased of any further arrival this year from Sir Edward Belcher.

It has been well observed that we have arrived at an epoch in Arctic Discovery, as that of the discovery of the existence of a N.W. passage to the Pacific Ocean most assuredly forms one. But it has not been made without a heavy sacrifice of life, should no further traces be found of Franklin's party. But it is a remarkable feature respecting Franklin's party that not only no other vestiges of

them have been found than those of Beechey Island, but that, also, one single bottle paper only has found its way to us of the numbers which we may have considered him to have thrown overboard. Certainly, the ice would form another impediment to the many others which peril the safety of these brittle messengers. The bottles found in the Sea of Kara, S.E. of Nova Zembla, which have created so much curiosity of late, as possibly having been sent adrift by Franklin, turn out to have no connection with him whatever. They have been recognised by persons competently informed on the subject to be the same as those made at Hammerfest, near the North Cape, and used by Norwegian fishermen for the purpose of floating their nets. This conclusion terminated all speculation as to their origin, and leaves the subject of Franklin's safety as blank as before.

We have also to thank Mr. Barrow for the following account of a letter from an officer of the *Resolute* to his mother.

I hasten to give you the first account of —— letter, which arrived this morning, bearing the last date April 3rd. He was to start next day on an expedition of seventy days, with Lieutenant Mechem, to the west. He writes in the highest spirits, and says it is a "glorious place" and will not believe that Franklin can be dead if he had fallen on a Melville Island, as he considers the miseries are only for those who make them so. He had been out for twenty-five days in the autumn in his sledge, *Perseverance*, with the motto, "Dum spiro spero." He had acted in a play, wearing a low dress, with the thermometer at zero! He says that if any ship remained he would try and do so, as he liked the station so much. Captain Kellett had given him the meteorological journal to keep, which gave him plenty to do, so that he did not find the time long.

With reference to the petrifications on Baring Island, mentioned by Captain McClure in page 656, the following extract from "Wrangell's Siberia," showing that the same was found on the Island of New Siberia by the Russian officers, will, no doubt, interest the geologist.

Of these Hedenstrom observes, in another place, "On the southern coast of New Siberia are found the remarkable Wood Hills. They are thirty fathoms high, and consist of horizontal strata of sandstone, alternating with strata of bituminous beams or trunks of trees. On ascending these hills, fossilised charcoal is everywhere met with, covered apparently with ashes, but on closer examination, this ash is also found to be a petrification, and so hard that it can scarcely be scraped off with a knife. On the summit another curiosity is found, namely, a long row of beams, resembling the former, but fixed perpendicularly in the sandstone. The ends, which project from seven to ten inches, are for the greater part broken. The whole has the appearance of a ruinous dyke." Lieutenant Anjou, who likewise examined these wood hills, says, "They are merely a steep declivity, twenty fathoms high, extending about five wersts along the coast. In this bank, which is exposed to the sea, beams or trunks of trees are found, generally in a horizontal position, but with great irregularity, fifty or more of them together, the largest being about ten inches in diameter. The wood is not very hard, is friable, has a black colour, and a

slight gloss. When laid on the fire, it does not burn with a flame, but glimmers, and emits a resinous odour."

The volcanic appearances on Cape Bathurst were also observed by Sir John Richardson, in 1848.

ARCTIC TRAVELLERS.

		Lat. N.	Long. W.
Franklin, 1st land expedition	1819-21 Fort Enterprise, N. America	64 20	112 0
Parry, Hecla & Griper	1819-20 Winter Harb., Melville Is.	74 45	110 0
Parry, Fury and Hecla	1821-23 { Winter Isle, Lyon Inlet . 66 20		83 20
	{ Ighoolik Is., Melville Pen. 68 30		82 0
Parry, Hecla and Fury	1824-25 Pt. Bowen., Pr. Regent In.	73 20	88 30
Franklin, 2nd land expedition	1825-27 Ft. Franklin, Gt. Bear Lake	65 20	123 10
John Ross, Victory	1829-33 Felix Harb., Gulf of Boothia	70 0	92 45
Back, land expedition	1833-35 Ft. Reliance, Gt. Slave Lake	62 30	109 0
Back, Terror	1836-37 Cape Comfort, Fox Channel	65 15	83 0
Dease & Simpson, boat expedition	1836-38 Ft. Confidence, Gt. Bear L.	67 0	119 0
John Rae, boat expedition	1846-47 Repulse Bay	66 35	86 50
Franklin, Erebus and Terror	1845-46 Beechey Is., Erebus Bay.	74 50	90 50
Jas. Ross, Enterprise & Investigator	1848-49 Leopold Island, Regent Inlet	74 0	90 0
Richardson, boat expedition	1848-49 Fort Confidence.	67 0	119 0
	{ Port Providence, Tchouski		
	{ Noos	64 30	170 7
	{ Chamisso Island		
	{ Port Clarence		
Moore, Plover	1848-52		
Hooper, boat expedition	1849-50 Ft. Franklin, Gt. Bear Lake	65 20	123 10
Pullen, boat expedition	1849-51 Ft. Simpson, M'Kenzie River		
Collinson, Enterprise	1850-51 Hong Kong, China		
Austin, Resolute, Assistance, Intrepid, & Pioneer	1850-51		
John Ross, Felix	1850-51		
Penny, Lady Franklin and Sophia	1850-51		
Haven, Advance and Rescue	1850-51 Drifting in the Pack		
Kennedy, (Bellot,) Pr. Albert	1851-52		
McGuire, Plover	1852-53 Moore Harb., Point Barrow.	71 20	156 0
Saunders, North Star	Wolstenholme Sound	77 40	70 0
Pullen, North Star	1852-53 Beechey Island	74 50	90 50
Belcher, Assistance and Pioneer	1852-53		
Kellett, Resolute and Intrepid	1852-53		
M'Clure, Investigator	1850-53 { Pr. of Wales Str., Banks Is. 73 15		115 0
	{ Mercy Bay, Banks Is. 74 0		118 10

At a public demonstration which has taken place at Lynn to welcome the return of Lieutenant Cresswell, Sir Edward Parry expressed himself thus on the subject of Franklin

In reply to the toast of his health, Sir Edward Parry said—"While we are rejoicing over the return of our friend, and the probable return of all his shipmates, we cannot but turn to that which is not a matter of rejoicing, but rather a matter of sorrow and regret, that there has not been found a single token of our long-lost friends, Sir John Franklin and his companions. Not only has this been the case with the expedition in which our young friend has been engaged, but also with Sir Edward Belcher, who has gone up Wellington Inlet, where I certainly thought traces of him would be found, because at Beechey Island we know he passed the first winter. There we found three graves of his men. That is, up to the present moment, the only token we have received of him. I think it is a most mysterious thing. I have thought about it as much as anybody, and I can form only one idea as to the probable fate of Sir John Franklin. I don't agree with Mr. Cresswell about the probability of both ships having gone down, though nothing has been seen of them. Though it is true that nothing might be seen of the ships, I don't think that the seamen would have all gone. I think that there is that stuff and stamina in 120 Englishmen that, somehow or other, they would have maintained themselves as well as the Esquimaux. They would have found the Esquimaux, and we should have found at least some trace of them. The only thing which I can suggest is this—Wellington Strait was discovered by myself. It is a large opening out of Lancaster Sound. When I was going up westward, from Melville Island, we saw the Strait free from ice, and so I marked it in my charts. It was not my business to go north as long as I could go west, and, therefore, we ran past and did not examine it, but it was always a favourite idea of those who thought a North-West Passage was to be easily made by going north. That, I know, was a favourite idea of Franklin's, and he did intend, if he could not go west, to go up the Wellington Channel. My belief is, that, after he passed the first winter, he did go up that channel, and that having steam-power, which I had not in my time, it is possible he may have gone up in a favourable season. You cannot imagine anything more different than a favourable and unfavourable season, and you cannot imagine the sudden changes that take place in the ice there. I have been for two or three days together beset by ice, and from the mast-head you could not see water enough to float a bottle, and in twenty-four hours there was not a bit of ice to be seen. Nobody could tell why. I cannot tell why. In a favourable season he may have gone up that Inlet, and he might, by steam-power and favourable circumstances, have got so far to the north-west that he could not get back in any ordinary season. And those who knew Franklin know that he would push forward year after year, so long as his provisions lasted; for he was not a man to look back if he believed that

he could accomplish his object. He may have got beyond the reach of our searching parties, for Sir Edward Belcher has not been able to get far up. Gentlemen, while speaking of Sir John Franklin, everybody will feel sorrow for his probable fate. My dear friend Franklin was sixty years old when he left this country, and I shall never forget the zeal, the almost youthful enthusiasm, with which that man entered upon his expedition. Lord Haddington, who was then First Lord of the Admiralty, sent for me, and said, 'I see by the *Navy List* that Franklin is sixty years old—do you think we ought to let him go?' I said, 'He is a fitter man to go than many I know, and if you don't let him go he will die of disappointment.' He did go, and he has been gone for years, and, therefore, I will leave it to yourselves to consider what is the probability of the life of that valuable man. In the whole course of my experience I have never known a man like Franklin. I don't say this of him on the principle *de mortuis nil nisi bonum*, for he really was a man of remarkable capacity, with all the tenderness of heart of a simple child, and the magnanimity of a hero. It is recorded of him that he would not kill a mosquito, but whether or not, that is a true type of the tenderness of that man's heart."

THE LATE LIEUTENANT BELLOT.

The reader will perhaps consider it not out of place to conclude these interesting Arctic dispatches with a notice of the proceedings that have taken place in London to mark the feeling of respect entertained for the memory of M. Bellet, by preserving some substantial indication of that high esteem which he had won, not only from his companions in the arctic ships, but also from all who had known him in this country, and from whom that feeling had become so general. With this object a meeting was held on the 4th of November, at which Sir R. Murchison, the President of the Geographical Society, was Chairman, supported by the First Lord of the Admiralty, Sir James Graham, Sir Edward Parry, and many distinguished persons, by whom the room was crowded. Sir Roderick Murchison opened the proceedings with a sketch of the public life of M. Bellet, taking a general view of the circumstances under which he had joined in the search for Sir John Franklin and his thorough devotion to the cause which he had adopted, and read some gratifying testimonials of the esteem which his noble conduct had gained him from Lord Clarendon, Lord John Russel, and the whole Board of Admiralty, and stating that, notwithstanding several places in France, and particularly Calais, had desired to become the site of the testimonial which our country men proposed to establish, it had been considered by the Committee that the neighbourhood of Greenwich should be the most fitting place, and, accordingly, it would be placed there. Sir James Graham, in moving the first resolution, then said:—

Sir Roderick Murchison, ladies, and gentlemen, I gladly obey the call of the chair, and I rise for the purpose of moving the first resolution. You have heard in touching, though in a foreign, language, the sentiments of the French minister with regard to the distinguished officer to whom we are about to offer a testimonial. I, in our native language of simplicity and purity, shall endeavour to lay before you what are, I am convinced, the sentiments of that gallant profession with which for a short time I am officially connected; and, if I mistake not, the resolution I am about to move, embodies the feelings, not only of this assembly, but also of the nation of which it is so small a portion. It will not be necessary for me, after the interesting and elaborate details which the chairman has presented to the meeting, to go into any long description of the great scientific exploits of the distinguished Bellot. The chairman has told you, and has told you truly, that this is no ordinary occasion. I agree with Lord Ellesmere in the opinion which he has expressed, that our meeting to-day is convened in the spirit of national benevolence and peace, and I have therefore peculiar pleasure in appearing before you. (Cheers.) It was a remarkable circumstance in the life of Lieutenant Bellot that his services in the early part of his career in the navy of his own country were constantly associated with the gallant services of the British navy. (Hear, hear.) You have heard how he conducted himself in Rio de la Plata; you have heard how in that great and noble service, the suppression of the slave trade on the eastern coast of Africa, in the Straits of Madagascar, he greatly distinguished himself. But there was also a period to which my friend in the chair shortly adverted, and which is memorable in the life of Lieutenant Bellot. He served in the Pacific at a moment when a passing cloud of national difference somewhat overhung the relations between England and France, and it is remarkable that at that very moment, when perhaps something of jealousy or angry feeling might have pervaded the sailors of those two great maritime powers, Lieutenant Bellot was distinguished in the British navy, and by the officers with whom he was then associated, by the distinctive appellation of "L'Ami des Anglais." (Cheers.) Now, happily, all such differences are at an end; that cloud has passed away; it is no distinction to a French officer to be called "the friend of the English," for France herself is the friend of England. (Loud cheers.) I may be permitted to tell you that for the last four months, during which, in the interests of peace, and with an earnest desire to preserve the tranquillity of the world, the fleets of France and England have been lying side by side, from the admiral on the deck to the lowest cabin boy below, not one single instance has arisen of any quarrel partaking of a national character. (Cheers.) Friendship and cordiality have marked both services: and I regard this as a happy omen of that peace which we sincerely desire, of that peace which is the perennial source of the prosperity of nations and the great mainspring of the progressive improvement and happiness of mankind. (Cheers.) Now, gentlemen, the next trait in the life of Lieut. Bellot has been alluded to by our chairman, his distinguished and disin-

terested services in aid of the noble efforts of Lady Franklin, made in the earnest hope that by her own personal endeavours, from her own humble means, some trace might, of the existence, the prolonged existence, of her late lamented husband. It was the glory of Lieutenant Bellot to assist Lieutenant Kenedy gratuitously in those services of which his own daring and skill were the mainsprings; and I am well informed that at the close of the expedition, when those with whom he had associated parted from him, among the gallant English sailors—who had served with him—there was a unanimous feeling that if Lieutenant Bellot should be appointed the commander of any such expedition, they would most cheerfully volunteer to serve under him. Now, I have alluded to the transient circumstance of my official position, which makes it, perhaps, not inopportune that I should appear here to-day. But I am about to narrate to you a circumstance which made it peculiarly a duty on my part to come and bear testimony to the meritorious conduct of Lieutenant Bellot. When last year it was determined to send a small expedition under the command of that distinguished officer—no longer Commander, but Captain Inglefield—(cheers)—to the Arctic seas, the steamer selected was not a large one. The volunteers who crowded to serve under Lieutenant Inglefield were numerous—both officers and men, the complement was at once filled up, and there was a difficulty with respect to any spare accommodation. Lieutenant Bellot pressed to be admitted as a volunteer. On that occasion his application was made to me, in the first instance by himself. I resisted it. I was afraid that considering the crowded state of the ship and his rank in the French navy, accommodation such as the Admiralty would wish to afford could not be given, and that inconvenience and discontent would probably be generated in the ship. Lieutenant Bellot pressed his application notwithstanding my refusal in the first instance. He even sought to bring to bear upon me official influence. Others seek favours in the shape of official appointments, but the favour that he sought was only that he might be allowed again to enter a British ship, and join his British comrades in encountering dangers. With no reward in view, nothing but honest fame being his object, he actually persuaded the French ambassador to request, almost as a national favour that he might be permitted to go. (Cheers.) I could not resist such an application. (Cheers.) I laid the case before Captain Inglefield; and that officer said, “By all means let him come as a comrade; we shall rejoice in his society.” Lieutenant Bellot said, “Give me but a plank to lie upon, a corner wherein to put my clothes; I ask no more.” The Officers said, “Let us have him as an associate.” And I believe I may say that Captain Inglefield abridged somewhat his accommodation, and that the other Officers all abridged theirs, and that, except Captain Inglefield himself, Lieut. Bellot had the best accommodation in the ship. (Cheers.) Well, now, what was his conduct under such circumstances? What are the real characteristics of a distinguished naval officer? I should sum them up in assiduity in the discharge of his duties, gallantry in the hour of danger, and obedience to command. Now, what does

Captain Inglefield report under each of these heads? With respect to assiduity, Lieutenant Bellot was an example to all on board the *Phœnix*. Late and early he was employed in scientific pursuits. The dip of the needle occupied his attention by day, and in that almost rayless region, where what is night with us would almost be accounted day, solar observations were pursued by him unremittingly. With respect to gallantry, there never was an occasion on which danger was to be braved or difficulty to be confronted when he was not a volunteer—(hear, hear)—and before I sit down I shall have strictly to narrate to you the circumstances which closed his honourable career. Well, now, I will give you a specimen of his obedience to command. He was under no direct control, because he was a volunteer and a visitor, but such was the nicety of his feelings that Captain Inglefield assures me there was no officer more ready to anticipate his wishes than Lieutenant Bellot. (Hear, hear.) Perhaps what I am about to mention may appear a trifling circumstance, but trifles illustrate character. (Hear, hear.) You are aware that in that northern region the dog of the Esquimaux is the companion of the native in his danger. It is an animal of peculiar sagacity, and remarkable for the assistance it affords in those dangerous parts. Naturally those on board with their eyes frequently turned towards home, wish to bring back some living trophy of these regions, and there is generally a great desire felt to bring home animals of this description. Different officers had obtained dogs, I believe to the number of eight, for that purpose, and Captain Inglefield was forced to prohibit any more being brought on board. It transpired that Lieutenant Bellot, recollecting also his native land, and wishing to take home some little trophy of his services, was desirous of having a dog of this description. When Capt. Inglefield heard that such was his desire, he called Lieutenant Bellot into his cabin and told him that any prohibition with respect to the increase of the number would not apply to him, and begged him to consider himself exempt from its operation. Such, however, was Lieutenant Bellot's nicety of feeling that, though his wish had been strong in the matter, he obeyed the order to the letter, and no animal was brought on board by that officer. (Cheers.) Well, now, it is my duty, I think, shortly to describe to you the concluding scene of his life. Captain Inglefield had left the ship himself determined to brave the greatest danger, endeavouring to open a communication with Sir E. Belcher by a journey over the ice in fact. He had left the ship to Captain Pullen. Captain Pullen, in his absence, was anxious to make a communication to Captain Inglefield. It was a dangerous expedition; Captain Inglefield's bright example was not easy to follow in that trackless region. Lieutenant Bellot volunteered for that service. His offer was accepted; and he left the ship with four British sailors, a sledge, and a slight India-rubber canoe. Very shortly after his leaving the ship arose that fearful storm of the 18th of August, which destroyed the *Breadalbane*, which was in company with the *Phœnix*. The ice closing in upon her in a gale of wind, such as had hardly ever been

known in those arctic regions, the *Breadalbane* was crushed in a moment. The *Phoenix* was in the greatest danger. The strong deck of that ship bulged under; her main timbers were strained to an extent which endangered her very existence. In that fatal storm in which one ship was lost and another all but lost, Lieutenant Bellot and his four followers had to encounter the frightful gale. The first effects of that gale was to sever the ice from the beach. Lieutenant Bellot immediately when he saw that the floe on which he then was, was drifting from the shore, hastened to send two of the four men who were with him in the small canoe to the main land. They succeeded in effecting a landing; but to return became impossible. The floe drifted rapidly away, and the danger of these two men and of the gallant French officer became imminent and apparent. Observe, he was not the first himself to go in the canoe to dry land. (Hear, hear.) He saw the full extent of the danger. When the storm which was raging had almost destroyed himself with the two remaining Englishmen, he expressed the joy which he felt that the two other men were saved, and that he was with the two sailors who were still exposed to danger. Snow was descending in large quantities. He taught them how to shelter themselves on the floe, by accumulating the snow into something in the shape of a hut. They remained huddled. He twice went forth to see in which direction the floe was being drifted. A third time he went forth, and he returned no more. I should tell you, ladies and gentlemen, that his exhortations to these two men have been narrated to British officers and British seamen. He reminded them of their duty, that duty common to Frenchmen and Englishmen, in the extremity of distress, not to be disheartened; and, above all, he exhorted them to look to that quarter from which alone in the last extremity assistance can be expected. (Hear, hear.) He begged them to remember that overruling Providence which had saved them in the midst of so many and such great dangers. It was the will of that Providence that he should not survive; it was the mercy of that Providence that the two men who were his companions should, in the course of eight and forty hours, be drifted back almost to the very place where they had left their companions, and they have survived to tell the story. Now, ladies and gentlemen, an appeal indeed has been made to your generosity on this occasion. But it is not the first appeal. Captain Inglefield, when he paid off the *Phoenix* the other day, mentioned to his gallant companions that some such opportunity as this would be given, and said he thought something was due from the companions of Lieutenant Bellot. What was the conduct of these men—who, after a voyage of six months, had some trifling balance due to them after remittances to their wives and children, and when it had been doubtful whether they would live to come home again? Why, they rushed forward, and it became the duty of Captain Inglefield to restrain their eagerness to contribute out of their humble earnings more than he thought proper. (Cheers.) Silver—gold—was tendered. He said, “No, it is but a small tribute of respect that I ask of you. I will not take much.” It is out of your abundance, ladies and gen-

tllemen, that I ask you to contribute. (Cheers.) Well, I said that I would not long detain you; but will you permit me to express to you one feeling more? I am addressing a Christian assembly; and I have told you what was Lieutenant Bellot's feeling, what his exhortation, at the moment of extreme danger. His noble spirit in its aspirations lifted him up at once from earth to heaven. It is a question now whether we should erect some frail memorial to his memory. You may write it in marble, you may inscribe it in brass, but it will pass away. But there is that which survives monuments—honourable fame, duty faithfully performed, the glorious remembrance of gallant deeds. (Cheers.) It is a saying of antiquity, and has been truly said, that the whole earth is the tomb of illustrious men. It matters not whether their bones whiten the shores of the Equator, or whether they are entombed under the eternal ice of the Arctic regions. But I would say to this Christian audience, let us also, while there is time, follow the advice of Lieutenant Bellot. (Hear, hear.) Let us elevate our hearts, let us raise our thoughts above this grovelling sphere of sorrow and disappointment; let us look to those regions where we hope Lieutenant Bellot is now at rest, and where, as one of our old divines has said, with impressive truth, "Eternity is the measure, felicity is the state, angels are the company, and God the portion of the blest." The resolution which I have to move is as follows: "That this meeting, composed of various classes of Englishmen, being anxious to mark their deep sense of the noble conduct of Lieutenant Bellot, of the French Imperial Navy, who was, unhappily, lost in the last Arctic expedition in search of Sir John Franklin, resolve, that their countrymen be invited to unite with them in promoting a general subscription for the purpose of erecting a monument to the memory of that gallant officer, to be placed at an appropriate spot at or near the Royal Hospital at Greenwich." In moving this resolution I beg leave to state that I entirely approve of the general terms in which it is left to the discretion of the committee to decide upon the precise locality in which this monument shall be placed; but I think at or near to Greenwich would be the fittest place, because it was there that when Lieutenant Bellot embarked on board the *Phœnix*, his friends, both French and English, bade him their last adieu.

The Right Honourable Baronet resumed his seat amid loud cheers.

Admiral Sir E. Parry seconded the resolution. He said, if the resolution required any argument to recommend it to a meeting assembled for such a purpose, it had been amply furnished by the eloquent and feeling address to which it had just been their privilege to listen—(cheers)—and he felt confident that that address, coming, as it evidently did, warm from the Right Hon. Baronet's heart—(hear, hear, and cheers,)—had already met with a cordial response from every British heart in that room, and would meet with a corresponding response throughout the length and breadth of the land. (Cheers.) Such sentiments, proceeding from the First Lord of the Admiralty, had already gone far to accomplish the object for which they were assembled. (Hear, hear.) He (Sir E. Parry) must express his thanks

to the Committee for suggesting the propriety of his taking part in the proceedings of that day. There were circumstances in his past life which gave a peculiar interest to the occasion. It was now thirty-four years since he was permitted, in the providence of God, to penetrate through the ice from Lancaster Sound to about 114° of west longitude, near to what was considered the western extremity of Melville Island, Cape Dundas; and although it was not strictly relevant to the matter before them, yet he must be permitted to say, that as one of the oldest of the navigators in that portion of the Polar Seas, it was with intense interest that he lately received intelligence that the last link in the chain of enterprise to which many of the best years of his life were devoted, had at length been completed by the boldness, the skill, and the energy of his countrymen. (Cheers.) It was a very remarkable and interesting circumstance that two ships, the *Hecla*, under his command, and the *Investigator*, under the command of that gallant officer Captain M'Clure, should have reached two points where, had the periods been the same, they would have been in sight of each other, having come from opposite directions within sixty miles of each other. (Hear, hear.) It was also a very interesting fact that the description which Captain M'Clure gave of the ice by which he was arrested in Mercy Bay, corresponded precisely with his (Sir E. Parry's) description of the ice by which he was arrested off Cape Providence thirty years before. (Hear, hear.) The names "Mercy" and "Providence" might, he thought, be regarded as a record and acknowledgement that under such circumstances British seamen should look upwards for that help in which alone they could put their trust. (Cheers.) He did not despair of the *Investigator* being released. All that was required for her escape was a narrow lane of water, and it should be recollected that the ice often broke up very suddenly. The death of Lieutenant Bellot was a loss not only to France, not only to the French Navy, of which he was a true ornament, not only to his family and friends; it was a loss to England, which owed him a deep debt of gratitude, a loss to the world, whose citizen in the highest and best sense of the word he assuredly was. (Cheers.) As an illustration of the kindness of Lieutenant Bellot's disposition, his delicacy of feeling, he would just mention that he held in his hand a turn-screw made out of one of the boats of the *Fury*, which he had the misfortune to lose in the Arctic regions; this instrument having been brought home for him by the deceased. (Hear, hear.) In conclusion, he begged to say that he heartily concurred in the sentiments expressed in the resolution.

In such sentiments as the foregoing and so well expressed every one must concur;—but one more word on the Arctic voyages.—

The time is now gone by when we might expect more accounts from Sir Edward Belcher this year, and we must patiently await the approaching summer for his further discoveries. Those, with Captain Kellett's, to the north of Melville Island, may be considered conclusive as far as any vestiges of Franklin are concerned. If none are

discovered there, what probability is there of their being found elsewhere; We hear of an expedition being proposed (nay, even announced as decided, a circumstance which we cannot but doubt,) to proceed to the Pole from Spitsbergen! We should have thought that the experience of Parry in 1827 would have been a sufficient warning against such a project. To make an attempt in direct opposition to a failure from physical causes always in operation, in fact, a current from the Polar Sea through the principal channel to the south, if not the only one, excepting that out of Baffin Bay (for what outlet have the waters of the Polar Sea except into the Atlantic?), to attempt to stem this current, and the ice that it brings, in spite of a former failure (and for what?) would, indeed, betray a hardihood beyond belief. But to reach the Pole perhaps is the object, for it could not be to seek for Franklin! If this is ever to be done, Spitsbergen should not be the starting post. Behring Strait might be or any point in its neighbourhood of Arctic America or Asia, for the current then might be made favourable. We have heard nothing of Collinson since he passed Behring Strait in 1851. He, indeed, if not on the shore of Arctic America might be so far to the northward as to profit by the easterly set of the waters of the Polar Sea and to be far more likely to reach the Pole, if he desired it, than any ship from the Atlantic. But we have no such anticipations as these, either concerning Collinson or another expedition from this country beyond one to communicate with Sir Edward Belcher next summer. With respect to reaching the Pole, perhaps DeHaven, who, we believe is gone up Smith Sound, will tell us more on this subject when we next hear of him.

Captain McClure expresses his regret in one of his letters (page 675) at the *Enterprise* (Collinson) having left him. It is indeed to be regretted that the very object of two ships to keep company and assist each other in the ice has been defeated. But it is no less a source of regret that the *Investigator* did not wait for the *Enterprise* from the Sandwich Islands before passing through Behring Strait!

Rewards offered in the "London Gazette" relating to the Discovery of Sir John Franklin.

Admiralty, March 7th.

Twenty Thousand Pounds Reward will be given by her Majesty's Government to any party or parties, of any country, who shall render efficient assistance to the crews of the discovery ships under the command of Sir John Franklin:—

1. To any party or parties who, in the judgment of the Board of Admiralty, shall discover and effectually relieve the crews of her Majesty's ships *Erebus* and *Terror*, the sum of £20,000; or,
2. To any party or parties who, in the judgment of the Board of Admiralty, shall discover and effectually relieve any of the crews of

her Majesty's ships *Erebus* and *Terror*, or shall convey such intelligence as shall lead to the relief of such crews, or any of them, the sum of £10,000; or,

3. To any party or parties who, in the judgment of the Board of Admiralty, shall, by virtue of his or their efforts, first succeed in ascertaining their fate, £10,000.

W. A. B. HAMILTON, Secretary of the Admiralty.

ARCTIC REGIONS.—With reference to the provisions supplied for the several expeditions, we are glad to find Edwards' patent preserved potato maintains its high reputation as an important vegetable diet for Arctic as well as other services. Captain McClure of H.M.S. *Investigator*, in his dispatches from the Arctic regions, testifies as to "the excellence of that invaluable vegetable the preserved potato manufactured by Edwards," which is further confirmed by the following letters from Captain Inglefield and Dr. Charlton, H.M.S. *Phoenix*, to Messrs. Edwards and Co., patentees of the preserved potato.

H.M.S. *Phoenix*, Nov. 1853.

"I have much pleasure in bearing my testimony to the excellent flavour and quality of the preserved potatoes you supplied me for my last Arctic expedition. The facility with which these potatoes are cooked and their convenient substance, are points of great benefit as regard utility in Arctic travelling, and I can strongly recommend them."

E. A. INGLEFIELD, Captain, R.N., F.R.S.

"It affords me much pleasure in being able to bear testimony to the excellent quality of your preserved potato as supplied to the gun-room of H.M.S. *Phoenix*, and which gave the most complete satisfaction to all concerned on board that ship in the Arctic regions.

JNO. F. CHARLTON, M.D, Surgeon, R.N."

NOTES ON A VOYAGE TO CHINA IN HER MAJESTY'S LATE SCREW STEAMER REYNARD.—*P. Cracroft, Commander.*

(Continued from page 546.)

We had a pleasant passage across to the Chusan Group, royals and top-gallant studding sails set. On the morning of Sunday the 13th of October, we sighted Luconna Island, and the wind failed us; got the steam up, and before dark anchored in the south channel of the Yang-tze-kiang, about fifteen miles below Woosung. The next morning weighed, and moored off the British settlement at Shanghae before 2h. p.m. Found *Pilot* here; and, as the Bishop proposed remaining full three weeks, I took advantage of the opportunity to do a little to the rigging, which it wanted, and also to see something of the interior, which is well worth seeing.

Accordingly, having made all the necessary arrangements, I started for the "Hills," as they are called, accompanied by Mr. Columb (Mid.) and a large party of the officers of the *Pilot*, including Captain Ince. Each person had a boat to himself, which he fitted accord-

ing to his taste; while my steward brought up the rear of the flotilla with a larger boat containing the "batterie de cuisine" and provender, wherein, also, we were to take our meals. We got away about 1h. p.m. and never stopped until about 3h. a.m. the following morning; when our boatmen made fast to the bank. The route lay up the river for about six miles, then, turning off about a mile below a remarkable and very handsome pagoda on the right hand (looking up), we entered a canal and proceeded along at the rate of four or five miles an hour to our destination. Of course there was little country to be seen, the view being bounded on either hand by the banks of the canal. By climbing upon the roof of the boat, the dimensions of the nearest field could be descried, but the country for many many miles is a dead flat, and, although in the highest state of cultivation, is very monotonous. From this vast alluvial plain, the "Hills," thirteen in number, rise like islands out of the sea; they may be likened to so many huge granite boulders, are very picturesque, covered with temples and tombs, well wooded, also, in some parts, and abounding in game. The view from them is magnificent; the apparently boundless plain extends in every direction, and from the summit of the highest, the eye must command a circumference of horizon the radius of which is fifty or sixty miles.

It was the rice harvest and the plain shone like molten gold, the canals, which intersect it in every direction, thrown over like a network of silver, villages, pagodas, and clumps of trees dotting the landscape, filled up as rich a scene as it is possible to conceive. In very wet seasons this picture of luxuriance is changed to one of desolation. Then it is an unbroken sheet of water, and the poor villagers, driven from their homesteads, take refuge, with all their valuables, on the Hills. Here, also, they deposit their dead, and coffins are strewed about "as thick as leaves in Vallambrosa."

Our party succeeded in making up a very good bag of game; pheasants, hares, woodcocks, and a small blue rock pigeon composed its contents; and we returned on the fourth day to Shanghai, well satisfied with our excursion, although the heavy rain which fell on the last day prevented as much being done as we intended.

I may here remark upon the civility of the country people in this part of China. Their conduct towards us offers a striking contrast to the behaviour of those in the south. There is no necessity for carrying pistols here; whereas in the neighbourhood of Canton and Whampoa, and even in our dominions at Hong Kong itself, to venture about alone unarmed would be perfect madness. Altogether, my recollections of this trip of forty miles into the interior of this great Empire are most pleasing.

Shanghai seems steadily progressing. It will be a wonderful place some day; several houses have been built and occupied since our departure last July. A new carriage drive, upwards of two miles in length, is projected, the old one being found far too small for the wants of this increasing community. On my return from the Hills, I took up my quarters at the hospitable mansion of Mr. Beale, the prince of

China merchants; and, indeed, his house was the head quarters of all the officers of the ship, for scarcely a day passed that some of them did not dine there.

On the 6th of November I had intended going up the river as far as the tide would permit; but a run of ill luck, which terminated in breaking the remaining metal blade of our propeller, put a stop to the expedition. Moored again, and shifted the screw; and two of the stays of the starboard boiler having been found defective (the nuts which ought to have secured them appear to have been forgotten), repaired the defect, and at daylight on Saturday the 9th of November, re-embarked the Bishop and his suite, and, with Dr. Bowring in addition as passenger, bade adieu to Shanghai once more.

Started at 6h. 30m. At eight o'clock, anchored below the receiving ships at Woosung to land my old shipmate Medhurst and a small party who had accompanied us thus far. Weighed again and stood out of the river. Found the ebb running a perfect sluice over the bar, and the ship being very light answered her helm so badly that before she could be turned in the fair way at the narrow entrance, she grounded on the mud flat that extends for half a mile outside the marks. Laid out the stream and kedje, and, as it was nearly low water at the time of the mishap, in two hours she was afloat again. It cost us the tide, however, and, as the wind was scant, we made but slow progress down the river. Passed the *Pilot*, at anchor, about five miles below Woosung, off Bush Island. At 6h. p.m. came to for the night, in 4½ fathoms (low water).

The next morning at five o'clock weighed again. At ten passed Gutzlaff, and at noon the outer rugged Island bore N.W., 1½ miles distant. It was a beautiful day, and the Bishop performed divine service on the quarter-deck. His lordship's sermon, which was extempore, from 1 Timothy, iv, ver. 8, "But godliness is profitable unto all things, having promise of the life that now is and of that which is to come," was an admirable discourse, full of good advice, and evidently took with his congregation, it was listened to so attentively. A breeze springing up in the afternoon from the N.W., carried us rapidly past Lukong, where the depôts of opium are established for the supply of Ningpo. At sunset we were not far from the entrance of the river; but, as it was too late to attempt the bar, came to for the night off Square Island, intending to start the first thing in the morning. Before daylight, however, the breeze had freshened so much and such a heavy sea had set down upon us, that it would have been imprudent to have attempted the bar without a pilot. Weighed, and stood over to Lukong for one; the tide (ebb) was, however, running so strong that we could do nothing against it, even with the steam, and I had to anchor for a couple of hours. On arriving off the entrance of the little harbour, the Captains of the two receiving ships came on board, and one, Mr. Hall of the *Ternate*, volunteered his services to take us up to Ningpo.

The river Yung Kiang, one of the great drains of this country, flows into the sea near the westernmost of the Islands which form the

group of the Chusan Archipelago. The formation of the land at its entrance is very remarkable and cannot be mistaken. On the right hand, going in, stands the city of Chinhai, its citadel crowning a lofty hill; a position that, in the hands of modern engineers might be considered impregnable. It was easily captured, however, by our troops, and was garrisoned by us during the war with this country. After clearing the bar, we found the navigation of the river past Chinhae much impeded by the junks, which, as usual, anchor without any regard to order and to keep a passage clear for vessels. We threaded our way, however, without any mishap, and proceeded rapidly up, the tide being in our favour. The scenery on both sides is magnificent, the view being bounded on either hand by a range of lofty hills, villages and joss-houses, and queer shaped thatched ice-houses, filling up the foreground of the picture; to which the groups of fishermen and others (amphibixæ), following their avocations, gave increasing life and animation.

I had sent notice to the Taoutae, through our Consul at Shanghai, of my approaching arrival, and hoped to have found the river where it branches off in the middle of the city of Ningpo clear of junks; but a confounded little schooner, under Portuguese colours, had got right in the way, and, in avoiding her, the tide swept the ship down upon the point at the junction, and, although both anchors were let go instantly, it was impossible to prevent her stem from almost touching the houses; for here the bank of the river is steep to like a wall. Laid the kedge and stream anchors out and hawsers to the Portuguese schooner which was the unlucky cause of this mishap, but could not succeed in extricating the ship from her unpleasant position till slack water, then hauled off and anchored for the night. The *Reynard* is not the first vessel that has got into grief here: the *Medea*, with H.M. Plenipotentiary on board, and *Driver*, with Sir Thomas Cochrane, both got into a mess. The former on two different occasions, and one of these lay for forty-eight hours hard and fast before she got off. It is needless for me to add, therefore, that in a long vessel like a steamer great caution must be used in navigating the river at the point; the angle to be turned is more than eight points!

The next morning at high water slack, weighed and proceeded up the Consulate Creek and moored off the residence of H.M. representative, in three fathoms.

The city of Ningpo, which I have at length visited, is situated in an immense plain, intersected in all directions by numerous canals; its water communications are, therefore, very great. It is surrounded by a wall, in most excellent repair, which affords an excellent walk of some six miles. There are four gates, besides two water gates for the admission of the canals; these circulate through the city, as at Wau-chou-foo, and during the floods, which prevail here too frequently, enable the communication between much of the space contained within the walls to be kept up which, otherwise, would be cut off, so much is under water; even at this dry season I observed large open spaces flooded. The city, proper, does not near occupy the whole of the

ground, intramuros; a full third, I should estimate, is garden ground or waste, being attached to the temples, for which Ningpo is famous. Connected with one which contains some monstrous idols, is an eleven storied pagoda, having 250 steps to its summit. Although in a ruinous state, apparently the effects of fire, the staircase is in good repair, and the trouble of ascending is amply repaid by the view from the top. I went up twice during our stay.

Ningo is renowned for the skill of its artisans in cabinet making, upholstery work, and inlaying in all its branches; they are unrivalled in the empire and the specimens to be seen in the numerous warehouses are worth inspection. The silks produced here are also famous, and the art of embroidery is carried to great perfection (it was impossible to resist making an investment); but the trade for which this city seems to be more celebrated than any other is the fur trade; hither, from the remotest confines of Tartary, come the skin merchants, and at this season the street devoted to the sale of this most necessary article of dress to a Chinaman in winter, offers a magnificent display. I had often heard of this street, and, indeed, those of Ningpo generally, spoken of as being superior to those of any of the other places we are permitted to traffic at; but, although a portion of this "fur street" (perhaps a quarter of a mile) may vie with any other I have yet seen, on the whole, the streets of the city cannot for a moment be compared with those of Foo-chow-foo, or even of Canton.

The Missionaries muster strong here. They reside principally in the Consular Creek, outside the walls. The three sent by our Church Missionary Society, Messrs. Cobbold, Russell, and Gough, are, however, located in the city and the good they are doing is not to be told. The Bishop took up his quarters at their house.

The *Pilot* arrived on the evening of the 12th, and a trip was very soon arranged to proceed on a visit to the Monastery of Teentung and the lakes in the vicinity. The distance to Teentung is about fourteen miles by canal; and, from its terminus, a walk of seven miles through a glorious country, well wooded and richly diversified by hill and dale, mountain and valley, brooks and running streams, conducts to the abode of this nest of vermin. But that the place is a little dirtier and the idols more grim, the appearance of the devotees and their ridiculous ceremonies would induce a stranger to believe himself in one of those sinks of iniquity that need not be mentioned. The number of Buddhist Priests supported in idleness by this establishment is enormous. I was much amused with some of the inscriptions: one, over a laughing figure seated facing the principal entrance, informed us that "He bestows on the world one smile," another was not so comical, as, "The present is but a moment." The great bell of the Monastery is a curiosity, scrawled all over with English names,—to which I added mine as a matter of course.

The weather, unfortunately, turned out very wet, but I managed, under my umbrella, which "Tomjau" held over me, to get a sketch of a group of magnificent *Cryptomeria Japonica*. The open court in

front of the Monastery, if kept in decent repair, would certainly be very beautiful.

On our return to the boat on the canal, I got a sketch of a field or road-side altar, a picturesque object, the three lanterns in front being suspended from the boughs of a fine sycamore tree. An inscription informed us that this was "the tablet of the honoured gods of the soil." Hard by, about half way up a steep hill, were some covered seats, to afford shelter for the travellers who stopped to rest there; these seats, an inscription informed us, were the resting places of "extensive virtue," and were protected by the "sun and moon!" A ruined pagoda crowns the top of this hill; it is only a few yards off the road and should be visited.

From hence we proceeded, by canal, to the lakes, a distance of seven or eight miles, I was told, but we did it at night, and at daylight we found our fleet (there were fourteen boats in all) at the foot of a barrier, called a "pah," constructed to dam the waters of the lake or lakes up and preserve a uniform level in them throughout the year. This dam sloped on both sides to an angle of 45° , and, by means of capstans, the boats were drawn up, the rope (a bamboo one, of course,) being passed round the stern, and were shot into the water on the other side with considerable velocity. The inclined plane was kept well greased with the mud of the canal, and this primitive method of passing from one level to another is the only one, I believe, practised in China, locks being unknown.

These lakes are the resort of vast numbers of wild ducks, &c., in the winter, and a few were obtained, but the weather is scarcely cold enough yet. From a large granite quarry at the further end of the largest lake there is a splendid view; Ningpo pagoda and the citadel at Chinhæ being conspicuous objects. We found the inhabitants of the borders of the lake very civil, though their curiosity was rather troublesome. The villages have all breakwaters of mud thrown up in front of them, on which mangroves were growing, a proof that the storms on the lake are somewhat severe. The fishing season appeared to be over, as nearly all the boats were hauled up. As usual, the sides of the hills are studded with graves. I observed a child's body wrapped up in a mat suspended from the bough of a tree which overhung the water of the lake; whenever the frail cord that suspended it gives way the remains will float as an offering or "joss pigeon" (Canton dialect) to the spirits of the lake.

Among other trees growing in this neighbourhood, I observed the tallow tree (*Stillingia Sebifera*), which appears to be much cultivated in this part of China, its leaves resemble the aspen in shape and colour and the white tallow that surrounds the seeds is a great article of trade. It possesses most of the properties of animal tallow; for domestic purposes, mixed with wax, good candles (Anglicè bob-chops) are made from it, but it is not much used for cooking, the Chinese having other vegetable oils for this purpose.

Here I also noticed a beautiful palm (*Camarops*) and made a

sketch of it. Several young specimens of this tree have been sent by our countryman, Mr. Fortune, to the palm-house at Kew and to H.R.H. Prince Albert at Osborne House, where I understand they are flourishing in the open air. Should the attempt to naturalize this magnificent tree in our climate prove successful, and I see no reason why it should not, as the winters in this part of China are quite as severe as in the neighbourhood of Edinburgh, another ornament will have been added to the varied foliage of our beautiful parks and grounds in England.

The scene on our arrival at night, rather late, at the barrier or pah, where the canal communicates with the Ningpo river, was amusing and an illustration of the fear, if not veneration, in which an Englishman is held in this part of China, inspired, probably, by the wholesome lesson taught the natives during our occupation of this city and the neighbouring country. I was with J. A. T. Meadows, the Consulate Interpreter, and when we got to the pah the canal was crowded with boats, each eager to be the next to be hove over, and there seemed every prospect of a couple of hours' detention, when out jumped M's comprador, called to the Chinese, "You rascals, get out of the way and let my Lords, the great (ta) Englishmen, pass," striking the boats and rattling a long bamboo he carried. Instantly the place was cleared and our boats were launched immediately into the river, to the disgust, doubtless, of many of the "detenus." The bridge under which we passed to get back to the ship is like all others I have seen in China, (excepting on some of the canals,) piers connected by slabs of granite. The traffic on it is enormous, but the eye still misses accustomed objects, "carriages et hoc," in watching the stream that is setting continually across. Here pedestrians only are to be seen, and as, at night, each carries a lantern, the effect is singular and striking.

Our engineers have been busy, ever since the accident befel the screw at Shanghai, in repairing the blade, with the assistance of the *Pilot's* blacksmith and his forge. At midnight on Tuesday the 26th, the last rivet was fixed. At daylight the next morning, thermometer 28°, we weighed, and stood down the creek; rounded the point at the junction in beautiful style; hoisted the boats up, and were at Chinhae by eight o'clock. Messrs. Cobbold and Russell, and Dr. M'Gowan went down the river with us, and I landed them under the citadel. Here Dr. Bowring and Mr. Dallas were to have joined us; but there were no signs of Mr. Dallas's boat, and instead, a note from Dr. Bowring, begging me "not to go and look for them, but that they would put themselves in my way." Accordingly, after firing a gun to call attention, in case of their being within hearing, I shaped my course through the Chusan Group, and, with a strong ebb tide, soon lost sight of Lukong, never in all probability to be revisited. A good look out was kept for our two friends, but no signs of their boat; and after passing Kitto Point I gave them up.

We had some difficulty in threading our way through the fishing stakes; but by 5 p.m., we were clear of the Chusan Group. All sail was made to a light air from the northward; this drew round

gradually, but the Monsoon was very light until Saturday morning, when it freshened to a strong breeze very rapidly, and I was not sorry to take shelter under the breakwater at the White Dogs from what threatened to become a gale before dark. In fact, before sunset, both anchors were down, and top gallant mast on deck. On Tuesday it had moderated sufficiently to enable an attempt to enter the Min to be made; but the wind was too scant to allow of any sail being set, and we were more than four hours getting into the Woga Creek.

The Bishop went up to Foo-chow-foo the next morning in our pin-nace, well armed. She left the ship at 7, and would have been back by 9 p.m. had she not grounded on Pagoda Island: as it was she got back at 10.30. On Sunday afternoon Dr. Bowring arrived in a Ning-po junk; and on Monday I went up to the city with him and Mr. Dallas and Hickley, returning on Wednesday night in Captain Heley's boat.

On Thursday the Bishop came down, and we got away in the afternoon for Amoy. Our bad luck in winds still pursuing us, I had to take shelter in Lee-loo Bay the next evening, not feeling disposed to risk entering the harbour of Amoy in a dark night, and nearly a gale of wind blowing.

On the 14th, Saturday, anchored off the Cornwallis Rock. Mr. Sullivan, who was so long at Ningpo, is our Consul here now, in poor old Leyton's place, and the British Consulate is, in consequence, a very different place; an amiable handsome wife, and very pretty, highly talented daughter, have materially increased the agreements of this port of trade. I met at dinner at the Consulate an old Mandarin, a full Colonel, who was so charmed with Rosina Sullivan's manners, that he insisted on the whole party there present coming to dine with him on the following day. Accordingly we all went, and as this was my first regular dinner with a Mandarin, I subjoin the bill of fare. It consisted of "huit potages:"—1, à la sea slug trepang—2, voloille—3, tree fungus—4, shark fin—5, fishes melt—6, au saucisson—7, fish brains and viscera—8, ckesnut. Rotis: two dishes of roast mutton, with three fowls, three ducks, and two sucking pigs. The latter being the best dish of the whole lot; I think the poor little wretches must have been bamboozed to death before being roasted. Oranges and dried fruits followed. The dinner was a very slow affair, owing to Mr. Sullivan having insisted upon the same respect being paid to him, Dr. Bowring, and the Bishop, as the Mandarins exact from each other; nor would he get out of his chair until three guns had been fired in honour of each of the three above-named individuals. Such tomfoolery nearly disgusted me, and I was very nearly leaving the party to their own dignity, and returning on board.

At noon on the 18th we cleared Taetan, and having a rattling breeze, were abreast of Pedro Branca by 11 a.m. Here the wind fell light, so the steam was got up, and at 6 p.m. we were once more safe at anchor in Victoria Harbour, Hong Kong. Thank God for all things.

The following is a tabular statement of the work the ship has done during the last twelve months, from 11th of December, 1849 to 19th of December, 1850 both inclusive. It may prove important hereafter.

Sea Days.	Harbr Days.	Expenditure of Fuel.		Distance run.		Number of Times at Anchor.
		Coal.	Wood.	Under Steam	Under Sail only.	
145	229	Tons. 213·5	Tons. 91·5	Miles. 2,64·5	Miles. 6,736	

NAUTICAL NOTICES.

10, Stockwell Villas, November, 1853.

Dear Sir,—Having observed an error of several miles in the position of the Lanrick Rock as given in Raper, I beg to send you the correct particulars, together with a few other remarks, which may perhaps interest some of your readers, particularly the notice of the Rawson, Shepherdess, Forth, and Alexander Rocks, which I hope may induce other parties (when convenient and fine weather prevailing) to steer for them, and endeavour, as I have done, to prove their existence or non existence. The increasing number of our clippers engaged in the China and Home trade, has induced me to add a few remarks on Passages. I am sorry that, my old logs and note books being in China, I cannot enter more fully into the subject at present.

I remain, &c.

THOS. B. WHITE.

To the Editor of the *Nautical Magazine*.

The Lanrick Rock.

The Lanrick Rock has about eleven feet on it, perhaps less; when it was under the bilge we had 5 fathoms in the chain and 15 fathoms at the bow and stern. It is of very small extent and exceedingly dangerous, the soundings giving no warning; for the next morning at anchor in 17 fathoms, and not more than a mile and a quarter from its position, the boats, after a two hours' search, could not find it, nor did they see any discoloured water or get less than 17 fathoms. The position I make as follows:

Long. of ship at anchor by 5 alts. Jupiter * at daybreak	107° 0' 22"
5 alts. ☉ 16 $\frac{1}{2}$ °	0 37
3 alts. ☉ 23 $\frac{3}{4}$ °	1 09
6 alts. ☉ 30°	1 10

Mean	107 0 50
After striking ship ran W.S.W. 1 $\frac{1}{4}$ ' equal to	1 10

Long. E. 107 2 0

(Allowing Gaspar Peak to be in 107° 6' E., by three good chronometers to Gaspar next day.)

The latitude I made $1^{\circ} 52' 30''$ S.; but as we weighed a little after 8 a.m., it was deduced from the noon observation, and may therefore be half a mile or so out.

In navigating this part of the China Sea a good look out should be kept, as many similar shoals probably exist yet undiscovered.

Islands and Shoals in the southern and middle part of China Sea.

St. Esprit Group are very imperfectly delineated even in the latest charts, although their position is nearly correct. The N.W. Island is high, and the S.E. are low rocky islets. I have counted nine in all, but there may be other rocks I have not seen in passing. They extend from $0^{\circ} 42' N.$, $107^{\circ} 0' E.$, to $0^{\circ} 32' N.$, and $107^{\circ} 14' E.$ There is also an island moderately elevated and well wooded in $0^{\circ} 43' N.$, $107^{\circ} 21' E.$

St. Pierre.—I made the centre of the large island in $1^{\circ} 54' 30'' N.$, and $108^{\circ} 41' 30'' E.$ Three chronometers agreeing to 2' in five days to Gaspar, allowing Gaspar Peak to be in $107^{\circ} 0' E.$ (sea horizon.)

Po. Condore, Ceices de Mero, and Po. Sapata, are all several miles out in the charts; but their positions have been correctly ascertained by the late Lieutenant Gordon, and published in your volume for 1844. As these were probably Ro-s's starting points in his surveys of the shoals to the eastward, it follows their positions may also be affected. A steamer would be well employed by the Admiralty in correctly fixing the position of all the shoals fringing the great coral field in the S.E. part of the China Sea, say from Luconia Shoals up to West London, and thence to the North Danger, many new shoals having been reported on this route of late years, whose positions are very doubtful, some given for dead reckoning, others from bad sights in a gale and drizzling rain, &c. Tory, Orbana, Pratt, Rob Roy, Spratley, Austin, Dhaille, and others between West London and North Danger, ought more particularly to be correctly placed, for here it is that the strongest and most uncertain currents are experienced, sometimes to the extent of fifty-six miles in the twenty-four hours; and frequently without the possibility of getting sights for thirty-six or forty eight hours. This and the survey of the Palawan Passage, would be of far more use than throwing money away on a survey of the eastward of Palawan and Mindanao, a part where the British flag is never seen; while the Palawan Passage, if well surveyed, would become the highway of all heavy ships from India and the Straits during the N.E. monsoons. These surveys, with a suitable steamer and good staff of officers might easily be accomplished in two seasons, by timing the position of operations according to monsoon. The cost of coal would be small, Lahuan being so close at hand.

Shepherdess, Christopher Ranson, Forth, and Alexander Shoals, I do not believe to exist. I have often steered for them in clear daylight, (observations with three good chronometers) with officers and several good look-out men aloft, but could never discover either discoloured water or breakers. The Shepherdess particularly being right in the fair track, would surely have been seen by others did it exist. No soundings were had, nor was a landing effected; and I consider it merely two sleeping whales, which are frequently to be seen in this neighbourhood, and might easily be mistaken for rocks.

The Rawson was no doubt bilged on the three fathom patch lately found a few miles S.E. of Po. Sapata.

The Forth rock is said to have been seen at 2 a.m. of a dark, squally night. And the Alexander Wreck is asserted to have been afterwards seen on the Western Reef. Nor need one be much surprised at this latter discrepancy, when it is known that in the strength of the S.W. monsoon, observations are often not to be had for thirty-six or forty-eight hours, and the current, in that season often runs from thirty to as much as fifty-six miles in twenty-four hours, varying in direction from E.b.S. to N.E.b.E.

Passages up and down the China Sea.

Horsburgh so well describes the winds and weather in this part, that it is needless for me to say aught on that head. But as the direct passages against the monsoons were not made in his days, I will give a few hints, as briefly as possible, derived from an experience of some twenty odd voyag-s, which may perhaps prove useful to commanders new to the trade. As some criterion of what a well-manned and well-found clipper ship may do at various seasons of the year, I also enclose an abstract of a clipper's passages for eight years.

Passage up China Sea.—In S.W. monsoon follow Horsburgh's Directions.

In N.E. monsoon. After leaving Singapore, stand over to the eastward as quickly as possible toward West Island. (Do not be tempted by a good luff on starboard tack to work up to the westward of Anambas or Natunas, or you will surely be disappointed, the current then running from one to two knots an hour against you.) Being near West Island the new charts on board, you may take any of the channels and stand to the eastward until in the meridian of Tanjong Datow, thence work up to the northward along the edge of the shoals to the West London, remembering to tack, if only for an hour or two whenever the wind veers a point in your favour, and that the closer you keep to the eastward the less current you will experience, at same time do not approach the shoals to less than fifteen to twenty miles at night, for besides some of them being doubtfully placed, the currents here are very uncertain both in strength and direction.

From the West London work on to the North Danger, taking every advantage of the wind veering a point or two, which it occasionally does towards night; from this pass to the eastward of Macclesfield Bank, after which you will generally (if moderate) find the wind draw more easterly, and with an occasional short tack to the east you will be enabled to fetch your port. In the strength of the N.E. monsoon never bear up till your port bears at least N.N.W.; but in the latter part of March and beginning of April, when the winds hang a good deal easterly, a passage is often quickly made by standing to northward inside the Paracels, and working up the coast from Haitan to Hongkong.

If bound to Shanghae, being abreast the North Danger, work over to the Luconia shore, keeping it close on board till abreast of Cape Bajadore, thence proceed through Bashee Channel to the eastward of Formosa and Hoa-pin-su Group, up to the Saddle Islands, and then follow the Directions for entering the Yangtze-kiang given in *Nautical Magazine*, 1851, by a Young Salt, alias a most experienced China coaster, than which none can be better.

If bound for Amoy, proceed as for Shanghae to the eastward of Formosa, (the currents on the east side set to the north in N.E. monsoon,) and when round the north end you will have a fair wind for your port. This is preferable to beating up the Formosa Channel, where the currents run very strong in a contrary direction.

Passage down China Seas.—In N.E. monsoon follow Horsburgh's Directions.

In S.W. monsoon. Leaving Canton River stand down toward Haitan, which you will often fetch without tacking, thence across Tonquin Gulf to the Cochin China coast, keeping it close aboard, land and sea breezes and smooth water generally prevailing close in, when past Cape Varela the monsoon generally blows fresh, and frequently very hard squalls come out of the Gulf of Siam. From Cape Varela stand to the south, (making a tack if necessary to weather West London and other shoals south of it,) till the coast of Borneo is reached, along which work, and pass out through any of the south Natuna Channels; stand across to Singapore, keeping well to southward before closing with Bintang, to be sure of your land fall, as the currents run very strong when near it, sometimes as much as two miles an hour to the north; they also

run one and a half miles an hour between the Anambas and Natunas. I would recommend a ship bound to Anjer to pass through Gaspar Straits in preference to Carimata, there being less current in the former.

NEW ISLANDS IN TORRES STRAIT. BORNEUF WRECK.

3, Crosby Square, 31st October. 1853.

SIR,—We beg to hand annexed copy of a portion of a letter just received from Captain George Pearson, of our ship *Cashmere*, regarding the presumed discovery of some islands a short distance from the southern entrance of Torres Strait.

Should this be any new discovery, we disclaim all desire to have these islands named after ourselves, but merely forward you the present information, supposing it may be useful.

We are, Sir, your very obedient servants,

HENRY H. WILLIS AND CO.

To Admiral Sir Francis Beaufort, K.C.B.,
Hydrographer to the Admiralty, Whitehall.

REPORT OF THE "CASHMERE."

The *Cashmere* left New Plymouth, New Zealand, July 12th, 1853, on her way to India, viâ Torres Strait. For the first part of the passage experienced a continuance of heavy squalls, and gales of wind from the N.W., with heavy rain, until July 28th, in lat. 22° 29' S., from whence southerly winds and fine clear weather.

On Thursday, August 2nd, at 3 p.m., saw the Alert reef, and not being able to weather it, tacked, and stood to the southward. At daylight nothing visible from the mast-head; bore away to the W.N.W.

Thursday, August 4th, 6 a.m., saw two islands covered with bushes, from 18 to 20 feet high, apparently with a fine sandy beach; one bearing W.N.W., the other N.E., by compass, not being marked in any of our charts, nor in Horsburgh's Directory. Hauled the courses up, and laid the fore-yard to the mast, and drifted down mid-channel. At 7 a.m. the following bearings were taken by an azimuth compass:—West island, north end, S.W.b.W.¼W.; south end, S.W.¼W., with heavy breakers from the S.W. end. East island, north end, N.E.b.E.¼E.; south end, E.b.N.¼N., with heavy breakers extending 3 or 4 cables' length from the N.W. end.

8 a.m.—Bore away N.W.b.N.¼N.; position of the ship at noon, by good sights, lat. 16° 22' S., long. by chron. 149° 38' E., which by course made good since time of bearings places the East island in lat. 16° 53' S., long. 149° 51' E., west side; West island, lat. 16° 55' S., long. 149° 43' E., east side; visible from the deck between 9 and 10 miles distant.

Should the above described islands not have been previously noticed, I shall call them Willis's Islands, in compliment to the owner of the *Cashmere*.

Sunday, August 7th—Entered Torres Strait at 2 p.m. by Raine Island passage. Saw the wreck of a large vessel on the N.E. end of the "great detached reef," apparently broken in two, mast over the side. An American bark in company, name unknown.

Wednesday, August 10th.—At noon hove to off Booby Island, and sent our report on shore, where saw the vessel wrecked was the *Borneuf*, which struck at 2 a.m. on the morning of the 3rd. Crew taken off by three Dutch vessels, and six by the *Earl Grey*, who reports that the Captain of the vessel, his wife, sister, and five seamen were drowned. The *Earl Grey* was bound to Bombay, August 7th. The American bark still in company; still not able to ascertain her name.

After leaving this island had easterly winds and fine weather. 17th passed

between the islands of Timor and Rotte. September 4th crossed the equator, with variable winds and squally weather. 13th arrived off the Sand Heads, and took pilot on board; steamed up the river, and anchored off Calcutta on the 15th.

Your obedient servant,
GEORGE PEARSON.

DIRECTIONS FOR PORT PHILLIP.

Bound to the North, or through the West channel, to clear the Wandsworth shoal and the shoal bearing S.W. of it, in passing to the westward bring Tabius House on the beach on with Swan point, before a small island bears W.b.N. off the North end of the Swan point, and keep it so until the same island bears West. The shoals are less than a cable's length apart, with 3 and $3\frac{1}{2}$ fathoms between them; the shoals must not be approached within a quarter of a cable's length.

Bound to the North, or through the West channel, to clear the Wandsworth shoal and the shoal bearing S.W. from it, in passing to the East bring Tabius House on the beach open of Swan point the same distance it appears from the Lighthouse, before a small island off the North end of Swan point bears W.b.N., and keep the marks as stated above until the same island bears West. The bearings are magnetic.

To make the B. R. buoy at the East entrance of the South channel, when the foot of Arthur's Seat bears South, and a peaked hill E.b.S. on the North slope, you are abreast and within one mile and a half of the East B. R. buoy of the South channel.

Courses through the West channel.—From the North end steer S.S.W. till abreast of the White buoy, then S.W. to the Lighthouse, taking care to open the heads before the S. Red cliff bears W.S.V. The rock off point Nepean, its own breadth open with Swan point, clears the West banks of the West channel. To clear the shoal of Swan spitt, keep point Lansdale open with Shortland bluff until Swan point bears $N.\frac{1}{2}W.$, then the course is N.N.E.

To clear the Pope's Eye, bound through the West channel, keep Swan point to the Northward of $N.\frac{1}{2}E.$ till Shortland bluff bears $W.\frac{1}{2}S.$, magnetic.

From Williamstown to Geelong.—From the buoy off Gillibrand point steer S.W.b.S. till abreast of point Cook 9; then steer S.W. until point Richards bears $S.\frac{1}{2}E.$; then steer W.S.W. for the White buoy off point Wilson; then haul up W.S.W. for the anchorage in three fathoms water, having the town open, point Henry bearing S.W.b.W., or the Bird rock a little West Station peak.

From the N.E. of the South channel the anchorage off Williamstown bears $N. 6^\circ = N.\frac{1}{2}W.$ This course will give vessels a fair berth from the shoals of Gillibrand point. Care must be taken, after bringing the Lighthouse to bear W.N.W. by compass, not to stand into less than four fathoms water on the West shore, and also to guard against a bank which lies off the Eastward shore beach, bearing from the Lighthouse about $N. 22^\circ E. = N.b.E.,$ to $N. 7^\circ E. = N.\frac{1}{2}E. 1\frac{1}{2}$ miles.

Bound down the West channel on the Southward, to clear the Wandsworth shoal and the shoal bearing S.W. from it, passing to the West bring Tabius House on the beach on with Swan point before a small island off the North end of Swan point bears West, and keep it so until the same island bears W.b.N. The shoals are less than a cable's length apart, with 3 and $3\frac{1}{2}$ fathoms between them, but neither shoal should be approached within a quarter of a cable's length.

Bound down the West channel or to Southward, to clear the Wandsworth

shoal and the shoal bearing S.W. from it, in passing to the Eastward bring Tabius House on the beach open of Swan point the same distance as it appears from the Lighthouse before a small island off the North end of Swan point bears West, and keep as stated above until the above-mentioned island bears W.b.S. The bearings are magnetic. The shoal was named after the ship *Wandsworth*, of Port Glasgow, which struck on it.

Courses and Distances from the different channels to Williamstown, and *vice versa*.—From the Black buoy off Gillibrand point to the entrance of the West channel, the course is S.b.W., distance 24'. From the above buoy to East entrance of the South channel the course is S.b.E., distance about 28', magnetic. From the North end of Symonds channel to the anchorage off Williamstown bears N. 6° E. = N. $\frac{1}{2}$ E.

From the North end of Pinnac channel the anchorage off Williamstown bears N. 5° E. = N. $\frac{1}{2}$ E.

Courses through the South channel.—From the B. R. buoy at the East entrance to the White buoy, open of point Nepean to the Northward of the said White buoy, steer West, or point Flinders a little open of point Nepean. If point Nepean is not seen, keep the Lighthouse W.b.S., entering the West end of the South channel. Keep point Flinders of point Nepean, steering East by compass, will take you to the first White buoy, keeping point Nepean open of Observatory point.

Courses from Hubson's Bay to the Channel.—From half a mile East of the Lighthouse to the entrance of the West channel, S.b.W., distance 24'; from ditto to the Eastern entrance of the South channel is S.b.E., distance 28'.

From the North end of the West channel the anchorage at Williamstown bears N.b.E. $\frac{1}{2}$ E.

From the North end of the South channel the anchorage at Williamstown bears N. 6° W. = N. $\frac{1}{2}$ W. These courses will give Gillibrand point a fair berth.

ALLEN W. YOUNG, Commander Ship *Marlborough*.

[These remarks were obtained from Mr. Carr, Port Phillip pilot.]

AUSTRALIAN DIRECTIONS.

SIR,—A pamphlet has just been placed in my hands, entitled "*The South Australian Directory, or Sailing Directions from Denial Bay to Cape Northumberland*;" by Thomas Lipson, Commander R.N., Naval Officer of South Australia." In the introductory letter, addressed to the Colonial Secretary at Port Adelaide, the Author says: "The great inaccuracy of the Directory just received from England, particularly in the intricate and very dangerous line of coast between Cape Willoughby (Kangaroo Island) and Cape Northumberland, render it expedient, from the great increase of trade between this and the neighbouring colonies, that they (Commander L.'s Sailing Directions) should be published with as little delay as possible. From the disarrangement of names, and entire misplacement of Capes, in the late published Directory, I have thought it advisable to subjoin a sketch of the line of coast between Cape Bernouilli and Northumberland, with the names now used, which I must request to have printed with the Directions." Now, Sir, that there are "inaccuracies" in the late published Directory. I will not for a moment deny, for what sailing directions are there exempt; but that there is a "disarrangement of names and entire misplacement of Capes" in that work, I deny *in toto*, for had Commander L. taken the trouble to have even glanced over the voyages of Baudin and of Flinders, he would have seen that the former officer both discovered and named the line of coast prior to Flinders' visit, which is stated in the account given by the latter, vol. i., p. 196, where it says, "Next morning

we again followed the coast at the distance of from 5 to 3 miles, and at noon a somewhat projecting part, which *appears* to be the Cape Bernouilli of the French navigators, was 3 or 4 miles distant to the East. Its latitude is $36^{\circ} 33'$, and long. $139^{\circ} 51'$." But here Flinders was wrong in his supposition. The Cape Bernouilli of the French was 27 miles to the southward of that position, or in lat. $37^{\circ} 0'$, the projection which Flinders considered as Cape Jaffa of the French. The names given by the French, being the first discoverers, have, therefore, been retained, and no "disarrangement" in the nomenclature has been made. Indeed, for that part of the coast, both as well in the second as in the third editions, of which I was the Editor, and which have been published at the Hydrographic office during the present year, the description and names are the same as in the first edition, compiled at that office in 1829 by Lieut. J. S. Roe, R.N., the present Surveyor General of Western Australia; an officer who, from his having been engaged under Captain P. P. King in surveying a great portion of the Australian coast, even Commander L. must allow was fully competent to undertake the arrangement of such a work; and one, who had he considered that he had inadvertently misnamed Capes, &c., would not have allowed upwards of twenty years to have elapsed without having had the error rectified.

I have before admitted there are inaccuracies in the work, but these in a great measure arose from want of later information than what was given in the first edition of 1829. The demand, therefore, for some sort of directions to assist the navigator, especially as the original was exhausted, and the sudden increase of our intercourse with Australia, rendered it necessary that a second edition should be published, even if it contained nothing new, with as little delay as possible.

But in order that future editions might be improved from additional information, two copies of the work were sent to the Harbour Masters and other officers on the Australian coast, who, it was presumed, would have had sufficiently desirous for the improvement of the Directory; one of which copies, it was requested, might be returned, with any suggestions or corrections therein that might be considered useful to the mariner. With this request Commander L. has not condescended to comply, but has thought proper to pass a verdict on a work, ere he had investigated the subject he was considering.

It has caused me much regret to be, as it were, compelled to refute Commander L.'s statement, as he is an officer to whom this office is indebted for many valuable remarks on the coast in his immediate locality, (Gulf of St. Vincent, &c.); and had he in a kindly spirit forwarded his supposition that an error had been committed in the nomenclature, instead of publishing it as a gross error or inattention in the editing of the Directory, tending to mislead navigators, it would have been so satisfactorily explained to him, that I feel convinced he would have seen that he had not sufficiently investigated the matter previously, and which would not have required the necessity of the animadversions which have fallen so unwillingly from

Sir, your obedient servant,

JOHN BURDWOOD, Master, R.N.

SAILING DIRECTIONS FOR THE COAST OF THE NORTHERN ISLAND OF NEW ZEALAND.

(Continued from page 554.)

REMARKS ON THE RIVER HOKIANGA.

The River Hokianga is the northernmost port on the West Coast that can contain ships of burden. It flows in a N.E. direction for 20 miles, between the wooded ranges of Weima and Punguru, whose steep sides approach the

bank of the river at distances varying from 4 to 10 miles, supplying the Hokianga by large tributaries, winding through valleys of great capabilities.

These mountain ranges are from 1,500 to 2,000 feet in height, and the Maungataniwa, at the head of the Maungamuka, was found to be 2,151 feet (probably the highest mountain north of Hauraki Gulf).

The river is navigable and has few obstructions for 15 miles from the heads. The depth in channel varying from 4 to 26 fathoms mud and sand; and the water salt to the source.

The bar is composed of dark green sand, with surface inequalities, the outer part being $1\frac{1}{2}$ miles from the heads, and stretching from shore to shore. Its breadth is about a quarter of a mile. Between it and the heads the water deepens to 20 fathoms.

At low water springs, 16 feet will be met with, in crossing on the direction bearing, but at high water there will be four fathoms, and as the bar generally breaks, it should be taken at half flood.

(During the month of February, we crossed the bar when perfectly smooth at low water, neaps, having 16 feet, and drawing 13 feet 6 inches.)

In the old plans there are three distinct channels laid down, namely:—the North Channel, which was considered narrow, but deep, but objectionable, because the swell would be on the beam. The S.E. Channel is laid down as narrow, but with nothing less than $3\frac{1}{2}$ fathoms; this is sometimes called Herd's Channel, and the *City of Edinburgh*, of 600 tons, ran through it, having lost her rudder on the South Head rocks.

The fact is, I believe she ran over the bar as may be the case in any part of it, at or near high water for vessels drawing 20 feet.

The pilot has been here 23 years, and he believed in the channels, although he kept to the middle channel, and never sounded. We were sure by watching the breakers from the heads that they did not exist, for the sea curled over the whole extent; and we afterwards sounded the bar, having succeeded in getting two days during which it was perfectly smooth, and employed four boats in the service.

The result is, that the bar extends for two miles from N.W. to S.E., at the distance of $1\frac{1}{2}$ miles from the heads. At low water springs you must cross 17 feet. The mark for going in has been judiciously laid down by Mr. Martin, the pilot. His white cottage is built in the bay in line with the south head, which takes you over the narrowest part of the bar, and by keeping it a little open on the head, we found the deepest water.

The pilot does not remember any change in the appearance of the bar, but I should think it very possible that the heavy floods and rapid tides might produce a change on these sands.

The tides at the heads run five miles per hour.

The banks of the river are everywhere approachable for boats at high water. At low water the mud flats (commencing four miles from the heads) are of considerable extent, generally soft and very steep to, and extending from point to point.

The first tributary of any importance is on the south bank between 7 and 8 miles from the heads (the Wirinaki).

Creeks.

There are four extensive salt water creeks on the north bank before reaching Wirinaki, meandering through miles of mangroves and terminating near the foot of the Pungluru mountains.

Names of Rivers.

Besides the Wirinaki, there are the rivers Omanai, Waima, and Wairiri on the south shores. The Hauraki, (a continuation of the Hokianga itself,) the Orewa, the Maungamuke, the Motu Karaka, on the north shores.

General account.

These rivers can scarcely be considered navigable for vessels drawing more than 6 feet water, and the channels generally very narrow. About half way from their source the water is fresh at half-tide. The entrances are lined with mangroves for 2 or 3 miles, when the shores approach wooded and steep until the boughs reach across. In some the rapids are very strong after the rains. The bed of the Hokianga is for the most part soft mud, but near the mouth there is a hard sand-bank called the middle ground, and for the first five miles the bottom has a sandy superficies caused by the great sand-drift from the westward, which has also impregnated the whole coast with sand for some miles into the interior. Indeed wherever the west coast has a slope sufficient to retain the deposit, it will be found to be of fine yellow sand of depth according to the exposure.

The argillaceous white cliffs, from 15 to 30 feet high, falling perpendicular to the high water, are common to both banks of the Hokianga. Off these and extending along the shore are huge boulders of iron sandstone, some of them 30 feet in circumference, and nearly round; they do not, however, reach beyond the low water mark.

The west bank of the river affords the greatest timber forests. The kauri is first seen up the Pupuwai, and the principal branches from which it is obtained are the Maungamuka and Orewa, but it has become scarce from the quantity destroyed by the natives in removing it.

There were two vessels came for timber this year (1851), and there are about four cargoes ready for vessels of 500 tons. But Kaipara seems to be more attractive, being nearer to Auckland.

A very small portion of the soil is cultivated, and there is a great quantity of land that might easily be cleared.

Two small schooners carry all the exports, which consist of hams, wheat, honey, and potatoes, and a small quantity of worked up plank.

There is, however, a vessel building of 50 tons in the Pupuwae, but there will not be sufficient trade to retain her services on the river.

That the trade of this river has declined considerably, is to be attributed to many causes. The demand for timber is about one-fourth of what it was, the difficulty of obtaining it is increased, and one of the principal exporters has gone to Kaipara.

There is now no demand for kauri gum.

The late war frightened many of the settlers, and when the Government brig came, few that embarked ever returned. There were then 200 Europeans in the river, there are now 75.

The inhabitants complain of want of protection, and a magistrate should be sent here; they are exposed to repeated insults from the natives, and cannot afford to send to such a distance as Monganui or the Bay of Islands. One vessel some years ago was plundered; and merchant vessels are liable to insults from the ill-disposed natives. The larger proportion, however, are well disposed, and would back the authority of a government officer.

The climate during our stay in the month of October and November was variable, but the amount of rain, compared to Auckland, considerably less. The fogs we had heard much of seldom lasted three hours, generally from daylight to about 8 a.m.

I subjoin an abstract of the weather during 59 days. The westerly winds are in proportion nearly three to one:—N.E., 14d. 2h.; N.W., 11d. 11h.; S.E., 3d. 22h.; S.W., 23d. 10h.; Calm, 7d. Fog, 116 hours; thunder, twice. Maximum temperature, 75°; minimum temperature, 52°; mean temperature, 62°.

(To be continued.)

NEW CHARTS.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill.

ENGLAND, Teignmouth Harbour, Captain Sheringham, 1852-	-	1	0
BALTIC SEA, Sheet 6, Hango Head to Hogland, Russian Survey	-	1	6
" " 7, Hogland to St Petersburg, "	-	1	6
" " Hango Road and Outo Islands, "	-	1	0
" " Port Baltic and Rogherwick, "	-	0	6
" " Aland Islands, "	-	2	0
" " Kronstat, "	-	1	6
" " Carlskrona Harbour, Danish Survey	-	1	0
Danish Pilot, by the late Admiral Zahrtmann, and Views	-	4	6
MEDITERRANEAN, Black Sea, Russian Survey, 1836	-	2	6
" " Russian Ports, Black Sea, north side	-	1	6
" " Turkish ditto " south side, 2 charts, each	-	1	6
" " Odessa, City " - -	-	1	0
" " Archipelago Index, 1852 - -	-	1	6
" " Lights, corrected to November, 1853	-	0	6
WEST INDIES, St. Thomas Harbour, Lieut. Lawrance, R.N., 1851	-	2	6
" " Lighthouses, corrected to 1853	-	0	3
NORTH AMERICAN <i>British</i> Lights, ditto	-	0	3
SOUTH AMERICAN, Guaymas, Captain Kellett, R.N.-	-	1	6
" " Lighthouses, corrected to November, 1853	-	0	2
NEW ZEALAND, Nelson Anchorages, Captain Stokes, R.N., 1850	-	1	6
Discoveries in the Arctic Sea, corrected to October, 1853	-	1	6
SOUTH ATLANTIC, Tristan d'Acunha Group, Captain Denham, R.N.,			
1852 - -	-	1	6

EDWARD DUNSTERVILLE, Master, R.N.

Hydrographic Office, Admiralty, November 21st, 1853.

The wages of the seamen (Russian) are so low—about sixteen rubles a year—that it is not unnatural they should desire to increase so miserable a pittance by any means in their power. The consequence is, that from the members of the Naval Board to the boys that blow the smiths' bellows in the dockyard, everybody shares the spoils obtained by an elaborately devised system of plunder, carried on somewhat in this way:—A certain quantity of well-seasoned oak being required, Government issues tenders for the supply of the requisite amount. A number of contractors submit their tenders to a Board appointed for the purpose of receiving them, who are regulated in the choice of a contractor, not by the amount of his tender, but of his bribe. The fortunate individual selected immediately sub-contracts upon a somewhat similar principle. Arranging to be supplied with the timber for half the amount of his tender, the sub-contractor carries on the game, and perhaps the eighth link in this contracting chain is the man who, for an absurdly low figure, undertakes to produce the seasoned wood. His agents in the central provinces accordingly float a quantity of green pines and firs down the Dnieper and Bog to Nicholæff, which are duly handed up to the head contractor, each man pocketing the difference between his contract and that of his neighbour. When the wood is produced before the Board appointed to inspect it, another bribe seasons it, and the Government, after paying the price of well seasoned oak, is surprised that the 120-gun ship, of which it has been built, is unfit for service in five years.—*Russian Shores of Black Sea, Oliphant.*

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