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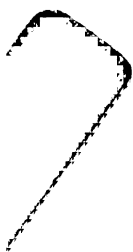
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THE NAUTICAL MAGAZINE

AND
NAVAL CHRONICLE.

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No. 1, FOR



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JANUARY,

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THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

JANUARY, 1867.

THE PROPOSED NICARAGUA LINE TO THE PACIFIC.

In all gigantic enterprises, it should not be forgotten that the words of the enthusiast must be received with extreme caution; for historical records prove that the greatest commercial failures which have ever fallen on the people of this country may be traced to the singular influence which a daring speculative mind, on certain occasions, is enabled to establish over his fellow-men. Do we turn to the great South Sea or the Mississippi schemes of the last century, or that of the end of the previous century called New Caledonia*, or the railway mania of our own times?—we see at once how blindly the wisest rush into ruinous speculation without a thought of their possible failure.

If a stranger to Nicaragua and its deadly swamps were to form his idea of the country from Capt. Pim's glowing description, he would imagine it to be one of the healthiest climates of the globe. Would that I could echo the words of his report. But a long experience of the particular locality which he mentions compels me to state that I have ever found it to be one of the most trying to which a white man can be exposed. How can it be otherwise when the great accessories to disease in the tropics are present, in the shape of swamp, heat, and rank decaying vegetation.

The fact of the *Gorgon* being enabled to work in to Monkey Bay proves that the favourable season of the year, when the N.E. trade wind blows home, had set in; and therefore it is not surprising that under such circumstances a robust well-fed Englishman should be

* See *Nautical Magazine*, 1853.

enabled to make a journey which would only extend over a few days without inconvenience. Had it been tried in the rainy season, we should in all human probability have never heard again of Capt. Pim, and the flag-lieutenant on the station would in a bumper of champagne have wished him a pleasant passage to the Pacific. Those who take an interest in naval affairs must remember that within the last few years her Britannic Majesty's ships, as well as the American, have lost one-third of their crews by fever on that fatal coast,—I do not include Lord Nelson's* ship: she lost nearly the whole of her crew, who ascended the river,—although they were never allowed to go on shore, or to be exposed to sun and rain on board. Owing to the clearing and drainage of the land around Colon, the health of the people there is vastly superior to that of the residents of Grey Town. Still, during the rains and two or three following months, no ship can lie in the port for a week without contracting fever. Few of the railway officials escape without several attacks every year: they are now seldom fatal at the time; but the constitution becomes so impaired, that a change of climate is indispensable if the patient wishes to save himself from being a sufferer for life. It is singular to mark the affinity which this fever has for those who have once suffered from its attacks. In more than one instance I have seen it return in a few days after landing, when a person had been eight years absent from the country. During the construction of the Panama Railway every possible care was taken to keep the labourers in health; yet the line is said to be fenced with the graves of the dead of all nations, whose number no man can tell.

Does Capt. Pim imagine that his labourers could preserve their health amidst swamps of a similar nature to those which proved so fatal in this earlier undertaking? The manner in which he speaks of the eagerness of the sparse population to commence the great work proves that he does not understand the nature of the race he would employ. Throughout Central America no man will work more than is necessary for a bare subsistence. Want of labour paralyzes every undertaking, and that which is imported can alone be depended on. Let the traveller study the faces of the numerous labourers who may be working on the jetties when he lands at Colon. In a few months he will see a completely new lot; the former, having made a few dollars, return to their huts in the country, till necessity again bids them work.

Colonel Totten, the great engineer of the Panama Railway, the man by whose indomitable skill and endurance the isthmus was first spanned, has often informed me of the great straits they were frequently reduced to for want of labour; and it was only by the introduction of a colony

* "Several old Indians at Cape Gracias a Dios agreed that Lord Nelson's expedition had been undertaken at an improper season of the year; that his men had been restricted in their mode of acting, and were obliged to conform to habits of discipline, and diet which dispirited them. Disease, discontent, and disappointment were the consequences, and the enterprise was abandoned after a partial success."—*Roberts' Narrative*.

from Carthagena that the work was ultimately completed. The inhabitants of the isthmus contributed no more towards making the railway, than the Neapolitans in 1859 did towards liberating their country. Both are indebted to the foreigner for success.

At a rough guess, the proposed line from Monkey Point to Lake Nicaragua might be about three times the length of that of Panama. Goods, on arrival at the lake, would have to be embarked in a steamer and carried to the opposite side, there to be disembarked and again loaded up. On arriving at Realexo a similar unloading and loading must take place before the much-handled merchandize would be afloat on the broad Pacific.

In the endeavour to launch his scheme, Capt. Pim treats with injustice the site and advantages of Panama. We all know it is a serious disadvantage for ships to have to discharge their cargoes and passengers into lighters for transmission to the terminus of the railway, or *vice versa*. But we are also cognizant that the directors had determined on running a pier into deep water if the New Granadian Government had had the good sense to have renewed their charter. It is a misfortune for the commerce of the world that they did not; and, in the end, no people will be such losers as the contemptible, corrupt officials of New Granada. If they imagine for a moment that the Colossus who now overshadows the whole northern continent will quietly give up possession of the key of the two worlds when his lease is up, their vanity must have set them beside themselves. In six months after the departure of the Americans, supposing such an event should ever take place, the forest would again meet over the track which an energetic people have hewn through it at a huge expense of life and treasure.

Calms certainly prevail at intervals in the Bay of Panama,* just as they do in any other tropical region. But, after a long experience of the place, I may with truth assert that I have seldom heard merchants mention them as an evil which pressed heavily on commerce. Steam is everywhere advancing with such giant strides, that before many years have elapsed all the valuable carrying trade of the world will be done by steamers. Even Capt. Pim's railway, if made, would not greatly facilitate commerce, if steamships were not in waiting at either end to clear the glutted stores.

Colon is undoubtedly a bad port in the season of the Norther, but some seamen may not be aware that the wind never blows home; and the swell, which is so much dreaded, seldom or never comes in more than about once a year. I have known four to pass without such a visitation. Another proof that the port cannot be so very dangerous is the fact that the Panama railway brigs have been running monthly to New York since the opening of the road, without meeting with a single casualty. Neither, with the exception of the West India mail steamer *Avon*, have I heard of the wreck of any vessel there. The

* See a statement of the weather in the different months of the year in the *Nautical Magazine*, volume for 1856.

Avon, when trying to steam off in a Norther, broke the quarter-spring in canting, and the swell striking against the wrong bow drove her on the beach.

I believe the uncertainty which now exists concerning the renewal of the lease alone prevents the company from making improvements which would greatly increase the security of the port. A breakwater running out from Point Toro to the North-east would effectually shelter the shipping at the wharves, as well as those in the bay. Between the island of Manzanilla and the main land is a deep estuary, sheltered from all winds, that might be converted into an inner port by dredging out the mud. American energy only requires permission to work marvellous changes in the ports on both sides of the isthmus,—changes which would for some years amply meet the increasing demands of a commerce which is yet in its infancy.

A word about the political difficulties of the undertaking. The people of the state through which the line must pass belong to a race proverbially false and faithless,—a race that will without hesitation give any number of guarantees without the slightest intention of observing any one of them. At this day the inhabitants of Colon (native and foreign) are taxed, although the treaty with the New Granadian Government states distinctly that no taxes are to be levied on the land made over to the railway company.

The shareholders in the proposed line must also remember that they would have to take their chances of the mishaps which revolutions might bring on them. English statesmen have wisely resolved not to intermeddle in the politics of the New World, and the present position of France with regard to Mexico is a proof of the correctness of their views. In a country where one party seizes your horse for the service of the existing government, and a second your mule for the provisional one, it would be advisable before sinking millions of dollars to carefully examine the subject in all its bearings. The Americans are the people most deeply interested in the subject of railways across the isthmus, and Englishmen may rely that a people who are now constructing one, regardless of expense, from East to West through their own vast territory, would not allow Capt. Pim's route to slip through their fingers if any solid advantages, commercial or otherwise, could be reaped by appropriating it. But I will conclude my remarks with a few notes of my experience of the climate of Nicaragua.

A wag once informed our captain, in answer to his inquiries if there were any peculiar features of the land by which Grey Town might be recognized, that on nearing the coast a dense black cloud would be seen, and by steering for the centre he must find Grey Town. We neared the coast in the afternoon, and saw a cloud stretching along the whole of the horizon to the South-west. At 5h. the ship was taken aback by a sudden shift of wind from the direction of the cloud. The wheel ropes broke, and for the moment there was some little confusion. In a few minutes, however, the force of the wind had passed, and it commenced to rain, and such rain! It did not fall in drops, but in sheets of water, reminding one of the exterior edge of a cataract. An

officer remarked, "The hotter the war, the quicker the peace." But he was mistaken. Hour after hour the deluge kept pouring down, lighted up by that pale blue ghastly lightning which delights to hover over the pestiferous swamp in all tropical countries.

At daylight the weather cleared, and the rising sun came up from behind in a dense mass of opaque cloud, which rose from the valleys like a wall. "There is fever," said an old coaster, "plain and palpable in those masses. You might dig them with a spade." A low sandy beach was in sight about four miles distant from us, glistening in the pale sunshine with a sickly yellow hue; behind it rose the impenetrable jungle, and a few low hills topped at intervals with the gigantic cotton tree. As the ship slowly closed the shore, the light land wind came off with a damp unearthly coolness, which made men shiver, although the thermometer only fell to 75°. On the beach the heavy surf was breaking with that peculiar melancholy sound which must be heard to be appreciated, and sending showers of spray over the summits of the trees, that stood like a dense wall at the distance of a few yards from it. The surface of the sea was discoloured with mud, and far as the eye could reach strewed with the trunks and branches of trees. Flecks of foam, patches of grass, reeds, and other *débris* brought down by the River San Juan were strewed about the surface of the sea.

When within a mile of the entrance of the port a Yankee pilot came off in a canoe, and the following dialogue, which I subsequently found correct in the leading features, took place regarding the weather, &c.

Captain. "Does it often rain like it did last night?"

Pilot. "I guess it does, and a great deal harder too sometimes. If you get a slant to-day, you had better unbend the sails, and get as many ropes down as you can, or they will soon rot, for nothing stands long here except American pitch pine; English oak and ash rot very quickly, so look out for your boats' oars."

C. "When will the rainy season be over?"

P. "I cannot exactly say, although I have been here more than two years, as the rain lasts longer than on any other part of the coast, and is more uncertain. However, it gives over a little about Christmas, when the Northers set in, and while they last the place is bearable."

C. "Do the Northers occur frequently, and last long?"

P. "No; there are seldom more than three or four in the season, and they rarely blow strong over a few hours."

C. "Are you greatly troubled with mosquitoes or other insects whose stings induce ulcers?"

P. "Yes. If you attempt to penetrate the jungle, the mosquitoes attack you in swarms; and, unlike the generality of these insects, when they have tasted blood they are not easily shaken off, but allow you to kill them wherever they alight. On the beach the sand flies are a great torment; and should a manzanilla tree be near, their sting is so venomous that the mark remains for a fortnight afterwards. No precaution will protect you from this annoyance, as they get inside your clothing."

C. "Is there much fever here?"

P. "Yes; we are never clear of it for any length of time. Walker's filibusters die by hundreds. You will see a batch on shore who have just come down the river,—mere skeletons of men, although they have only been six weeks in the country, at a fort named Serapaqui. It is impossible for a white man to expose himself to sun or rain, and escape an attack of the *shakes*. The crews of the French and Italian brigs who trade with this port suffer severely. Not long since one of your vessels stationed here used to send a fishing party to haul the seine in the cool of the evening: the result was that seventy men were on the sick list in a short time."

There is a peculiarity about this fever which always astonishes medical men when they first come on the coast. I allude to the circumstance of its frequently breaking out nine days after the vessel has sailed, although not a case may have occurred while lying in port. When this takes place the attacks are generally troublesome, often fatal indeed. I have seen some which could not be detected from the worst species of yellow fever.

In no part of the American continent have I found the atmosphere so oppressive as at Grey Town. When the rains hold off for a day in the wet season the air becomes a perfect vapour bath, covering everything with damp and mould, so that in a few hours cloth, clothes or shoes which have been worn in England look as if they were covered with hoar frost. The rosy colour on the Saxon cheek is soon blanched, and replaced by a dingy yellow hue; but so imperceptibly is this change wrought in the majority, that it is only by comparison with fresh arrivals one can comprehend the difference which the climate has made in their appearance.

At the period of my visit a heavy frigate could cross the bar of the San Juan, and anchor under the lee of the sandy spit which formed the harbour; but there was at that time indications of the doubtful nature of its permanent existence, by the changes* which a heavy Norther would make in the contour of Punta Arenas and other parts. It is not my intention to write a history of Grey Town. One could not by land go beyond it. I ventured into the woods, but was attacked in such a blood-thirsty manner by mosquitoes that I was compelled to seek safety in a hasty retreat. While effecting this, I stumbled over a bush and disturbed a colony of wasps which had built their nest of clay in the fork of the branches. These insects are more than an inch long, and their sting in such a climate must be very troublesome. The bushes along the sea-beach appear to be their favourite haunt, as I never saw them on the banks of the San Juan.

The city of Grey Town is built on a swamp backed with lagoons, and I one day sat at the door of a house and shot snipe. On ship-board we were frequently uneasy by discovering that snakes (among them the deadly blood-snake) would swarm up by the cable or a slack

* The manner in which this point has gradually grown out is shown on the Admiralty plan.

rope which had been inadvertently left hanging over the side. The blood-snake we killed on board measured about 15 inches in length, the girth equal to that of a man's little finger. The colour of the skin resembled an earthworm's, and when the reptile was held up to the light I thought it shone through, as it might have done through a piece of dark cornelian. The natives dread this snake beyond all others, as its bite is said to be always fatal if the antidote is not immediately taken. I forgot the name of the nut which cures it, but in size and appearance it resembles a nutmeg. The troops of Costa Rica always carry it on a march. These snakes are brought down on the grass islands, which the river is constantly washing from the banks, and, being apparently aware of the insecurity of their frail raft, make for the first object which seems to offer security. On one occasion, when clearing out a quantity of boats' oars and lumber from amidships, a rock snake, five feet in length, sprang out among the alarmed seamen, who, however, slew him after an exciting chase. If shaken off a rope when trying to come on board, they strike out at a rapid pace for the shore, apparently as much at home in the water as on land.

The much talked-of River San Juan de Nicaragua at its mouth is not so wide as the Thames at London Bridge. The forest comes close down to the water's edge, except where a solitary settler has at rare intervals made a small clearing, and forms an impenetrable wall of verdure, through which no man could penetrate; the trees appearing to be literally strangled by the huge parasites which cling around them. As they fall, others spring up in their place. No gap is made to admit their enemy, man, within the line. Flowers of various colours cover the forest, or hang suspended from the branches on tendrils which dip in the river, or clinging to another object again ascend to the topmost bough. Many of these run hundreds of feet, so that it would be impossible to trace them to their roots. Huge alligators sleep on the slimy banks without fear of molestation from any enemy but man. They appear to be a solitary exception to the mutual destruction which is always going on in the animal kingdom. It is probable that they prey on each other; but no animal, reptile, or fish will wage battle with an alligator on land or water. When alarmed by the approach of man, they throw themselves into the river in a clumsy manner, making a noise equal to that caused by the fall of a good-sized log of timber. Their senses of hearing and sight must be very acute, as they are seldom caught napping on either element. I have frequently tried to drop down the stream in a small boat on one whose snout was just level with the surface, but rarely succeeded in getting close enough to have a good shot. It is a fallacy to suppose that a rifle-ball will not easily penetrate, if fired at a proper angle. I presume they have acquired the fame of being invulnerable from the fact, that if fired at end on the shot is certain to glance off. Their great quickness in facing about surprised me exceedingly after the stories one had heard of the difficulty they experienced in turning. I saw one about eight feet in length arch his back like a cat, and by a sudden spring come round in an opposite direction.

Various schemes have been set afoot to make this river a highway for the commerce of all nations, but none have ever been tried in practice. I presume because they were found to be impossible. The American stern-wheel steamers, which draw about 18 inches, pass the rapids with ease; but no labour could make them navigable for heavy draughts, supposing the port at its mouth to be accessible at all times, which we know it is not. It is far from being my desire to prove that the proposed railway cannot be made, but simply to point out that men should never undertake so gigantic a work without first carefully examining the physical and political difficulties which they will have to overcome in constructing and preserving the line.

THE LITTLE MINCH CHANNEL.

(Continued from vol. xxxv., page 627.)

Should my friend prefer travelling from Bhracadil to Dunvegan by road, and avoid the tossing which will be caused by a late gale against an ebb tide, and meet his vessel there, he will find in his journey something worth an hour's investigation.

At Struan Mhor, about a mile from the inn, will be seen the remains of one of the Pictish towers,—circular, perpendicular sides, interior compartments, doorway, &c.—but rudely and recklessly torn to pieces, to assist in building a wall; and thus has this ancient and curious Doune Tower been nearly demolished and sacrificed, to fence somebody's potatoes from the visitations of somebody else's pigs! There are also some other scattered and scarcely intelligible walls and ruins which perhaps his imagination can fancy, to add another testimony to the already little known origin of these buildings.

I have not seen this identical one, but I have visited and passed a most interesting two hours within the circular compartments of one on the west side of Lewis, near Loch Roag, whither I was transported by the kindness and hospitality of the warm-hearted Laird of Lewis Castle, and to whom I am greatly indebted for the opportunity and means of seeing this curious and ancient tower, as well as the strange Druidical stones at Callernish.

The form of the tower (near Callernish, Loch Roag, Lewis,) is conical, truncated, resembling much in its curved exterior a tile-kiln. The exterior displays no windows, nor aperture of any kind except a rough doorway; no ornamental marks or projections; no defences of any kind; a smooth exterior.

Within the exterior cone is a second one, and this concentric and similar wall is so formed, that while at the base there is a considerable interval between the two, they unite at the top; the centre is an area open to the sky; and there is no reason to suppose that they ever were roofed.

The space between these cones is divided into a number of tiers or stories, varying from three to five or more, by floors of stone, which complete the circuit. So that, by entering at one end into any of the galleries, a person may pass out at the other. A rude staircase communicates through the whole, and they are lighted from the interior area by square apertures for windows, but commonly only at one point. The whole of these openings, which are merely vacancies in the masonry, are ranged in a vertical line from the floor to the summit. It should be added that the lowest gallery is generally, if not always, sufficient to admit a man standing upright, and wide enough for him to turn freely, while it is sometimes even sufficient to admit two persons abreast. But in succession upwards they diminish, as a natural consequence of the inclination of the concentric walls; so that the uppermost will sometimes not even admit a child. The masonry is dry, or without lime, but remarkably well laid, and the lines of curvature are beautifully preserved throughout. The floors of the galleries consist of single flags, and the window apertures are in a similar manner divided by transoms of stone.

The principal measurements of the Pictish towers are all alike, and the variations in form of all at Glen Elg, Sutherland, Kildonan, Farr, Rogart, Olrick, Wick, Dunnet, &c., are very trifling; therefore one description serves for all. The doors of entrance vary from $4\frac{1}{2}$ to 6 feet in height. They are reduced in dimension as they rise upwards to 4, 3, and 2 feet, and in one place only a few inches.

Twelve feet may be safely taken as the thickness of the two walls, including the galleries; so that there remain three feet for each of the concentric walls, and the exterior diameter of the cone must be augmented to 45 feet.

There is no indication of more than one low door, and no appearance anywhere of a roof, and no windows or openings directed outwards. There is a difficulty about the galleries in the wall; for it would be impossible for even a child to force itself into them, and they could not be storehouses.

There is great mystery and difficulty in explaining the purpose of these buildings. The lower galleries may have been places of retreat or dwellings, and the others may have served to conceal property; but what possible use can be assigned to the upper stories? These could never have been roofed, for then the inner windows would be rendered useless.

These are no doubt strong places for the times in which they were built, and were proof against being effectually assailed by any means except mining. There is nothing to show how the doorways were secured; but being small, their defence would be more easy.

To some of these, near the sea coast, traces of an underground passage have been seen, whereby to effect an escape if necessary. Others have had earthworks thrown out, apparently designed for the defensive.

The stone of these towers is a fissile gneiss, resembling that of the
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hills near which they are built; but we require a proof of the Picts having occupied Lewis before we can determine that these are even Pictish towers.

I could not resist the temptation of remaining all night at the inn of Callernish, for the purpose of visiting early next morning the

“Fragments of stones reared
By children of clay,
Remnants of things that
Have now passed away;”

and truly a pleasant ramble they afforded. However, the time passed too quickly; but their positions, relative size, and distribution were pencilled down in my journal.

The visitors' album, which is placed before the traveller at the inn (after dinner, of course), is meant as a hint that the said visitor was to record his estimation of the comforts, civility, &c., which he may have experienced. It contains many fanciful ideas of those who have come here to see these stones and towers. “The Lay of a Modern Druid” is perhaps worth quoting; but, in doing so, justice requires that the information should be added that neither comfort nor civility were wanting at Callernish. My bed, on which I slept soundly, was made on a wide shelf in a cupboard, with tea-cups and tumblers hanging round me, and a few cobwebs in the corners gracefully festooned doing duty for curtains! True, it was very fortunate that I was not restless in the night from the quantity of peat smoke which it was necessary to inhale; for the fall of the glass and china would soon have brought the astonished host and hostess to their rescue. Perhaps my quiet sleep might be attributed more to the rectified essence of paraffine than the tumblers of hot whiskey toddy which they supplied.

Here is the “Lay of the Modern Druid,” on two victims supposed to have got up before the sun, three thousand years ago!

“The East glows with the coming deity, when
Kate and Rory took their way,
While the grass the dew was awigging,
In the jocund month of May.
She was Nature's spiciest daughter,
He was her most worthy son;
Many a youth in vain had sought her,
He full many a spicy one.

* * * * *

“From his pouch he took a knife out,
Sharp of edge and blade full fine;
He made a hole and let her life out,
And then he cried ‘Here's into mine!’” *

The first of these collections of Druid stones presented a “winged circle” near the inn, one stone of which is 15 feet in height.

* Thus in original.

Another is the "half-moon circle," containing charcoal pits, and the stone with the supposed characters—

"As Memnon's pile to rising sun
Sends charms around,
So cold grey stone gives sullen moan
On Druid's mound."

The third, fourth, and fifth are a mile from Callernish, and three miles from the inn; the last being a curious arrangement, on which is written—

"Behold how stand the 'mourning stones,'
Upright and firm as fixed of old;
But the giant braves who these upreared
Have scarcely left us a 'tale that's told.
Ages are gone since their setting sun god
On these grey piles cast her western rays;
One by one night darkness has shrouded
They are now but dim shadows of bygone days!"

The foregoing may justly be considered about as rude specimens of poetry, as the stones themselves of rational buildings.

The sixth represents a stone found in the half-moon circle, the fissures in which were at first supposed to be characters. It is preserved at Lewis Castle, and is both curious and deceptive.

As time was not my own, I parted with these curious but interesting ancient remains, regretting that it was not in my power to remain among them for months instead of hours.

Sir J. Matheson, Bart., has spared neither labour nor expense to have the rubbish, peat, moss, &c., removed from among these relics; and being now laid bare, they afford great attractions for visitors, and will well repay the time spent in a trip by Stornoway for this purpose.

Besides the tower, the visitor will see on the road from Struan to Dunvegan, about a mile (Irish) from the castle, the ruins of a church of very ancient date, although the roof has fallen in. Several of the epitaphs can be traced; but most of them are either overgrown with moss, or blurred by the effects of the weather. Those tablets which are inside the church walls are of marble, and mostly all in memory of the MacLeods and Campbells; those outside are overgrown by grass and weeds, and when I wandered among them the people were haymaking around the tombs.

Did ever my reader happen to meet with a Highland funeral? Perhaps so. But had he ever the curiosity to inquire who was the deceased, his titles, character, &c., from those who formed the *cortège*? If so, perhaps he was more fortunate than I was in gaining that information. The reply to my inquiries left me just where I was before my query was addressed to those important personages. All the information that I could gain from one after another amounted to— "Well, I really can't tell exactly, your honour; but I believe it's the gentleman in the coffin." So all I could do was to agree with my informant that such was most likely to be the fact.

We are making but slow progress through the Minch. The tide is against us, and it runs very rapidly too off the points at the time of springs, causing sometimes a complete "race." At times we are becalmed—true, not often—and waiting anxiously for a breeze. But, alas: when this does come, it soon freshens up into a gale of wind; the sails are scarcely trimmed when they must be shortened. Or, may be the wind is downright against us, and then there is nothing for it but to anchor,—perhaps in Loch Snizort. Still we have here the great satisfaction of knowing, that if hospitality is to be found in Skye, it is certainly to be found at Kingsboro'.

The old mansion which gave shelter to Charles Edward in 1746, and where Flora Macdonald entertained Dr. Johnson and Boswell, is gone—to the last vestige. The garden, however, with some venerable trees, are left; and near them the present comfortable and hospitable home of Kingsboro' MacLeod stands in its stead, where the stranger, whoever he may be, passing by finds a hearty welcome.

Flora Macdonald, the mistress of the old mansion, was a heroine, beloved by all who knew her. She died in 1790, and was followed to her grave at Kilmuir by three thousand persons. But that grave has nothing to distinguish it from others of the Kingsboro' family. The marble tablet over it being accidentally broken, was then carried off piecemeal by Skye tourists, one after the other, as if they were entitled,—that barbarous practice which consigns these remains to perish piecemeal, and pass away into fragmentary oblivion.

About 1773, Flora and her husband emigrated to North America. The vessel in which they sailed was attacked by a French privateer. Flora, with true characteristic spirit, maintained her station on deck, and encouraged the men to fight courageously. While thus employed she was thrown down, by which fall her arm was fractured.

Near the manse at the head of the loch, not far from Kingsboro', are two Druidical stones, of a description similar to those already noticed.

Crossing the Minch, for we have been detained by the attractive shores of Skye, we found it blowing hard from S.W. But this was to be expected, for the navigator will soon find out that it always blows hard from some quarter or other here, or else it is a dead calm,—the two very extremes which for a sailing vessel render this navigation the most undesirable. We soon had to close reef, and found ourselves in a heavy sea on. Of course this is another consequence of this navigation. Where the wind is heavy the sea is heavy, and here rises as rapidly as the wind. But there was nothing for it but to put up with its troubles and its unpleasant effects.

The low flat island of Fladda Huna, which we pass, swarms with puffin (*Fratercula Arctica*). They come there in May to breed, and depart again precisely on the 12th of August, and literally swarm on the rocks. The grazing on this island for cattle is said to be the richest in Skye. It was once the site of a Druidical temple, and the story is current that neither reptile nor vermin of any kind will live on its soil. It was all very well to admire the excellent reported

qualities of Fladda Huna and its migratory population, but it was at the expense of receiving the full effects of wind and sea, and of course everything that was disagreeable, dipping our wings in the wave like the seagull, yet considering ourselves fortunate to have a refuge from the storm under our lee for the night.

Having made our way across, we ran down southward by the Hebrides, Harris, North and South Uist, and Barra.

A small and not very secure anchorage will be found off Rodel, the South point of Harris, and to those who are fond of ancient ruins it is worth the risk of anchoring, to visit St. Clement's Church, founded by David the First in 1124. It is said that Rodel once contained twelve churches or votive chapels, similar to those at Barra. The present building is of considerable size, and remarkable for some curious but extraordinary and indelicate sculptures. It appears to be the only Catholic structure which remains entire throughout the Hebrides, and how it was spared at the Reformation is somewhat unaccountable. In fact, how such sculptures could be placed on a Christian building is no less so. But possibly the remote position of the building secured for it the immunity from destruction which it seems to have enjoyed.

Loch Maddy, about ten miles S.W. of Rodel, is a spacious anchorage, and with the chart compiled by the officers of the surveying vessels *Porcupine* and *Seagull* is perfectly safe and easy of access. Eleven vessels have been seen here by me at one time weather bound, some of 500 to 600 tons; and I have been assured by residents that some forty-five square-rigged vessels have been lying here at one time, at the expense of an anchor occasionally dragging, the holding ground being bad.

The term Maddy signifies dog. Why this should be called Loch Dog history does not say,—but it is no less true. There are also Maddy Mhor, Maddy Groumach, Maddy Beg,—big dog, growling dog, little dog,—all sorts of dogs; and these are all particular rocks, two of which are really picturesque, having almost perpendicular faces of 100 feet high, situated to the westward at the entrance of the loch.

But the Loch of Dogs very properly boasts an inn, with the date of 1765 carved in relief on stone over the door. But it is no less remarkable that, not only has the inn no special name, but also that people who have lived all their lives within a short distance of it, and daily visit it, express surprise when their attention is called to the date, wondering that they never saw it before!

If the inn be a mark of civilization, it is well supported by a jail, no less celebrated for its light than its dark cells, but all equally clean,—in fact, always clean, but always empty! They are even inviting, but still there are no prisoners. However, it is coolly remarked that they are always "expected!" There is even a high sheriff and a sheriff's house,—almost the only decent white-washed house to be seen for miles around,—cold without, warm and hospitable within. Here, on a Christmas day, and indeed various other days, and every evening, the residents about meet. But the stranger who accidentally finds

himself there is vastly puzzled to know where they all come from. The nearest houses are fifteen or twenty miles off; the road to them across a swampy boggy heath, salt sea mud, cascades, rivers and gutters innumerable, besides shifting sands, which can only be forded at low water.

The visitor may make up his mind that every one he meets would answer to the name of either MacLeod, Macdonald, Mackinnon, or MacLean,—perhaps he may see fifty who could muster but four or five names among them all; so, for convenience sake, they are distinguished by the names of their respective establishments or farms,—as Macdonald of Balranald, of Tormore, of Rodel. Sometimes they will drop the name entirely, and familiarly call themselves Balranald, Tormore, Rodel; and when more than two or three young ladies they are also designated Miss Anne or Susan Rodel, Valay, Spoonish, &c. At first this sounds strange in a stranger's ear; but, after all, it is a wholesome custom,—in fact, it is quite necessary,—and prevents much error and confusion.

Almost every indentation of coast line from this part to Barra Head (twelve in number) affords good and secure anchorage for moderately sized vessels. The next loch, South of Maddy, called Loch Eport, promises to afford a good refuge for shipping. Loch Skiport, in South Uist, is a perfect, secure, and land-locked basin; and there seems little doubt, when the others are examined, they will prove equally safe and secure harbours, and afford ample refuge from the storm.

In either of these lochs, should the voyager be compelled to seek shelter from a gale, he will find abundant means of amusement. He will be fortunate should he be provided with a large family umbrella, as well as strong hob-nailed boots,—both invaluable articles in this most rainy part of the world.

On Eriska, a small island in the sound between South Uist and Barra, he will find a stronghold tower of the MacNeils. But the island itself has figured in history, for the vessel which brought Prince Charles from France is said to have first anchored in this harbour, and that the Prince himself landed on Eriska.

Barra Chapel will be seen in ruins. Buildings seem to be thrown together anyhow, without regard to style, intention, or anything else, and yet they are surrounded by a ditch; and in the burying-ground are some ancient tombs and a variety of uninterred human bones.

Chisamel Castle is an imposing building of considerable extent, standing on a rock, through which rushes a spring of fresh water. It was occupied so recently as a century and a half ago by troops, and will accommodate upwards of 500 men. But it was my good fortune to visit it. An account of it which I have met with says:—"It consists of an irregular four-sided area within a high wall, containing many distinct buildings ranged along its sides, which appear to have been the barracks. One of the angles is filled by a high and strong square tower, which must have been the keep, having no entrance from the ground, and only accessible at one door about halfway up, the ascent to which is by a narrow outside staircase. In the opposite

angle is a small tower, which seems to have been intended as a prison, as the situation of the whole building rendered it impossible to have a dungeon underground. The walls are embattled on one side, and provided with a covered way and loop-holes, so as to render the defence in that quarter very complete. It is altogether a work of more art than most of the Highland castles, and constructed on better principles. The keep is also flanked by a small circular tower; but the protection of the rest has been trusted to the strength of the masonry. The entrance to this castle is near one of the angles, and near it are the remains of a round enclosure or basin, which was probably a place of security for boats. There is no date on the building, nor could we discover when it was erected, but it cannot be very ancient.

A ridiculous story is told concerning this castle, that when the great MacNeil had finished his dinner, the fact was announced from the summit of the castle by a man with a stentorian voice, who called out as loud as he could, "Know all men and all nations that the great MacNeil has now dined, and therefore all men and all nations can *now* do likewise." No doubt a very satisfactory piece of information to his neighbours.

It is about here that the tails of the cows are ornamented with a piece of *red* worsted, in order to prevent the milk from being charmed by witches! Every country has its share of sprites and goblins, and South Uist of course will form no exception to the rest. There is a valley in this island named Glenlyte, which is said to be haunted by spirits of giants and overgrown chiefs. The visitor will be informed, with all the gravity that can be collected in a face, that these spirits may be heard occasionally murmuring to themselves, and even making the air sometimes vibrate with their noises. Any one, it is said, who enters this valley without submitting to the will of these goblins or brownies, or whatever they may be, will immediately become insane! Notwithstanding such strange assertions, the narrator of these stories becomes quite indignant if any doubt is expressed of their truth; all attempts at persuading them of their absurdity are futile. It is said that these people believe in second sight, in pigmies, in brownies, and elf-shots and charms! They believe that a man's toe, which happens to have been cut at the new moon, bleeds a drop at every corresponding one; that the well at Kilbar (Barra) throws up the seeds of cockles; that a man who was consulted as a barometer could prognosticate the weather by sneezing. After such monstrosities of imagination, what would they not believe? Such, alas! are some of the people of South Uist in the year 1866.

A walk to the summit of Hecla (not the volcanic mount), but Ben Ival, or North Lee, will well repay the trouble. From these heights (about 1000 feet above the sea) an idea of the numerous isles and the innumerable lakes which form the Hebrides may be imagined, and the perfectly amphibious character of them arising from their position. The view which there presents itself to the eye will appear as if land and water were still waiting to be separated! That which should be

land is half water, and that which should be water is half land; the sea, in fact, appears all islands, and the land all lakes.

Should any one endeavour to supply himself with a sketch of the lakes or islands as they lay before him, as I have more than once attempted, he will find when he has arrived, perhaps at half a hundred of them, that they assume all shapes and forms,—broad and long, round and crooked, serpentine, small and great. They will soon appear to dance before his eyes, and his eyes and his head that contains them will begin to whirl before them, and soon, very soon, he will gladly give up his attempt in utter despair. Again: supposing him to have commenced even counting them at low water, he will find, when his eyes are turned to the left to be certain at what point he began his task, that the whole scene is changed. Islands have disappeared; lakes have run into each other; what appeared to have been lakes are now a part of the ocean; and if he stays so long as two hours, for the tide to flow, he will not be able to recognize the place at all!

(To be completed in our next.)

VOYAGE OF THE "PIONEER."—No. 2.

After crossing the equator, we made very slow progress to the southward. On some days, indeed, we found that we had lost ground, on account of currents and light head-winds. So, in a word, here we were in full experience of all the miseries of the "doldrums."

The most interesting and animating occupation on board of our little craft really was on the *scraping* days. A performance then took place which fortunately became popular with the crew, not only because they were extra-grog days, but also from a notion that whatever could be done to shorten the passage of our craft was really well worth looking after.

As we raised the Southern Cross night after night, and saw well-known stars sinking in the northern skies, the S.E. Trade freshened, and away we went with a port foretopmast studding-sail set, and began to talk about the Cape. Certainly nothing can exceed in beauty and in gorgeous colouring the *tropical sunsets* that we had in fine weather. In contemplating these magnificent sky-pictures, made up of every conceivable richness of tint and brightness of golden hues, such a sight of itself well repaid the voyager, and was worth while going to sea to witness.

The *sunrise* in these seas is also at times of great beauty, but it has not the soft colouring and abundant and glowing warmth of the sunset. Yet it is a glorious sight from the first streak of dawn until the instant when the sun appears rising from the sea, and I often took the first two hours of the morning watch for the sake of seeing a sight

which never lost its attraction. I don't know whether seamen generally share this feeling, but to me these scenes of such magical beauty were always as oases in a desert; and while I have stood in silent wonder before the pyramids of Egypt and within the thunder of Niagara, I have never been more impressed by the sight of any scene than by the gorgeous pictures painted by the sun on the tropical skies, where chamber after chamber recedes into the far distance, and formed by magnificent clouds of the most fantastic shapes, lighted up by the glorious sun as his farewell look before taking his rest. How truly have such scenes been described in the *Iliad*, where we read—

“ Now deep in ocean sunk the lamp of light,
And drew behind the cloudy veil of night.”

He who has witnessed such scenes of the tropics can never forget them, and well are they worth coming on purpose to see.

Just after passing out of the southern tropics, the usual monotony of sea life was disturbed by an absurd notion of the second engineer, that he was going to die. But as I knew he was not, and was quite easy about his health, I resolved to get him off the sick list as soon as possible. He sent for me to his cabin, and after telling me he was ill and felt that he should not recover, he made one or two requests in a solemn manner; then fell back in his berth with a low groan, as if his hour had come. Now Mr. Poby was not skulking, but he was something of a funk, and he was also a good deal of a screw; and it was this last phase of his character that I selected for acting on for his recovery, not doubting to see him soon again at the mess-table with his usual appetite of healthy voracity.

On leaving his cabin, I stopped just outside in the mess-room, and sent for the chief officer and the engineer, and told them that as Mr. Poby had assured me he could not recover, I intended making preparations for his *burial* at once, and ordered these two officers to take an inventory of his things and hand over his chest (which was a large old teak one) to the carpenter to be made into a coffin. While this was going on a noise was heard in the dying man's cabin, as if he was feeling for the key of his chest; and as I took this for a sign of amendment, I resolved to continue the treatment, and told Mr. Paddle, the engineer, who knew Mr. Poby's friends at home, to attend him in his last moments, in case he had any last message to send, but not to trouble him by asking for the key of his chest, as the carpenter could do without it; and that, although his things would *fetch very little* at the auction, his tobacco, which was the *best* on board and the envy of all hands, would fetch at least half what he boasted to have paid for it; and lastly, that it was to be hoped he would feel some comfort from the thought that, as no one on board but himself had smoked a pipe of this choice tobacco, all hands would soon have an opportunity of knowing what a good judge he was of honeydew, as it was to be distributed equally among the smokers on board.

After this I went on deck, and was soon followed by Mr. Paddle, who told me that on going into Mr. Poby's cabin all fear of death had

gone, and the only fear and trouble was about his chest and other effects on board, and he entreated him to come to me and ask that his chest might not be broken up for a coffin as he began to feel better. When Mr. Poby heard in reply that I treated his hopes of recovery as *delirium*, and saw the seamen about to hoist his chest up through the mess-room skylight, he could stand it no longer, but rushed out from his cabin and on deck to me in a twinkling. The cure was effected in a marvellous small space of time, and thus ended this comic tragedy; nor was Mr. Poby again on the sick list during the passage, and was even cautious afterwards of asking either for a pill or a dose of salts.

Since leaving the Scillies we had seen nothing; and wanting to know how the chronometer was going, we steered for Gough Island, which we sighted on the 31st of March, after being eighty-four days from St. Mary's. The chronometer was found to be seventy miles out; and I am led to remark that, until the *sea rate* of a watch has been found, it is not safe to trust the *shore rate* which is sent with the instrument from the chronometer maker's.* After rating off this island, it remained true to the rate to the end of the passage. I will only remark of Gough Island, that I think it would be found *very useful* for the purpose for which it was sighted on board the *Pioneer*; and that, although it lies in a higher latitude than is generally reached by vessels going round the Cape, this is no disadvantage, whether considered on the score of great circle sailing, or on account of stronger and steadier winds, which are looked for by keeping well to the southward.

This island has water on it, and is visible thirty miles off in clear weather, and looked as if it could be approached from any point with safety.† We saw two fine large cascades on its western side, and it occurred to me that, if islands in the sea were named according to their use, this ought to be called *Rate your Watch Island*; and I am led to notice this from a conviction that, if the rate of a good chronometer can be determined after a few weeks at sea, you may be pretty sure of your longitude, at least to an extent that no prudent man would be who had only the shore rate to work by. After passing Gough Island we kept on the same parallel of latitude, which is a more southerly route than is commonly taken by ships rounding the Cape of Good Hope, and was chosen on account of expecting steadier S.W. winds.

Our lee boards had proved a complete failure, as one after the other they broke away from the side when the drift of the vessel was great; and indeed so severe was the strain on them, that had larger bolts been used to secure them to the vessel, they would have

* The longitude of Funchal, in Madeira, was specially determined by Dr. Tiarks, by Admiralty order, with this view, and no doubt other points similarly determined would prove beneficial; for no one who knows anything of chronometers ever trusts to a maker's rate, but always manages to find out somehow what his chronometers have been about at sea.—ED

† It is, we believe, very well laid down in the charts. Raper places it in $40^{\circ} 19' S.$ and $9^{\circ} 44' W.$, that is, its North point. It is called by him 4,385 feet high, and of course must be a conspicuous object on the horizon.

torn holes in her sides, and it was found when too late that what would have answered better than the four lee boards would have been two *sliding keels*. Here we stripped the after-mast bare, to help the steerage when running in strong winds with a high sea, and got a spar and storm cable over the cabin skylight, and did all we could to prepare for heavy weather. Up to this time the vessel had made little water, and the general feeling on board was, that, unless we fell in with a hurricane, our craft would behave well. What the crew did not like was the noise of the water rushing against her thin bows, for it sounded too near, and some among them I expect were kept a good deal awake at night by this unpleasant sound.

While S.W. from the Cape I was struck with the remarkable *variations* in the *temperature* of the sea, which on one occasion was as much as 7° during the forenoon watch; and it appears possible that some useful purpose might be served if the practice were general of taking the sea temperature. Among the mere practical uses, apart from the scientific, would be that in some cases approach to land would be indicated, or to icebergs; sometimes it would indicate change of depth; and very frequently the passage of a warm or cold current, like a river in the sea, as is illustrated on so large a scale by the gulf stream.

While between the meridians of Gough Island and the Cape, we had a beautiful sight of a luminous sea. One night, after a dull cloudy day without wind, about 10h. p.m., we saw the whole southern horizon gradually lighted up until it reached the vessel like a sea of lambent fire, at which instant our sails were filled, and then we knew that the phosphorescent appearance, which soon spread over the whole sea, was caused by the wind rippling its surface. I will conclude this part of our passage by expressing my conviction that, sooner or later, this phenomenon of a luminous sea* will be traced to an *electrical* source.

W. C. P.

(To be continued.)

ARMOUR-PLATED SHIPS.

A Lecture by Mr. E. J. Reed, the Chief Constructor of the Navy.

The views of the Chief Constructor of the British Navy on armour-plated ships, as they are and as they should be, have been expressed by him in a lecture, at the Plymouth Mechanics' Institute, on the 14th of December, and will be no doubt welcomed by our readers. We therefore preserve here the following abstract of it from the *Hampshire Telegraph*:—

* May it not rather arise from the fluid being agitated, and so disturbing the numerous animalculæ from which the light proceeds, thus inciting them to its display?—Ed.

After some prefatory remarks, Mr. Reed observed that our first iron-clad, the *Warrior*, was a magnificent ship, but was of enormous size, very unwieldy under steam, and cost £357,000. The *Minotaur* improved upon the *Warrior's* design only in the superficial extent of her armour, and, still more unwieldy, cost £80,000 more. If the same system of improvement had been pursued, we should in all probability have had a ship of 10,000 tons, costing about three-fourths of a million sterling. It was by way of arresting this alarming tendency to magnitude and cost that he presumed to interpose certain suggestions; and although the circumstance had brought him personally no advantage, he had the satisfaction of knowing that the system of resorting to enormous length had been completely overthrown by the *Bellerophon*, *Pallas*, and *Lord Clyde*. This pernicious system was carried out to the greatest extent in a vessel which had given the most signal instance of unhandiness and failure that the world has ever seen,—viz., the Italian flag-ship *Affondatore*, which was 40 feet only in breadth, and nearly seven and a half times that in length, being of nearly the same length as the *Bellerophon*, although 16 feet narrower.

By Admiral Spencer Robinson, the controller of the navy, the suggestions for reversing the system were accepted and carried out with boldness and judgment, and the large iron-clad men-of-war since laid down have been marked by continual increases in the thickness of armour and the power of the guns, without having yet returned to the tonnage of the *Warrior*. Thus have been saved hundreds of thousands of pounds, the *Bellerophon* alone having cost £100,000 less than the *Achilles* and *Minotaur*; and both the *Bellerophon* and *Pallas* have conclusively shown that enormous length is *not* essential to high speed.

It is not in dimensions and proportions only that improvements have been made. The handiness of our recent ships under steam—a quality to which supreme value is now very properly attached—surpasses all anticipation. The *Bellerophon*, the total weight of which exceeds 7000 tons, when steaming at the rate of nearly a quarter of a mile in a minute, had turned completely round in 1 minute 50 seconds, and steamed off in the very opposite direction. The handiness of the *Pallas* was scarcely less surprising, equalling that of the smallest vessels that carried no armour at all. Great improvements have also been made in the structure of our recent iron ships, especially as regards the lightness and simplicity with which the unarmoured portions of the hull, more particularly those portions which are below water, have been built. The security given to the hulls of these iron-built ships has also been much increased; but as regards their taking the ground, and the attacks of rams and torpedoes, all these are contingencies which must not be disregarded in these times, and the use of rams renders it absolutely necessary that some further provision than the ordinary bulkheads should be made for avoiding destruction by the penetration of the bottom. With this object every part of the bottom is formed double and cellular, and the whole is strengthened by continuous iron-plate girders well calculated to resist blows.

Mr. Reed then spoke of the cost of armour-plated ships, concerning which the public was much in error; for those who speak and write of the aggregate cost of our entire iron-clad fleet almost invariably fall into extreme exaggeration. A parliamentary paper published in August last gives the expenditure incurred, as nearly as it can be ascertained, on every iron-clad ship we possess, which has hitherto amounted to but seven and a quarter millions sterling. We often hear of seventy millions having been expended upon them, but one-tenth of that amount is what they have actually cost. This does not include the ships recently commenced,—viz., the *Hercules*, *Monarch*, and *Penelope*; but it does include the £230,000 which were spent on the four floating batteries built during the Russian war. The introduction of armour-plated ships has given the nations a fresh start in the race for naval power and ascendancy, and other powers have entered upon this race: they have no world-wide navy and naval establishments to maintain, at an annual outlay of many millions, and are consequently free to spend their money mainly upon iron-clad ships. The impression appeared to be abroad that many millions are lavished annually upon iron-clad ships without any adequate result; and people tauntingly inquire what has been done with the money. But instead of spending millions annually in this way, it is quite on other objects that nine-tenths of the naval votes are laid out. Loss of public confidence in our ships has resulted from unfair and perpetual depreciation of them. He did not mention this because he happened himself to have been the object of much ignorant and persistent misrepresentation, for that was of small importance even to himself. He had never for a moment swerved from his work on that account. On public grounds the loose and unjust depreciation of our ships was to be deplored. "Wherever one goes about the country," said Mr. Reed, "he meets with the opinion, or at least the apprehension, that, individually and collectively, our iron-clad ships are unsatisfactory, and that the public money has been most unwisely spent; and the necessary consequence is a general want of confidence in our naval administrators, and a reluctance to find money for the construction of future ships. This is the result which unfair and illiberal complaints and criticisms have brought about; and I venture to say it is one which will last, and will embarrass, if it does not defeat, every effort to increase our strength made by the administration, whichever party may be in power, until it has been completely reversed. It will be well if no naval war arise before the confidence is restored."

Mr. Reed proceeded to argue that it was not true that English ships are inferior, and that the public money has been wasted; and competent and responsible officers of foreign navies, in nine cases out of ten, would not endorse that opinion. The *Warrior*, in spite of imperfections, was a magnificent and valuable ship, as well adapted as any ship afloat for performing ocean service in the interests of our commerce in time of war. The Americans are building a number of very fast wooden corvettes without armour, for performing this service; and if they are successful as regards the enormous speed aimed

at in them, they would surpass the *Warrior* in this respect. But hitherto he had not heard of any of them doing this, and their fragile hulls were wholly unequal to sustain even for a moment a contest with the armour-cased *Warrior* armed with shell guns. Or let them take the *Achilles*, a much later ship, and inquire what her performance has been in the Channel squadron, and tell him if their money had been spent in vain on her. He ventured to say there was not a ship afloat in any nation that could compare with this splendid vessel, as regards some of the most important qualities of a man-of-war. She, too, had of course her drawbacks, the gravest of which was her extreme length and consequent unhandiness under steam; and the *Bellerophon*, for this reason, and on account of her thicker armour and heavier guns, was preferable to her as an engine of war, although costing £100,000 less. These ships were not failures, nor anything resembling failures; and very recently a sum far exceeding the cost of the *Bellerophon*, and nearly equal that of the *Achilles*, was offered for a ship much inferior to both by a foreign government engaged in war.

Nor were the smaller ships that they had built valueless; far from it. The very first vessel he had the honour to design for her Majesty's Navy, a converted wooden hull cased with armour, was the first British vessel of war that passed into the Mediterranean armed with the new and powerful 6½-ton guns, and she has been doing excellent service there ever since, replacing a much larger and costlier wooden ship, and winning for herself a reputation of the highest kind. Nor was the *Research* a failure either; on the contrary, she was well fitted, not indeed for steaming in a squadron with ships five times her size, for she was not intended for that; but for proceeding to any part of the globe, and for carrying our flag upon an armour-clad hull into shallow waters. Nor was the *Pallas* a failure, notwithstanding the perpetual obloquy to which she was subjected throughout the entire period of her construction. He really blushed for the people, some in high positions, who were so unaccountably industrious in detracting, not from the merits, for that they could not do, but from the promise of this comparatively small vessel up to the very moment of her trials. People who considered themselves authorities predicted that eleven knots was the highest speed this very short ship would ever attain when loaded, and that under canvas she would stand still, or nearly so. But he had the satisfaction of seeing her steam, when deeply laden, at eleven knots with only half her power, and exceed thirteen knots at full speed, thus surpassing the very fastest wooden frigates in the navy, notwithstanding that she is heavily burdened with armour, while they have none, and that she is 75 feet shorter than they; and as regards her sailing powers she has proved even still more successful.

Mr. Reed proceeded to indicate some of the leading principles upon which it is necessary to proceed, speaking, of course, solely and absolutely upon his own responsibility. He should do this the more readily because the present First Lord of the Admiralty, Sir John Pakington, who first introduced sea-going iron-clads into our navy, had ever since

most wisely favoured the freest and fullest discussion of this momentous subject, in his capacity as President of the Institution of Naval Architects, and in other ways. He had laid it down as a fundamental principle that England must always be building a ship or ships superior in offensive or defensive powers to any produced or in course of production by other countries. He did not say she would aim at possessing a large number of such ships. With a moderate expenditure large numbers implied individual weakness in the ships; whereas it was the peculiar characteristic of the period that one powerful vessel was worth more than many weak ones. And in precisely the same way it was perfectly easy to produce a ship with iron armour of such thickness, and guns of such power, that the iron-clads of France should no more dare to encounter her than wooden ships would dare to encounter the most formidable iron-clads yet produced.

He thought England should build some such ships upon the turret principle, neither purely on the American plan, nor purely on Captain Coles's, but embracing the best points of both, and they need not greatly exceed the size and cost of some of the largest existing iron-clads in producing such a vessel, to carry the armour 15 or 16 inches thick and 20-ton guns, and to steam at fifteen knots. They might also be made more secure against rams than any existing vessel. He had, in fact, satisfied himself that such a ship could be designed and built, and one or two such ships would contribute more to the maintenance of national power and authority upon the ocean than many iron-clads of the ordinary type costing in the aggregate much more than they. Already in the *Bellerophon* we had a ship in which a British captain would not hesitate to engage several such vessels as *La Gloire*, for the armour, the guns, and the manœuvring power under steam of the British ship would be much superior to theirs. And in the *Hercules* England was building a far more formidable ship than the *Bellerophon*, her entire water-line being absolutely impervious to shot. But it would be well to set about the construction of a ship much more powerful than either the *Achilles* or *Hercules*. This was, he believed, the means by which England would most effectually hold her own, not only in Europe, but with respect to that bold, energetic nation which had lately sent the *Miantonomoh* across the Atlantic. It was only by a boldness and energy equal to theirs that England could compete upon the sea with such a people.

There was a strong disposition lately to encourage an enormous expenditure upon the conversion of the existing wooden line-of-battle ships, as a means of multiplying the numbers of the iron-clad fleet. It was considered that they might advantageously convert some twenty or thirty wooden steam line-of-battle ships, by cutting them down nearly to the water's edge, arming them with two or three turrets and heavy guns, and rigging and equipping them as sea-going ships. The proposal, as it came to his notice, was to make the decks of these ships about $3\frac{1}{2}$ feet above water, and fire guns from turrets over this deck, the gun-ports being between 4 and 5 feet above the water. A short piece of the bow and stern of the ship was to be left standing at the

ends, and the two were to be connected by a bridge running over the turrets. He had carefully considered this proposal, and saw many objections to it. He was at an utter loss to understand of what use a large sea-going ship was to be with gun-ports less than 5 feet above the water—and, as a matter of fact, they would be less than 4 feet. It was impossible that guns in a turret so close to the water's surface could be fought even in moderate weather. The guns and interior of the turret would be deluged by the sea every time the ports were opened; and even if it were possible to work the guns, it would be impossible to aim at the enemy, owing to the intervention of the waves. Again: these ships carry at present from 800 to 1000 men; and as they were still to be rigged with large masts and spars, and a great spread of canvas, they would require at the very least half the number to work them,—say 450.

Now, it was impossible to provide satisfactory living and sleeping accommodation for so large a number of officers and men and stowage for all the coal and sea stores which would be essential for sea-going purposes in the small space left when the ship was cut down as proposed. If the Government were to convert the ships and send them to sea with the necessary number of men on board, discomfort and disease would, he feared, be very great. These ships were all more or less decaying even now; and by the time their conversion was completed, they would be in a worse condition, of course. They were not, as a rule, fast ships even at present; but the proposal involved the sinking of them much deeper in the water, and thus reducing the speed. He had made a rough estimate of the cost of converting ships upon this plan, and believed it would amount to £140,000 per ship. But suppose that £120,000 would cover the cost, and this was less than the cost of the *Royal Sovereign's* conversion, although she had armour that was not now shell proof, and had not been fitted with sea-going appliances; and suppose that twenty-five such ships were converted, then they would have to expend three millions of money upon the transformation of these old line-of-battle ships into comparatively slow and inferior iron-clads, the whole of which together would be unfit, he feared, to cope with even one such ship as might be built new for one-sixth of the cost,—viz., a ship plated with 15 to 16 inches of armour, carrying 22-ton guns, and steaming at a speed of fifteen knots. These line-of-battle ships had weak and exposed stern-posts and rudders, and were incapable of being used securely as rams. The royal dockyards, with the multiplied other works which they have to perform, could not convert them in many years, and the workmen of the large private firms possessing docks were accustomed now to iron work only, and would build new iron ships nearly or quite as quickly as they would convert these.

There was another consideration which should not be lost sight of. It was usually represented that the engines of these ships were for the most part good and valuable, and many of them were so,—some six or eight of them had never been used at all. But there were many of them requiring repair; and they would perhaps be surprised to learn

that the engines of twenty-two of these ships, into the condition of which he recently inquired, required repairs amounting to an estimated sum of £128,000. These considerations made him pause before he would concur in the expenditure of £3,000,000 upon these ships, especially as they would then be out of all comparison inferior to ships such as those with which foreign governments were providing themselves. Apart altogether from these specific objections, there was the general objection to the conversion of wooden ships, especially on a large scale,—namely, the absolute deprivation this inflicted on us of the benefits of our own progress.

The great art in building iron-clad ships must obviously consist in getting the greatest efficiency for the sum expended; and this efficiency must be measured by the amount of armour and the armament which are required in a given hull at a given speed. In the *Warrior*, the total weight of all kinds crowded upon the hull amounted to 4,350 tons, and the weight of the hull compelled to carry this was 4,660 tons, or 310 tons in excess of the weight carried. In the *Bellerophon*, owing to the structural changes introduced into her, they had succeeded in carrying weight amounting to 3,860 tons, with a hull weighing only 3,400 tons; so that the hull of the *Bellerophon*, instead of carrying 310 tons less than its own weight, carried 460 tons more. But they had not stopped short with the *Bellerophon's* improvement. In the *Hercules* they were advancing much further, and on a hull weighing only 3,610 tons, they were proposing to carry a weight of 4,920 tons, or an excess of no less than 1,310 tons; and in a ship of a still later design, they were actually to carry on a hull of 3,730 tons an enormous aggregate of 5,900 tons of weight. Without the improvements which had led to these changes the *Hercules* must, apart from the consideration of length, have been 2,500 tons larger than she is, and have cost £140,000 more than she actually would cost. He did not wish to dogmatize upon any of these points, but he felt persuaded that they would agree with him in feeling that it would be exceedingly wrong to slide into an unwise expenditure upon these fast-decaying wooden ships, especially as there was great reason to believe that a large outlay upon their conversion would practically put a stop for two or three years to come to all serious progress in the production of iron-clad ships of the most approved and powerful kind.

The third principle he should be very glad to see pursued was that of relying more on steam power, and less upon sails and men, in the largest class ships. But if it were unsafe to rely upon one set of machinery, they might have two screws with duplicate engines, and then they would be quite as safe, and even safer, than at present with the single screw and canvas. This change would be attended with many advantages. They could afford to keep the ships much lower in the water, thus presenting a smaller target to the enemy, and they would be enabled to concentrate the armour with greater thickness on the low side which would be presented, and greater speed, no doubt, would also be obtained. The number of men required to man the unrigged ships would be reduced 50 per cent. Again: the lower the

hull was the steadier would be the gun-platform, and this steadiness of the gun-platform became of more and more importance as the weight and value of each discharge of the gun increased; and he could assure them that the cost of producing a discharge of a single shot or shell from a 20-ton gun firing 75 lbs. of powder was a great sum, notwithstanding the great and striking improvement which Major Palliser had so cleverly and zealously carried out. Another advantage of doing away with the rig and sails of these ponderous engines of war was that without masts and sails they could be made to fight not only on the sea, but for attacking land batteries. He could not at present say that any sea-going ship was thoroughly well adapted for this work, owing to the peculiar condition involved in rigging and sailing ships. Such vessels as he was now looking at would, however, be as safe from the depressed fire of an elevated battery as from any other fire, or very nearly so, as the outer deck would be covered with stout armour, and the funnels would be suitably protected.

After speaking of the embarrassments of the combination of steaming and sailing in vessels of war, he said nothing of the kind would exist if vessels were under steam only. Of course one thing was indispensable to the attainment of the abandonment of masts and sails in ships,—namely, the large increase of our supply of coals. But this presented no great difficulty, as all the weight now required in masts and spars, anchors and screws, would be put into the form of coal, and whatever more was required must be provided for in the original design. It was now an established fact beyond all doubt that the higher, within proper limits, the weight of a ship rested, the steadier she became. That was a principle which was pretty well understood in Plymouth; for the best work he had ever read on the stowage of ships was written by Mr. R. W. Stevens, of that town. He saw no difficulty whatever in providing a large ship, designed as he had proposed, with coal enough to carry her round the globe at a moderate speed, or across the Atlantic at a high speed. Finally, he would lay it down as a rule that retrenchment in naval supplies should fall last, and not first, upon the production of such ships as were essential to the maintenance of our position as the greatest naval power in Europe. He knew well the pressure that was put upon the Government by mercantile and diplomatic powers to induce them to maintain a large number of war vessels, crammed with multitudes of seamen, in every part of the globe, but it would be true statesmanship and true patriotism, in his opinion, to see that the great root and trunk of our naval eminence were not weakened and attenuated in order that the branches might flourish in brief luxuriance; for any advantage which might be derivable from the possession of a large number of weak war vessels could add but little essential vitality if the tree itself, as the first naval power in Europe, was not maintained by the production of more powerful ships than other powers possessed.

HOMEWARD BOUND.

PART I.

(Continued from vol. xxxv., page 645.)

And yet, forecasts of weather *at command*,
 Have long been made, 'tis said, in our land ;
 Divided into districts, ill-defined,
 To suit the fancies of the wayward wind :—
 Which cares not, that, its limits be confined,
 But rather wanders just where 'tis inclined !
 'Tis true, the wind in partial veins will blow,
 Yet who can prove that it does always so ?
 That, the same track, it follows here, or there,
 Or the same limits keeps to everywhere ?

That certain weather follows certain winds,
 He may see plainly who thus inclines.
 Arago has declared, "~~That~~ man is bold,
 " Who of to-morrow's weather has foretold !"
 He could perceive, what some can't understand,
 Difficulties that lie on every hand :
 And who is he, with certainty can know,
 At any time, the wind that is to blow ?
 Yet to more than this, see man aspire,
 A weather prophet he, at his own desire !

Go then, presumptuous man, the winds enchain ;
 That forecasts of the weather you may gain :
 Revel in troubles, fiction be your friend,
 And in your forecasts, blunder without end !
 Enough of weather ! let the muse now turn
 To other matters, from which one may learn
 A lesson in the emigration way :

The minstrel paused :—then thus resumed his lay.

It chanced as running homeward by the Bay,
 The weather bad and thick, a dismal day,
 The sea tumultuous, the wind no less severe,
 As full oft it had been in this new year ;
 When now and then, as lifted by the wave,
 A boat was seen struggling some lives to save :
 " She's making for us :—signals, too, I see ;
 " Steady ; she's just now under our lee,
 " Right in our track ; luff, luff," the captain cried,
 " Be smart, my lads, she'll soon be by our side ;

"A rope, a rope, all fast," 'twas quickly caught,
 And nineteen souls in that frail thing are brought;
 Saved from the *London*; steered by gallant "King,"
 Let not the Muse that name forget to sing.
 Yet ere the *Marianople* they had gain'd,
 Trials severe and suffering they sustain'd:
 Vessels had pass'd them since they'd left their ship,
 Chances which their ill fortune had let slip:
 Nor did they reach this snug Italian barque
 Without catastrophe; yet it fail'd to mark
 Them for the deep: a huge o'erpow'ring wave
 Nigh swamp'd their boat; their only chance to save
 By bailing then; when chill'd and numb'd with cold,
 Energies exhausted, scarce strength to hold,
 Cavasa's barque was gain'd! Oh happy hour,
 The gale might blow, the skies portentous lour,
 A warm heart beat within her captain's breast,
 Those castaways found comfort, warmth, and rest:
 Yes, more than these, for creature comforts too,
 Warm tea, fresh garments, what he could he'd do,
 Hot soup, aye, "his last turkey they should share,"
 Albion's sons they were, and worthy all his care:
 Right well did he enact the noble part,
 The true Samaritan was he at heart:
 Let Englishmen remember this man's name,
 "Cavasa," worthy handing down to fame.
 His rescued band at Falmouth set on shore,
 His work was done, Cavasa's task was o'er.

Such was the story of the *London's* boat:—
 Another tale remains, the Muse to quote,
 A tale of sorrow, suffering, and of woe,
 That falls to lot of mortals few to know.
 Brief was their time in that Italian barque,
 One which to them of safety proved the ark;
 Those few, that handful of poor mortals sav'd,
 From souls (two hundred) which the sea had brav'd
 In an unworthy ship, the *London* named,
 For passage built;—the service which she claim'd:
 But let these few their tale of sorrow state,
 Their days of suffering, and those scenes relate,
 Which they beheld; in which they took their part,
 Scenes which come home, alas, to every heart.
 And should the Muse her painful task bewail,
 In mournful numbers that warm hearts assail;
 In pity let them stay the starting tear,
 The lost are gone, hereafter to appear!
 The Muse is saddened by the tale she heard,
 The *London's* fate was told with burning word!

In serious strain her flowing numbers rang,
And thus the *London's* dreadful loss she sang.

When England, bent upon commercial gain,
Her ships sent forth upon the busy main,
Her merchants found the secret springs of trade
Lay in dispatch, and that when this was made,
The quick return of capital employ'd,
Prevented losses which they would avoid.
Profits returned were such as they desired;
Their capital then was as if inspir'd.
Still merchant craft of England could not sail,
Unless indeed the wind would blow a gale,
And they before it went: voyages long
Were always so, and seeing this was wrong,
The short and gouty, humpy dumpy ships
Unfit for passages or rapid trips,
Soon long and slim, like slipping eels became,
Ships with long bodies, narrow, iron frame:
'Twas said that length gives speed, a doctrine too,
Which too far carried will a ship undo.

What is there not that man will undertake?
Who's bent on making money for its sake!
Let us have ships so long, and just so wide,
That for their breadth their length by eight divide;
(By ten, indeed, it has been certified;)
He said:—'twas done, the marvel ships are built,
One *London* named, was ready for a tilt
Of strength with Neptune on his ancient ground.
Ah! sad resolve, a *death ship* she was found!

What unsound doctrine this of breadth to teach,
A tenth part of the length that breadth to reach!
Such lanky ships are coffins for their crews,
And well pronounced too dangerous to use.
'Tis clear that shipwrights differ on this point:
Another, too, on which they're out of joint;—
The deep-load line: These are subjects which divide
Opinion: These the public must decide.
Good judges too! Experience, dearly bought,
Is better, they say, than experience taught:
The public, easy souls, with wide-mouth'd purse,
Accept most things for better or for worse.
That fond delusion, the insurance law,
(As neat a claptrap as the world e'er saw,
Looks after everything, perhaps, if true,
In this sad matter a good turn will do,
And consolation bring to one or two.

But let us leave these *minor* things and turn
 To the *London's* voyage, and we shall learn
 How things on board passenger ships are done,
 Clippers they're called, because they fast can run !
 Yet 'tis a subject most severe and keen,—
 One to be dealt with so as not to screen
 Blame where it lies ; let this an object be,—
 The cause to show of all her misery,
 Of scenes and trials that were there endured,
 And trust that from her loss they may be cured.

The London.

An iron clipper ship from Gravesend sail'd,
 In dark December, and for Sydney hail'd.
 The skies portended ill ; St. Helen's road
 She sought for shelter : Hence one might forbode
 With foul and stormy winds, no pleasant trip
 Awaited this, low, wet, uneasy ship.
 Still on she went, steaming against the gale,
 Rolling down Channel, yet could show no sail :
 Plymouth received her, where the pilot boat
 Capsiz'd ; the pilot drown'd,—bad points to note.
 Yet worse remain'd : all passengers embark'd :
 (A Friday's sail, too, oft it is remark'd
 Disastrous ends, as sailors still believe,
 In proof of which this case they will receive.)

Thus far the *London* had no favour gain'd.
 In public estimation, she remained
 An uneasy ship : more than sickness, tried
 The faith of those embark'd. The ship belied
 Those first rate voyages that she had made ;
 And freely were opinions now essay'd
 Against her reaching an Australian shore !
 Landsmen could even see, and that before
 From Plymouth she had sail'd, how far too deep
 She floated, to enable her to keep
 That easy buoyancy, a ship displays
 When light her load, she soon her helm obeys.
 Deep yet she was, and added to her stock
 Of coal, were fifty tons, deck space to block :
 These on her upper deck, in sacks were stow'd,
 Increasing still her far too heavy load.

Such themes of conversation soon became
 Common on board. No flattering name
 She now had gain'd : however, let that be ;
 Still, two passengers would not go to sea

In such a craft; and both at Plymouth left.
 Fares might be lost,—were they of sense bereft?
 How many more had gladly done the same,
 But that they'd earn a dastard coward's name!
 Alas what folly! what delusion too!
 False valour that, which braves what fools would do!
 Who goes to sea in ill condition'd ship,
 Fool-hardy is, and well deserves to slip
 From life's domain :

the days of passage count?
 Already are they numbered in amount!
 That indeed is reckoning without the host,
 Where's the *London* now? What of all her boast?
 The ship at Gravesend that was said by some
 Look'd like the coffin, which she has become!
 There is a rule, to follow which is far
 Above all gold;—if under evil star,
 When you doubt, *abstain*, wisely if you can,
 Honour is not lost in fool-hardy plan!

On Friday's night the *London* put to sea,
 The wind was foul, though light as it could be:
 All powerful steam her voyage thus began,
 With which on Saturday she onward ran.
 But Sunday check'd her with a heavy sea,
 Ill omen too of what she yet might see;
 For Monday brought her a tempestuous gale,
 Which stopp'd her engines, put her under sail;
 Her captain, Martin, deeming it but wise
 To make the ship snug, wherein safety lies.
 Alas what futile effort this has prov'd,
 As time wore on, and as they onward mov'd.

"Snug ship!" indeed the *London* never knew
 The worth of words, which seamen often do,
 As comfort gain'd. Even with weather bad,
 Cold was the *London's* comfort, wet, and sad!
 The scuppers chok'd with coal, would not allow
 From deck th' escape of water any how:
 These outlets small were easily choked up,
 With that loose dusty stuff: "all hands" might sup
 To their knees in water, for run away
 It never could, and so throughout the day
 And night, green seas she would be taking in,
 Amidst the deaf'ning everlasting din
 A steam-winch made,—a thing that's meant to do,
 Of course, the manual labour of the crew.
 And thus was water rushing like a tide,
 As the foul *London* reel'd from side to side:

A common trick this was of her's, well known,
 To those who in the ship before had gone :
 Sad stories, too, were told of fittings there,
 Fittings without a careful owner's care !
 Essential for the comfort of the crew,
 But comfort to the *London* would be new !

Yet tubs in state-rooms to save clothes from spoil,
 Are something new in passenger-ships toil !
 The hatchway lids leaked in a stream so clear,
 As to call forth the ladies' screams from fear
 At seeing so much water come below,
 Their nerves were unprepar'd to find it so.
 But one accusom'd to the *London's* tricks,
 Said quietly,—“ Her wares she likes to mix ;
 “ Shut down the hatch, and 'twill be all the same :
 “ I would not say the owners are to blame ;
 “ But some one is, when such things do not fit ;”
 And thus the *London* “ made a night of it.”

Enough there was, indeed, t' excite alarm ;
 The sources of discomfort, if not harm,—
 Were great :—water came in with every roll,
 Enough t' astonish any living soul,
 Such rolls the *London* took, 'twas often thought
 Her last was come,—that she had really sought
 Some place whereon to lay her wearied bones,
 So long herself regaining 'midst the moans
 Of frighten'd passengers ; when with a jerk
 Up she would jump, and then resume her work.

And now ;—was there a lull, the ship upright,
 A hatch was rais'd for air, no less than light !
 For darkness visible prevail'd below,
 Mingl'd with steam ;—a suffocating foe :
 Some were on tables seated, ill at ease,
 Others mid trunks, and buckets, which the seas
 Sent reeling round in stark confusion's way,
 While females clinging to their friends would say,
 “ Don't leave us now, oh, do by side us stay !”
 Who could describe the horrors of that night ?
 Who could depict the miserable plight
 Of all embark'd in that ill fated ship ?
 Cramm'd, as she was, for this ill omen'd trip ;
 What pencil paint, what pen could e'er describe
 The horrors of the *London's* ill us'd tribe ?

This first gale lull'd at noon, when steam again
 Its work pursues upon the troubled main.

Alas, how fleeting was this wintry gleam
 Of Hope! 'twas like a summer's transient beam,
 Soon by dark, murky, gathering clouds dispell'd :
 It seem'd the violence of the gale was quell'd.
 Delusive hope, how soon that pass'd away,
 Stern winter still maintain'd his rigid sway!
 Still rose the gale with the approach of night,
 And fiercer still became with morning's light.

That morning dawn'd mid turmoil, storm, and gloom,
 Fit heralds of a ship's approaching doom.
 Ah why does cruel fate with flatt'ry deal
 From one hand? while the other can conceal
 The bitter end of all our human woes.
 So like the thorn couceal'd beneath the rose :
 This to our pleasure ministers awhile,
 That puts an end to the delusive smile!

Scarce had the day emerg'd from sable night,
 Ere dire misfortune claims the cruel right
 The *London* to molest. The wind as yet
 Had but delay'd her course, but still would fret
 With sad discomfort her large living freight,—
 Her movements being violent and great.
 But now disaster comes: her foremast lost
 All its companions; upper masts were toss'd
 Broken and useless, dangling to and fro
 They sway'd, and dangerous to those below :
 Soon afterwards, as if their fate to share,
 Another mast,—main royal (she could spare)
 Was lost: still though important losses these,
 With jib boom also, yet as nothing were,
 Compared with others which awaited her.
 The day's disasters had not ended yet;—
 Her port side quarter life-boat was beset
 By a huge monster sea, and torn away;—
 A sea now higher than it was all day.
 Thus Tuesday pass'd, the ninth day of the year,
 And many in that ship began to fear,
 Their troubles manifold would not end here.

'Twas no unjust or wrong conclusion this,—
 For inexperience which knew nought amiss
 Of ships at sea, in wintry gales with all
 The dire confusion likely to befall
 Sea-sickness, with its enervating ills;
 Such serious accident the mind instills
 With fear,—and dread, that something even worse
 Might yet o'ertake them, after such reverse :

To these foreboding fears the Muse must add
 The sudden motion of the ship as bad,
 And worse became, with vitiated air,
 Which closely crowded narrow cabins share
 In semi-darkness! Evils such as these,
 With gale increasing and still higher seas
 Are ill adapted common minds to please :
 Still on the principle—"What can't be cur'd
 In every condition must be endur'd ;"
 Th' unhappy passengers had steel'd their mind,
 And to their ill condition were resign'd.

One there was yet on board, who all this knew
 Of passengers' discomforts, and felt it too ;
 Still graver matters occupied his mind,
 Than those which now mere suff'ring combined :
 The perils of the sea to him were known,
 Oft had he fac'd them, and familiar grown
 With scenes of danger, only to subdue
 Each which it was his fortune to go through.
 The *London* twice this stormy sea had cross'd,
 Was she on this third voyage to be lost ?
 Forbid the thought ! Had not she also made
 By far the shortest voyage of the trade ?
 And one in days that number'd fifty-nine,
 Why then should she her noble place resign ?
 Such might well be the reasoning of her chief,
 Who now with aid of steam would seek relief,
 And get beyond the storm in southern part :
 Vain hope ! such might be nearest to his heart ;
 He had to meet reality's stern part.

There was a certain notion prevalent on board,
 One at least, that certainly was untoward ;—
 As to the ship's strength and remaining pow'r
 Of endurance in this her trying hour.
 The sea, 'tis said, was running mountains high,
 A spicy phrase which perils magnify,—
 Yet sailing ships in general then lay by ;
 Or, as our ancestors said, "Lay a try,"
 And let the gale blow over ;—no harm done,
 And then resume a voyage ill begun :
 The *London* used her steam, and with her screw
 Would head the sea instead of lying to :—
 A process this by which no doubt she lost
 That topmast, and did mischief to her cost.

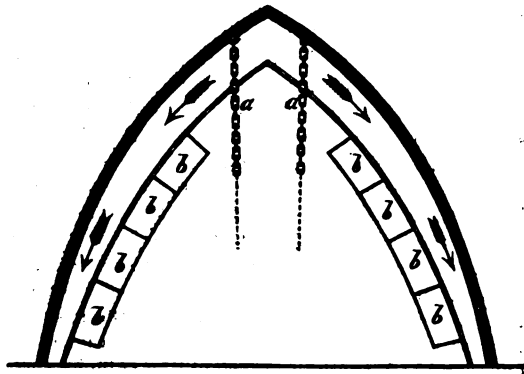
(To be continued.)

ACCOMMODATION OF MERCHANT SEAMEN ON SHIPBOARD.

An extract from the Mercantile Shipping Act, relative to the accommodation of merchant seamen on board ship, has within the last few days been affixed to the doors of the various shipping offices throughout the United Kingdom. Seamen eagerly peruse it, and then exclaim in their disappointment, "Oh! it is the old thing!" Now, there is a great deal more implied in these few words than they would seem to convey, to the minds of those men especially who are cognizant of the dens in which too many of our sailors pass their best days. They are, unfortunately, convinced by them that no change for the better can be looked for at present! If such laws were enforced as the extract contains, there is scarcely a coasting vessel in the United Kingdom that would escape fine, and probably a large number of those also engaged in foreign trades might be placed in the same category. Such a course of proceeding could not be carried out in this country without creating unmeasured discontent. What is now required is a proper supervision by the Board of Trade over *crew* as well as *passenger accommodation*; and, at the annual survey, a note of the condition of the former should be inserted in the certificate given.

With the present fittings of many top-gallant forecastles, it is impossible, when the cables are bent, to keep the deck reasonably dry. Not long since I heard *the master of a merchant ship* recounting as a *good joke*, that, in working a ship down the English Channel, he had frequently seen his sailors' chests washed out of the fore-castle into the lee waist! This **UNNECESSARY HARDSHIP** might, in all ships built hereafter, be easily guarded against by the Board of Trade merely insisting on the windlass being placed on the top-gallant fore-castle, as it is in spar-decked ships, or by running a water-tight ledge to a sufficient height round the bows about a foot from the side (*see sketch*), and

Our artist, who is no sailor, has omitted all appearance of hawse-holes or pipes through which the cables would pass in the bulkhead, against which the banks are fixed. In the drawing these last should have been shown at *a, a*, the bunks on each side being represented by *b, b, &c.*



about two or more from the angle of the bows, so as to form a channel

for the escape of water rushing in through the hawse-holes when open and plugs not in. The pipes (*a, a*, in the sketch) need not be much larger than the cables, and could easily be rendered perfectly watertight with the aid of a piece of bagging, or an iron slide. An arrangement like this, showing the bunks (*b, b*, &c.) clear of the side, would in all weathers ensure the seaman a *dry bed*.

A top-gallant forecastle, in temperate or tropical climates, is the most fitting lodging for the seamen. The ventilation may be made perfect. It is easily kept clean, and the men are then always "ready for a call."

The lower forecastle is in many ships an abomination. Water gets below in bad weather when the companion way is opened to relieve the watch; and in the tropics it is uninhabitable. This is a fruitful source of disease; for the men sleep on deck with heavy dews falling on their ill-protected persons, and inhale the poisoned air of the swamps. Who can be surprised at sickness and mortality getting among them?

It is much to be regretted that our seamen have recently injured their prospects by listening to the wretched clap-trap of publicans and lodging-house keepers,—men *who pretend to advocate the sailors' claims to higher wages*, only in order to plunder them of a greater amount. Had the seamen sent a petition requesting a better quality of food and lodging, the just shipowners of London and Liverpool would have aided their cause. But these are painfully aware of the fact, that an increase of pay at present simply means with the great mass an increase of drunkenness and debauchery!

MERCATOR.

P. S.—It is a very remarkable circumstance that all the deaths of the four steampackets which have brought home yellow fever have been entirely confined to their crews,—no single passenger or officer having suffered, excepting the surgeon who attended them,—a fact which bears out repeated assertions in my former papers.

There can be no doubt, moreover, of the care and solicitude of the company for the health of their crews, and that everything is done by them that can contribute to their health and comfort; so that much must be attributed to the reckless and often intemperate habits of the seamen themselves, and the consequent liability to which they are subject when fever is abroad.

In mercantile vessels, however, commonly such is not the case; and it is also worthy of remark, that the water-closets are placed immediately next aft and close to the bunks of the crew. A medical man attending the sick once remarked to the commander of one of those vessels, on learning this fact,—“It is of no possible use calling me to attend your sick, when you show me their sleeping berths, and what is next to them. No effort of mine can save your men from such exposure. A single night would be sufficient to give them fever.”

With facts like these before us, who can wonder at the mortality

among merchant seamen? who can wonder at their desertion from ships, where no comfort is to be found, where not a dry bed is to be had in their living places, and where such places are infested with the close proximity of the odours arising from filthiness.

M.

[Shipowners who really wish to make a comfortable berth for their men will adopt this proposal of our correspondent.—Ed. *N. M.*]

A meeting of the Economy and Trade Department of the National Association for the Promotion of Social Science was held on the 19th of November, at their rooms in the Adelphi, at which a paper was read by Capt. Toynbee, F.R.A.S., on the Social Condition of our Merchant Seamen; the Hon. Arthur Kinnaird, M.P., in the chair.

The paper went fully into the evils and hardships attending the pursuit of sea-faring men under the present system of treatment in the Merchant Service, and their social condition both at sea and on shore, and concluded with the following suggestions:—

“1. A government pension or annuity fund and life assurance, managed by shipping masters.

“2. That the Merchant Shipping Act be so modified that the Board of Trade and its officers may be empowered to inspect the fore-castle and provisions of ships (especially lime juice) before, during, and after a voyage. That it shall require the heading of a ship's articles to contain a statement of the fore-castle, its size, height, ventilation, drainage, protection from sea and rain, &c. Also that men are to get part of their pay before leaving their ship, and to be paid up to the date of their getting their money.

“3. That a new scale of provisions, adapted to modern improvements, shall be called for from Local Marine Boards, and entered in the articles.

“4. That the paying of seamen be so managed that they may, if they wish, leave their addresses and go home at once to their wives and families, the rest of their pay and papers to be forwarded to them on pay-day.

“5. That Government might check the decrease of British seamen by establishing training ships for poor boys (especially sailors' sons), and, if it be found requisite, by encouraging shipowners to take apprentices.

“6. That shipowners and the friends of seamen be moved to invest money in buildings, which will enable married seamen to get the full worth of their money, and leaving their wives and families respectably placed. Also, that they will give monthly notes to the wives and families of seamen, and combine to stop advance notes, encouraging the pension fund, by offering to pay their month's advance into it.

“7, and lastly. That sailors' institutes or clubs be started in large seaports.”

To which was added a recommendation for carrying out the following resolution, passed at the Manchester Congress:—

“That the Social Science Association be recommended to consider the appointment of a sub-committee, in which officers of the Royal Navy and Merchant Service, and others especially interested in the welfare of seamen, should be invited to take part, for the purpose of preparing and promoting measures of amendment and improvement of that class.”

The meeting was addressed by Captain Dawson, Captain Hunter, Mr. Griggs, shipowner, Dr. Dickson, medical inspector of Customs, Captain Joseph Toynbee, and the Chairman; after which the above resolution was affirmed, and the meeting separated.

Captain Toynbee alluded to the wet and dark fore-castle in which merchant seamen are berthed, which condition is amply confirmed and commented on, but with no practical remedying proposal. Certainly much has been said of late respecting the social comforts of seamen; and, although we recognize the leading exertions of Captain Toynbee on the subject, we do not see that unanimity in approval of his views that we might have wished or could have wished. Even one of his brother officers considers their seamen *better off in fore-castles* than they would be down below. As to their being constantly wet, that can be remedied. But we have not seen this captain's remedies from that better management to which he alludes.

We recommend the plan of our correspondent “Mercator” to the consideration of shipowners generally, as one that would ensure the seaman a comfortable dry bed to lay on at all times, instead of the wretched wet den to which he has to retire at present. And when our shipowners turn their attention to making a *comfortable ship* for their men as far as lays in their power, we may not hear so much, as we do now, of the scarcity of our merchant seamen. Who can wonder at the desertion complained of? The wonder should rather be how men can stay by ships in which all prospect of their comfort is *hopeless*.

ROYAL NATIONAL LIFEBOAT INSTITUTION.

On Thursday, the 6th of December, a meeting of this institution was held at its house, John Street, Adelphi. Thos. Chapman, Esq., F.R.S., V.P., in the chair. There were also present Sir Fras. Outram, Bart., the Right Hon. Stephen Cave, M.P., W. H. Harton, Esq., Sir E. Perrott, Bart., Admiral M'Hardy, Admiral Gordon, George Lyall, Esq., Admiral W. H. Hall, C.B., Capt. Egerton, R.N., Admiral Ryder, Capt. De St. Croix, Colonel Palmer, Capt. Ward, R.N., inspector of lifeboats to the institution, and Richard Lewis, Esq., the secretary.

The minutes of the previous meeting having been read,

A reward of £25 was voted to pay the expenses of the Birmingham No. 2 lifeboat of the institution, stationed at Caistor, Norfolk, in putting off on the 30th of November, in reply to signals of distress, to the assistance of the schooner *Coronation*, of London, which was found to be lying fast on the Inner Barber Sand in the midst of the breakers. The lifeboat was unable to approach the vessel nearer than within 60 or 70 yards. She was, however, the means, after staying by the vessel for two hours, of saving the crew of four men and bringing them safely ashore.

The sum of £23 was likewise granted to pay the expenses of the Bacton lifeboat of the institution, in putting off, during a heavy gale of wind from the N.N.E., to the assistance of the schooner *Swana*, of Goole, which was driven ashore by the gale at Walcot, Oastend, on the 17th of November. The lifeboat was fortunately the means of saving the crew of four men, who were in the rigging.

The sum of £7 was also granted to pay the expenses of the lifeboat of the institution stationed at Portrush, for putting off on the 11th of November, during a strong gale of wind from the N.W., to the assistance of the barque *Coriven*, of Londonderry, which had come into collision with the schooner *Margaret Caldwell*, of Portrush. The lifeboat placed some of her men on board the *Coriven*, as the barque's crew were thoroughly exhausted, and was thus enabled to render efficient service to the vessel. The lifeboat afterwards brought the crew of six men of the *Margaret Caldwell* safely ashore.

A reward of £7 10s. was likewise granted to pay the expenses of the *Mary Hartley* lifeboat of the institution, stationed at Broughty Ferry, near Dundee, in saving, in conjunction with the steamer *Auld Reekie*, after great difficulty, the crew, consisting of five men, of the schooner *Tay*, of Dundee, which went ashore during stormy weather on the Gaa Sands. It appeared that the hazy weather deceived the master as to his position, and in attempting to change his course the vessel missed stays and went ashore.

A reward of £32 was also voted to pay the expenses of the old lifeboat stationed at Mundesley, in putting off, on the 16th of November, during a gale from the E.N.E., to the assistance of the crews of four small sloops which were observed to be in distress off Mundesley, and saving, in four trips, the lives of nine men and two women from the vessels on the above occasion.

A reward of £6 was also voted to the crew of the lifeboat of the institution stationed at Thurso, N.B., for putting off during heavy weather to the assistance of the schooner *Anaconda*, of Lerwick, which was observed to have her sails split. The lifeboat was fortunately the means of saving the crew of five men and of bringing them safely ashore.

Rewards amounting to £151 6s. were also voted to the crews of the lifeboats of the institution stationed at Broughty Ferry, Burnham, Queenstown, Redcar, New Brighton, Tynemouth, Berwick-on-Tweed,

Winchelsea, Palling, Hasborough, Yarmouth, Eastbourne, North Deal, Walmer, Arklow, and Appledore, for various services to shipwrecked vessels and their crews during the month of November.

The silver medal of the institution and a copy of its vote on parchment were voted to Mr. William Rowlands, coxswain of the Holyhead lifeboat, in testimony of his long and gallant services in assisting to save, in the present and former lifeboats of the station, a large number of lives from shipwreck.

The silver medal of the institution, a copy of its vote on parchment, and £2, were also ordered to be presented to Watkin Lewis, of Aberystwith, in admiration of his noble conduct in wading into the sea on two different occasions, at the risk of his life, and aiding to save seven persons from perishing, one being his own father.

A reward of £5 was also granted to some Winterton beachmen, for putting off in a yawl and bringing on shore three men belonging to a wrecked sloop, on the 31st of October.

A reward was also voted to Evan Evans, in acknowledgment of his laudable conduct in wading into the surf, at the peril of his life, and saving from an inevitable death a fisherman, who had been capsized from his boat in Aberystwith Bay, and was found insensible in the sea, his companion having unhappily perished on the occasion.

A reward of £1 15s. was also voted to four men for putting off in a boat and saving three out of four men who had been capsized from their fishing-boat off Greencastle, near Londonderry.

A reward of £9 was also voted to a boat's crew for their laudable and persevering exertions in saving seven men from the brig *Jane*, of Sunderland, three men from the brig *Lancaster*, of West Hartlepool, and five men from the schooner *Victory*, of Ipswich, which, during a storm, had stranded off Bridlington Quay.

Various other rewards were also granted for saving life from wrecks on our coasts.

The meeting ordered £1500 of the funded capital of the institution to be sold out, to assist to defray the very heavy payments, amounting to £4,570, on various lifeboat establishments. It was reported that during the current year the society had expended £29,650 on its 172 lifeboat stations; and that, in the same period, it had contributed to the saving of 831 lives from various wrecks, for which services it had granted £2,020 as rewards.

A contribution of £50 had been received from the Ryde Amateur Musical Society, being the proceeds of a concert on the 13th of September last, in aid of the Isle of Wight lifeboat stations. The officers and crew of her Majesty's ship *Pylades* had also forwarded a donation of £5 8s. to the institution, being part proceeds of the balance of an accident fund on board that vessel. The people of Gloucester had, through Messrs. E. L. Kendall, S. R. T. Mayer, and V. S. Morwood, also forwarded to the society a contribution of £450, to defray the cost of a lifeboat, to be named after the city. A remittance of £350 had likewise been received by the institution from Nottingham towards the

cost of a lifeboat, to be named the *Robin Hood*, of Nottingham, after the volunteer corps of that town.

Legacies had been received during the month of November from the late Samuel Travis, Esq., of Cheltenham, £100; the late William Pearson, Esq., of York, £18; the late John Graham Gilbert, Esq., of Yorkhill, in aid of the Glasgow branch, £100; and the late Mrs. Mary Ann Story, of Kensington, £500, to pay the cost of a lifeboat. The sum of £6 7s. had also been received from the Rev. E. S. Corrie, of Maplestead: £1 7s. of that amount had been collected by the late Master E. B. Corrie, who had for many years past, under the name "Invalid Boy," made a collection for the institution, and the £5 was the amount of his legacy to the society.

New lifeboats had been sent during the month of November to Polkerris, Cornwall; Mundesley, Norfolk; Chapman's Pool, Dorset; and Ilfracombe, Devon. The railway companies had, as usual, kindly given the boats a free conveyance to their destinations.

Lifeboat demonstrations had taken place with the boats at Rochdale, Fowey, Swanage, and Ilfracombe.

The thanks of the institution were voted to Mr. Alexander Munro, G. B. M. Beatson, Esq., Dr. L'Estrange, and P. H. Hume, Esq., on their retiring from the office of honorary secretaries of the Banff, Fraserburgh, Arklow, and Dunbar branches of the institution.

A communication was read from Mr. E. P. Bonnessen, of Copenhagen, stating that he had built a lifeboat on the plan of the institution. The boat was found to answer the purpose of the locality very well. Lifeboat societies were also proposed to be formed on the plan of the institution at Scheveningen, Holland, and in Nova Scotia.

The committee expressed their deep regret at the lamented death of the late William Cotton, Esq., F.R.S., and the late Captain Thomas Heard, R.N., who had for many years past most zealously co-operated with the committee. Votes of condolence were passed to the families of the deceased gentlemen.

It was reported that Sir Thos. Tobin, of Ballincollig, county Cork, was making an effort to collect penny subscriptions to pay the cost of a lifeboat.

Reports were read from the inspector and assistant-inspector of lifeboats on their recent visits to different lifeboat stations on the coast; and the proceedings then terminated.

SEAMEN FOR THE MERCHANT SERVICE.

The deficiency of British sailors for the supply of our mercantile marine is, month by month, assuming a more serious aspect, and the causes which lead to this deficiency are daily becoming more clearly manifest. Few more emphatic examples of cause and effect can

probably be found, and it requires no nautical or scientific knowledge to discover that the evils existing are beyond the reach of cure by the establishment of training ships alone.

A memorial from 170 seamen belonging to the North-east ports of the United Kingdom has been forwarded to the Registrar-General of Shipping for transmission to the Board of Trade, containing an enumeration of grievances appertaining specially to colliers and coasting vessels. Among these grievances are found the undermanning of ships, five hands being employed in vessels of from 154 to 196 tons, whereas seven is the recognized and proper number; that these vessels are very commonly unseaworthy, being leaky in the hulls, and deficient in canvas and cordage, and that, as a consequence, the pumps are constantly at work, and the running gear continually in want of repair, to the exhaustion of the scanty crew employed; that the boats are frequently worthless, and useless as a means of saving life; that the forecastles are deficient in length, width, and height, so that in some cases a man must go to the hatch for room to put on his clothes.

The memorial goes on to observe that the various sections of the Merchant Shipping Act of 1854 have remained, to all intents and purposes, a dead letter, and that, in consequence of the continued existence of these evils, "we (skilled labourers as we are, and valuable ones,) gladly take any employment on shore, where even the farm labourer, although he runs little or no risk to life and limb, gets better paid." So much for the coasting trade.

Is the tale better as to our ocean-going ships? During the past two years upwards of 200 accredited cases of scurvy have been brought into this port alone, in so bad a state as to require immediate treatment in hospital, this very inadequately representing the number of victims to the disease, as the superintendents of Sailors' Homes in London and elsewhere can attest. Several inquests have been held during the last year on the bodies of seamen who have died from this malady, at one of which it was proved that the mixture served out at sea was not lime-juice at all, and useless as an anti-scorbutic; and, in consequence of the verdict pronounced at another, the master of a vessel was convicted and fined at the Thames Police Court for not having a sufficient supply of that article on board. During the past three months no less than twenty ships have arrived in the Thames bringing cases of scurvy, and in some instances from 20 to 70 per cent. of the crew were practically disabled by that disease from efficient duty. The root of this increasing evil is mainly due to the fact that it is the exception rather than the rule to carry drinkable, far less pure, lime or lemon-juice on long-voyage ships. A want of variety and deficiency of quality in provisions is sometimes a helping cause, but of direct causes the above is first and foremost. No medical question is involved in the matter, or anything about which doctors can differ, inasmuch as no scientific arguments, however sound, or theories, however plausible, are required to establish a fact that has been known for the last two centuries, and acted upon for the last seventy years; that fact being, that if good lime or lemon-juice be regularly

given to the crew of a ship, that crew will remain free from scurvy for a period of twelve or eighteen months,—a far longer term of water-passage than is ever reached by any of our sea-going ships (except whalers) in the present day.—*Times*.

This complaint of the want of seamen for our merchant ships put forth by the *Times* reminds us of a child crying for its playthings when it has been long wilfully destroying them. Let the *Times* look into our present number, and see the remedy proposed for keeping dry bunks and forecastles where the merchant seamen are berthed. When this is carried out effectually, the first great evil of wet beds, clothes, &c., will be remedied. The rest will follow easily.

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 31, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 605.)

All bearings are magnetic.

Name.	Place.	Position.	F. or R.	Ht. in Feet	Dist seen Mls.	[Remarks, &c. Bearings Magnetic.]
73. Portsmouth	England	South coast	..	..	..	Leading marks (a.)
74. Svinbadarne Shoal	Swedish, S. coast	56° 10' 5" N. 12° 30' 7" E.	F.	26	6	Est. ? Lightvessel red. (b.)
Ipsø Point	Oland Island	56° 44' 5" N., 16° 30' 5" E.	F.	25	9	Est. ? (c.)
Sommars I.	Finland Gulf	Altered to	R.	..	..	Est. 27th October, 1866. Revolves once a minute
75. Bombay Harbour	Kenery Isle	.....	F.	..	..	Est. 1st June, 1867.
Floating Light	Outer	.....	F.	..	..	Est. 1st June, 1867. To be red instead of white.
76. Canary Islands	Palma Cumbida Port	28° 50' 1" N. 17° 46' 9" W.	R.	307	25	Est. ? N.E. point of Island
Gudiana Bar	.....	.....	..	..	..	Est. ? Change in position of light. (d.)
77. Great Horst	Prussia, Baltic	54° 6' N. 15° 5' E.	R.	300	20	Est. 1st December, 1866. Revolves every twenty minutes.
78. Cape Gregory	Oregon, Point Arago	43° 20' 6" N. 124° 23' 3" W.	F.	75	15	Est. 1st November, 1866. (e.)
79. Funchal	Madeira	Loo Rock	F.	119	8	Est. 1st December, 1866. Red.
80. Hurst Light	Low	.....	F.	46	..	Est. ? Removed to within the Fortifications. (f.)

F. Fixed. Ff. Fixed and Flashing. R. Revolving. I. Intermitting. Est. Established.

(a.) 73.—*Knolls on the Outer Bar of Portsmouth.*—A knoll has been recently found on the outer bar of Portsmouth harbour, of loose shingle or ballast with 18 feet on it, at low water springs.

A can buoy has been placed on its western edge; *chequered black and white*, in 19 feet water, with Southsea Castle lighthouse bearing N.b.E. $\frac{1}{2}$ E. a large half mile, and the Spit beacon buoy N.W.b.W. $\frac{1}{4}$ W. one sixth of a mile.

A similar knoll of 22 feet has also been found S.W. $\frac{1}{4}$ S. $1\frac{1}{2}$ cable lengths from the above in the line of the present leading mark into Portsmouth Harbour; viz.:—the outer Swashway beacon in a line with Fitzclarence monument: To avoid it keep the Fitzclarence monument just open to the eastward of the Coastguard flagstaff on Southsea beach.

An additional *black* buoy (No. 2) has been placed on the eastern side of the Elbow spit, N.b.W. $\frac{1}{4}$ W. $1\frac{1}{2}$ cable length from No. 1 black buoy, and with the Swashway beacons in line; the other black buoys in the Channel have been consecutively numbered 3, 4, and 5.

Since dredging, the deepest water over the bar (50 feet) lies to the westward of the former fairway course, and the bar marks have been altered accordingly; viz.:—a *red* beacon has been erected in the western angle of Blockhouse fort, and the red beacon in Gosport fort has been moved 50 feet to the westward, and painted *black*.

Sailing Directions.—A vessel entering Portsmouth harbour from the southward,—keep the Fitzclarence monument just open to the eastward of the Coastguard flagstaff until the red beacon in Blockhouse fort (appearing over a black patch with a white border on the wall below) comes in one with the black beacon in Gosport fort; with this mark on, proceed over the bar between the black and white buoys until the high-water mark of Blockhouse point is on with the bakery chimney of the Royal Clarence Victualling Yard; steer on this mark, and when the Spur redoubt comes in line with the King's bastion flagstaff the course will be up the centre of the harbour.

Variation $20^{\circ} 45'$ West in 1866.

(b.) 74.—A bell is sounded in foggy weather at short intervals, 3 strokes in quick succession each time.

(c.) 74.—The light is exhibited from the western gable of the lightkeeper's dwelling, which is painted red, with a white ball on the apex, and is in lat. $56^{\circ} 44\frac{1}{2}'$ N. and long. $16^{\circ} 30\frac{1}{2}'$ E. of Greenwich.

(d.) 75.—*Alteration of Lights, Guadiana Bar*.—The two fixed *green* lights on Point Caiman, Cristina Island, on the east coast of the canal, have been removed to the opposite bank on the south-east extremity of Canela Island.

The lights, as before, are on iron columns, which latter form the day mark for the channel, as the lights do by night. One is 43 feet, the other 33 feet above the level of the sea; and they can be seen from a distance of 5 miles.

As the bar is shifting, the position of these lights will be altered in accordance with its movements.

(e.) 78.—The light is a *fixed* white light, varied by an alternating *flash* and *eclipse* each lasting three seconds at intervals of *two minutes*.

(f.) 80.—The light is on the same bearing from the High light as before, but the distance is 223 yards instead of 252.

The leading light up the Solent has also been removed from the Low to the High lighthouse, and is now exhibited at an elevation of 65 feet above the sea at high water springs.

PACIFIC DANGERS TO NAVIGATION.

In some recent numbers we have occasionally remarked on the extensive unexamined ground occupied by the numerous lagoon islands and other groups scattered over the vast range of the Pacific Ocean. As this sea is now likely to be navigated by several lines of mail

steamers, the correct positions of these dangers become a subject of considerable importance. We find the following very acceptable information on the subject in a paper printed at Honolulu, the capital of the Sandwich Islands.

We shall from time to time publish the position of islands in this ocean, prepared for us by Captain Daniel Smith, an experienced ship-master resident here, who has for many years made this his peculiar study. The figures, after being set in type, will be carefully revised by him, and only issued when known to be perfectly correct. So many errors are found in nearly all the present charts, and so many shipwrecks therefrom, that this information must prove important, as it will be reliable. We commence with giving the position of the islands comprising the *Pomotou Group*, the name signifying cloud or multitude. The following list embraces only a part, the remainder will appear in a future issue.

In most of the American and English charts of the South Pacific, remarks Captain S., I have found from experience in sailing through this dangerous group, the positions very inaccurately laid down. In 1856, while in Papeiti, Tahiti, I obtained from the late Captain Jos. Moore, of Papeiti, well known in that part of the Pacific for his researches among those islands, a French chart, said to be very correct, (and I have since found it so,) by M. Vincendan Dumoulin; from the observations of the French corvettes *L'Astrolabe* and *La Zélée*, from which I copy.

Minerva Island and reef, lat. of West end, $22^{\circ} 36'$ to $22^{\circ} 42'$ S.

Minerva Island and reef, long. of West end, $133^{\circ} 42'$ W. of Gr.

Minerva Island and reef, lat. of East end, $22^{\circ} 35'$ to $22^{\circ} 40'$ S.

Minerva Island and reef, long. of East end, $133^{\circ} 20'$ W. of Gr.

Manga Reeva or Gambier Islands, extending N.E. and S.W., 18 miles, principal lat. $23^{\circ} 8'$ S., long. $135^{\circ} 2'$ W.

	Lat. S.	Long. W. of Gr.
Crescent Island (centre)	23 18	134 40
Lord Hood Island, West point	21 31	135 35
Lord Hood Island, East point	21 32	135 16
Moerenhou: Isle	21 58	136 12
Isle (no name)	22 26	137 32
Marane Isle	23 6	137 16
Actæon Island, extending N.W. and S.E., N.W. point	21 20	136 37
" " " " S.E. point	21 29	136 26
Cockburn Island, N.E. point	22 12	138 40
Osnaburg or Matilda Island, extending E.N.E. and W.S.W., 15 miles, S.W. point	21 53	139 0
Faith Island (doubtful) said to be in	21 10	138 52
Carysfort Island, N.E. point	20 44	138 20
Bligh Island	21 36	140 38
Barrow Island	20 44	139 2
Whitsunday Island (centre)	19 25	138 35
Egmont Island (centre)	19 23	139 13

PORT WAKEFIELD,—*Gulf St. Vincent.*

The following sailing directions and information will cancel those published by the Marine Board of South Australia on the 22nd of January, 1866, and which commanders of ships are requested to destroy.

From the lightship off Port Adelaide Outer Bar steer N.W.b.W. $\frac{1}{2}$ W., allowing for tide and leeway.

The tides N.W. of the lightship are strong; flood sets over the Long Spit N.W., and the ebb S.E., running at springs two knots. Keep the above course (N.W.b.W. $\frac{1}{2}$ W.) for 25 miles, to sight a large red buoy with a pyramidal top and triangular head, which marks the western end of the Long Spit, extending 20 miles westward, from the low sandy shore to the northward, and in the vicinity of the Gawler River.

The buoy is at the S.W. and W. end of the shoal in 19 feet at low water, ord. springs, in lat. $34^{\circ} 33' 7''$ S., long. $138^{\circ} 7' 7''$ E. with the West summit of the Hummocks Range of hills at the head of the Gulf, N. 8° W., and Mt. Lofty S. $56^{\circ} 30'$ E.

Commanders of ships will now be able to place the buoy on their charts, which should be done on the receipt of this.

The coast line on the East side of the Gulf, near the Long Spit, is very low, and cannot be seen from the deck of a small vessel when outside the buoy, unless there be much refraction.

The coast on the West side, to the westward of the Long Spit, is bold, and in places cliffy.

About a mile and a half to the northward of the buoy there is a swashway or channel, in which is from 6 to 8 fathoms.

The patch on which the buoy is placed may be detached from the main shoal; but until this portion of St. Vincent's Gulf has been accurately surveyed, this cannot be determined.

To the eastward and N.E. of the buoy the water appears to shoal gradually to the land, the above swashway probably intervening.

Caution.—In thick weather, or in the middle of a summer's day, when the sun is ahead, and objects much affected by refraction, the lead should be carefully attended; by keeping a depth of 5 fathoms, reduced to low water, the edge of the Long Spit may be avoided, and the buoy sighted.

Sailing Directions.—Having brought the buoy N.E. 2 miles, steer N.W.b.N. $\frac{1}{2}$ N. for 5 miles, until the western summit of the Hummocks is seen bearing North, then alter course to North for 15 miles, until the land at the head of the Gulf is seen, and a bold hill on the East side (inside Sandy Point) also; then alter the course to N.N.E., not going into less than $4\frac{1}{2}$ fathoms, until a large nun buoy is seen; steer then to keep the buoy to the eastward, at 2 cables length; then alter the course to North.

The buoy lies in 17 feet on the outer extreme of the Shoal Spit, stretching out to the westward of Sandy Point, on the Bald Hill Spit.

Before nearing the buoy, shorten sail, and get ship ready for anchor.

The soundings southward of the buoy are shoal; this portion of the Gulf being only navigable by small craft of light draught.

Thistle Rock.—Thistle Rock, noticed in the sailing directions of January, 1866, has been removed by blasting, the *débris* of the rock being only 3 feet above the surface of the bottom.

The position of the rock was as follows:—Lat. $34^{\circ} 19'$ S., long. $138^{\circ} 11' 5''$ E.; Mount Lofty, S. 40° E.; West summit of the Hummocks Range, N. 20° W. The buoy is removed.

Error in Chart.—It will be seen by the above that the rock was apparently close in shore. This is owing to the imperfect charts of this portion of the Gulf, as the rock was fully 2 miles from the low coast line.

The coasters report other small rocks in the vicinity of the Thistle Rock; but until the Gulf is re-surveyed, no further information can be given.

Position for Anchoring.—Having brought the largest store in the township of Port Wakefield N.N.E. $\frac{1}{2}$ E., or the buoy S. $\frac{3}{4}$ E., and the mangrove bushes on the Sandy Point between E.S.E. and S.E.b.E. $\frac{1}{2}$ E., anchor in 4 fathoms at low water. There will be room to swing in this berth, but not space to beat out of it without going into 18 feet at low water.

Beating up the Gulf.—In making a passage from the Lightship to Port Wakefield against head winds, make the first board to the westward, and stand on that tack, say West, for about 16 miles, not coming under 8 fathoms, to avoid the shoal water on the Oronte's Bank; then go about, to work between the two shoals,—viz., the Oronte's Bank and the Long Spit; but in drawing to the northward, fail not to sight the buoy on the latter danger, as it forms an excellent guide for enabling a commander to know when he is to the northward of the Oronte's Bank.

Western Coast may be approached.—Being off the buoy, and consequently to the northward of the Oronte's Bank, the western coast may be safely approached, making long boards from 5 fathoms outside the Long Spit, on the East side, to within a mile of the western shore.

On nearing Sandy Point, pass the red buoy off the Bald Hill Spit as previously directed, make short tacks, take care not to bring the buoy to bear to the southward of S. $\frac{1}{2}$ E., and not stand to the westward into less than $3\frac{1}{2}$ fathoms, anchoring in the space before indicated.

Small Vessels—Position for Anchoring.—Small vessels may stand towards the creek, but the water shoals very rapidly, from 3 fathoms in some places; and should a vessel touch the ground no harm, as the bottom is generally sand and mud, and there is no sea. Take care to keep the ship in such a position as to be clear of her anchor.

Land Wind.—In leaving Port Wakefield, do not start till morning,

when the wind generally being easterly, an offing may be obtained without beating out.

Winds.—The winds in fine weather, of summer, are generally from sunrise to about 8h. a.m. from E. to E.S.E.; in hot weather, the wind in the morning may be from N.E., gradually falling calm towards 8h. a.m.

The sea breeze generally sets in after an interval of a couple of hours' light winds, or calm, at about 11h. a.m., and freshens towards 5h. p.m., gradually moderating till sunset, when it comes round to the S.E., and dies away towards night. The barometer falls rapidly, with northerly winds both in summer and winter seasons, and generally precedes a change of weather from the westward.

In summer the change often occurs suddenly from the southward, when it blows hard.

In the winter the strongest winds are from the westward.

Tides.—The tides at the head of the Gulf are very irregular, and much affected by prevailing winds.

With strong westerly winds the rise of tide is much augmented, whilst the fall is much diminished. Often during westerly winds, at neaps, a higher tide will be experienced than at springs, with fine weather, and South or South-east winds.

With the latter the tides are at the lowest, and the rise at springs is much reduced.

In fine weather, with ordinary land and sea breezes, the time of high water at F. & C. is 5 hours, and the rise about 9 feet.

At neaps, in fine weather, the rise and fall is almost imperceptible, the time of apparent high water being very irregular.

Produce is now sent from Port Wakefield to the shipping in the roadstead by barges.

The river entrance is very shallow, and has a flat of upwards of a mile in extent, uncovered at low water springs.

At a rise of 6 or 7 feet above the low water spring level loaded barges can cross the bar.

The question of deepening the entrance of the river, or building a jetty across the flat, is under the consideration of the Government.

The supply of fresh water at Port Wakefield is limited, and difficult to procure. It is recommended that a sufficient stock should be procured at Port Adelaide, if ships call there on their way up the Gulf; or water can be obtained by arranging for the barges used at Port Wakefield, but which generally belong to persons at Port Adelaide, bringing up a supply.

B. DOUGLAS,

President of the Marine Board of South Australia.

FIXED WHITE LIGHT AT BILOXI,—*Mississippi.*

On and after the 15th of November, 1866, a fixed white light will be exhibited from the lighthouse at Biloxi, Mississippi, West of the NO. 1.—VOL. XXXVI.

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western entrance to Biloxi Bay. It is elevated 62 feet above the sea-level, and visible from a distance of 13 miles, in lat. $30^{\circ} 23' 45''$, long. $88^{\circ} 53' 6''$.

LIGHTHOUSE AT MOUTH OF NORTH RIVER,—*Albemarle Sound, North Carolina.*

A screw-pile lighthouse has been erected on the bar at the mouth of North River, Albemarle Sound, North Carolina. It stands in $3\frac{1}{2}$ feet water, mean tide, and distant about 300 yards to the westward of the channel across the bar, as indicated by the three buoys in range. It is 35 feet high, and visible at the distance of 10 miles. It will be lighted for the first time on the evening of the 1st December, 1866.

RE-ESTABLISHMENT OF LIGHTHOUSE AT CROATAN,—*North Carolina.*

The lighthouse at Croatan, between Croatan and Albemarle Sounds, has been restored, and will be lighted up for the first time on the evening of the 1st December, 1866. It is 35 feet high, and visible at the distance of 10 miles.

HOSPITALS ABROAD FOR BRITISH SEAMEN.

Hospital for British Seamen at St. Petersburg.—Thanks to the endeavours of Mr. Michell, her Majesty's consul at St. Petersburg, a hospital for British seamen will be opened next spring at Cronstadt. The new hospital will contain forty beds, and be supported by a tax on British shipping, at the rate of one rouble per man of the crews of sailing vessels, and fifty copecks per man in the case of steamers. The cost of establishing the hospital is defrayed from voluntary contributions, partly of private gentlemen, foremost among whom is Mr. J. G. Hubbard, M.P., the owner of a large cotton spinery near St. Petersburg, and partly of corporations, the British Factory there having subscribed 5000 roubles, and the Russian Company 1000 roubles. The Board of Trade has also given 5000 roubles.

Hospital for British Seamen at St. Michael's.—The *Campeao Liberal* of St. Michael's says: "The good name which the Hospital of Mercy, or Free Hospital, of this city enjoys, induced certain merchants, who are also exporters of oranges, and to whom many English vessels are consigned, to make an arrangement with the authorities of the hospital to receive English sailors suffering from disease. This, doubtless, must be a great boon to the crews of the vessels anchored off this island, as the barbarities inflicted on them in former years, when everything required for the re-establishment of their health was wanting, must contrast forcibly with the treatment in the above hospital, which contains all that humanity can suggest. The

excellent shipbroker of this place, Mr. Isaac Buzaglio, was the first to recommend the Michaelouse Hospital to captains of vessels, where he had already sent two sailors who were suffering from a gastric complaint; and, accompanied by Mr. A. G. da Camara, the commissary of the hospital, he took ten English captains over it, who were much struck with the roomy building, the good arrangements, and irreproachable cleanliness that pervaded all parts of it. The credit is not all due to the commissary, as the zealous assistant manager, Mr. J. J. P. Barboza, has striven by unwearied efforts to bring the establishment to its present position, working night and day, and superintending the duties of his subordinates. Mr. Amancio Gago da Camara is a nobleman to whom the Island of St. Michael's owes many benefits, and under his auspices the hospital will no doubt be managed in the most judicious and prudent manner."

METEOROLOGICAL OBSERVATIONS.

The following circular has lately been issued by the Board of Trade:—

"The Board of Trade have had under consideration the report of a committee, appointed by the Royal Society, the Admiralty, and the Board of Trade, to inquire into the constitution and functions of the meteorological department, which recommended, as the most important step to be taken, the transfer of the management of the business of the department to a scientific body. The Board of Trade have also consulted the Royal Society upon the subject of this report, and the President and Council of the Royal Society concur generally in the measures recommended by the committee, and are prepared to undertake the duty proposed to them.

"With regard to the issue of storm-warnings, the President and Council of the Royal Society are of opinion that 'at present these warnings are founded on rules mainly empirical,' and therefore should not be issued under the superintendence of the scientific body to whom the discussion of meteorological observations will be committed. The President and Council think, however, that 'in a few years they may probably be much improved by deductions from the observations in land meteorology, which will by that time have been collected and studied, and that the empirical character may thus be expected to give way to one more strictly scientific,—in which case the management of storm-warnings might be fitly undertaken by a strictly scientific body.'

"Under these circumstances, the Board of Trade are compelled to suspend from the 7th day of December [1866], 'cautionary storm-warnings,' which have from time to time been issued by the meteorological department of the Board of Trade. It is hoped that the warnings may be resumed by the new meteorological department at no distant time upon an improved basis. In the meantime the daily

weather reports will be received and published as heretofore. If at any port or place there is a desire to have these reports, or any part of them, communicated by telegraph on the morning on which they are received, they shall be so communicated on a request to that effect being sent to the Board of Trade, accompanied by an undertaking to pay the expense of the telegram from London to the port or place.

“T. H. FARRER.”

A measure at which we are by no means surprised. Surely we had been for some time verifying the old adage of trying to run before we could walk, and practising the art of a science before we had got into the secrets of it, which such a practice as that adopted by the Board of Trade absolutely required. If it be bold to foretell the weather, it appears nearly as much so to say when the promised predictions will be recommenced.

DISASTROUS WRECK OFF THE PORT OF LIVERPOOL.

The fashionable watering-place of New Brighton, not far from the largely-frequented port of Liverpool, has something to boast of in its annals that will not conduce much to its honourable renown. We have been led to believe stories about wreckers of Cornwall,—about outrages on the western coast of Ireland,—but here is one not to be doubted about the civilized coast of Cheshire.

Liverpool, 27th November.—A sad piece of news has arrived to-day. Last night a very severe storm prevailed in the Channel, the wind at Holyhead blowing a terrific gale from the North-west. The *Elizabeth Buckham*, commanded by Capt. Wylie, and consigned to Messrs. Booker and Co., of Liverpool, was wrecked during a severe storm off the Great Burbo Bank. She left Queenstown, where she had put in for provisions and water, on the 25th. Her tonnage was 242, and she was bound from Demerara with a cargo of rum, sugar, and 1100 cocoanuts. Up to the dispatch of our parcel no tidings as to the escape of any of the crew had been received, and it is all but certain that they perished to a man, including the captain. With the exception of this wreck, no serious casualties have been reported to-day, but several ships are detained in port in consequence of the tremendous sea running over the bar.

The next account we have of her says,—

Disgraceful Scenes.—Yesterday (28th November) New Brighton, the well-known watering-place on the Mersey, was a scene of great excitement, in consequence of a large portion of the cargo of the brig *Elizabeth Buckham* having been washed ashore near that place. Upwards of 130 puncheons of rum and several bales of cotton, together with some empty sugar hogsheads, lay close to the Ferry Hotel, guarded by the Customs officers. Many of the rum casks had been “tapped” before they fell into the hands of the coast guardsmen, and the raw

rum, which had been drunk by those who procured it, caused scenes of debauchery totally indescribable.

One youth, named Foulds, related to Mr. Fielding, who keeps an hotel at New Brighton, managed to get some of the rum, drank it, and such were the consequences, that, notwithstanding every medical attention, he succumbed to the fatal effects of the drink. Another man, a painter, emptied his paint can, wiped it with a bunch of grass, filled it with rum, took a drink, fell on his head in a pool of water, and had it not been for some passers-by, would no doubt have lost his life. As it is, he at present lies very ill from the effects of the rum. Hundreds of similar cases could be mentioned.

All through the Tuesday night and Wednesday morning, men and women and even children were found in a state of unconscious intoxication among the sandhills, and were removed as soon as possible to their different homes, where they were attended to by the "stomach-pump." These are not the only disgraceful features connected with the wreck of the *Elizabeth Buckham*. Several females, one especially, who is very respectably connected, went down to see the remnants of the wreck. They were induced to take some rum, which appeared to be the order of the night. They soon became helpless, and while in that state were treated in a most foul and atrocious manner. One of them was found lying on her back in the sandhills quite insensible, and in such a state as to show that she had been unfairly treated. Up to the dispatch of our parcel yesterday evening none of the bodies of the crew of the ill-fated brig had been recovered, and with the exception of the wreck washing ashore at New Brighton and Hoylake, all traces of the unfortunate vessel have vanished.

NOTES ABOUT NOVELTIES.

An Ocean Yacht Race is a novelty in these days, but it seems no less likely to become, as our friends across the water call it, a great fact. However, here is a statement of the case.

"Advices received at Cowes state that the arrangements for the great American ocean yacht race have been completed. The course is to be from New York to Cowes. Three owners of yachts—Mr. J. Bennett, jun., of the *Henrietta*; Mr. Osgood, of the *Fleetwing*; and Mr. Lorillard, of the *Vesta*—have agreed to stake each 30,000 dollars, making up a purse of 90,000 dollars (or say £18,000), the first vessel in to take the pool. The stakes are deposited in the hands of a well-known leader of the sporting world, Mr. L. W. Jerome. The tonnage of the three yachts is nearly alike: the *Fleetwing* being of 204 tons; the *Henrietta*, 203; and the *Vesta*, 201. They will start on the 10th of next month. These yachts are the finest and swiftest ever built in the United States."

We have met with the foregoing in the *Daily News* of the 13th of

November; and another extract, which we here add, throws some more light on the subject.

"*The Ocean Yacht Race: The Start.*—At this time, 12h. 55m. the *Henrietta* had set her foresail, mainsail, jib, and flying jib; the *Vesta*, flying jib, jib, fore and mainsail; the *Fleetwing*, mainsail, foresail, jib, flying jib, main gaff topsail. The three yachts looked as seaworthy boats as could possibly be found; and as the sun shone down on their white canvas, they certainly appeared as pretty crafts as ever sailed on any waters, whether bay, lake, river, or ocean. Everything was in readiness, and immediately at 1h. Capt. Fearing gave the signal for the yachts to go, and obediently they bounded forward. Then followed a scene baffling description. The steamers again commenced moving; the report of cannons, whistling of steam whistles, cheering, hurrahing, singing, playing of the various bands,—all had an effect at once striking and exciting. At the start the positions of the yachts were as follows:—The *Fleetwing* was the northernmost boat in line, and the *Henrietta* to the southward, and the *Vesta* in the centre. The *Henrietta* at the start took the lead, having from her position the full benefit of the wind; while the others did not get so much, from their lying to the leeward. The *River Queen* and the other vessels then visited each of the yachts in turn. On board the *Henrietta* all was activity, the men ready to hoist the squaresail at a moment's notice. Mr. J. G. Bennett, Mr. Lawrence Jerome, and Mr. S. R. Fisk stood in the stern sheets; and as the various steamers approached the *Henrietta*, these gentlemen were made the recipients of cheers as hearty and prolonged as ever issued from human throats. The band on the *River Queen* struck up 'Auld Lang Syne,' and all on board caught up the strain, and joined in thus wishing Mr. Bennett a safe voyage. Then cheer again echoed after cheer, and 'Yankee Doodle' vied with the 'Star-spangled Banner' for mastery; while 'Viva L'America' insisted on having a good show, and beating both. The *Henrietta* never looked better than at this moment, and bets of 1000 to 800 on the *Vesta* were freely taken by her backers. Her captain, Mr. Samuels, is one of the most experienced and fearless sailors to be met with. In this latter trust he will agree well with Mr. Bennett, who does not care what canvas, or how much he carries, provided he gets in ahead of his competitors. Capt. Samuels was for several years in command of the *Dreadnought*, and in 1858 made the greatest passage ever known for a sailing vessel,—that is, from Liverpool to New York in 13 days and 8 hours. From the *Henrietta* the *Vesta* was visited; she was some short distance behind, her jibs flapping slightly. A splendid crew on her deck returned the hearty cheers which she too was made the recipient of; and afterwards the *Fleetwing* came in for her share of encouragement. Having gone so far as the bar with the yachts, the steamers turned towards New York. So long as a glimpse could be had of the racers every person remained on the deck and watched for any movements. But the position of the steamers prevented any further observations as to their bearing."—*New York World*, Dec. 12.

There is something so thoroughly new in this winter race of American yachts against each other, and at really high stakes, that we are quite at a loss to express our admiration of the enterprising *aquatic* spirit of the noble descendants of John Bull! A trip across the Atlantic on such conditions on a visit to Cowes is indeed something quite new, and we have no doubt will be recognized as it should be by our yacht clubs. There is no small excitement in the terms of the race also, and the interval of time will thus be established as another great fact not to be forgotten.

We had scarcely recorded the foregoing, when we have the satisfaction of finding that the friendly spirit in which this remarkable race has been conceived and carried out, has been well met by the following order of the Admiralty authorities to the American consul at Southampton, thus emulating on the part of our Government those feelings of friendship and regard entertained by the citizens of the United States for us here in the old country.

“*Admiralty, 20th Dec. 1866.*”

“Sir,—I am commanded by my Lords Commissioners of the Admiralty to acquaint you that they have directed Admiral Sir T. Pasley, on the arrival of the three American yachts, which left New York on the 11th inst., to race to Cowes, Isle of Wight, that he is to communicate with their captains or owners, and, in case of need, offer them the assistance of the dockyard.

“I am, Sir, your obedient servant,

“HENRY G. LENNOX.

“*To John Britton, Esq., United States Consul, Southampton.*”

And so we left the subject on Christmas Day, when that order appeared, until we saw in the same paper the following memoranda:—

“*Hurst Castle, Dec. 25.*—The yacht *Henrietta* passed Hurst Castle at 4h. p.m. for Cowes.”

“*Cowes, Dec. 25.*—The *Henrietta* arrived off here at 5h. 40m. p.m. Neither of the other yachts is in sight.”

But even this was not all; for in that of the 26th we find the ocean race concluded by the following intelligence.

“*Cowes, Dec. 26.*—The *Fleetwing* arrived at 2h. a.m. and the *Vesta* at 3h. 30m. a.m. to-day.

“Great excitement prevails here, in consequence of this race and all the yachts arriving so closely together. The three vessels are lying off the Royal Yacht Squadron Clubhouse, by the members of which club the yachtsmen have been most cordially received, especially those belonging to the *Henrietta*. Hundreds of boats with visitors are sailing round the yachts.

“The winning yacht, the *Henrietta*, with Mr. Bennett, jun., the owner, on board, is commanded by Capt. Samuels, formerly of the clipper ship *Dreadnought*. With the exception of the *Dreadnought*, the *Henrietta* made the quickest passage on record. She had no accident and did not lose a rope, and made the entire passage from New

York to Cowes on one tack; the greatest run in one day was 280 miles, her least 113, and that was on the 19th inst., when she laid-to in a heavy storm. The *Henrietta* averaged throughout the passage 218 miles a day.

"The *Fleetwing*, when eight days out, encountered a heavy southerly gale. The sea boarded her at 9h. p.m., and carried away her jib-boom, and washed six men overboard, including two quartermasters, all of whom were lost. This caused a deficiency of hands, and to that and her loss of canvas is attributed her losing the race. The *Fleetwing* was commanded by Capt. Thomas, of the packet ship *New York*. The *Fleetwing* is a beautiful specimen of marine architecture.

The *Vesta* was boarded by Pilot Webb at 8h. 50m. p.m. last night, 10 miles W.S.W. of the Needles, as he supposed, but, owing to the misty weather, he mistook the St. Catherine light for the Needles, and thereby caused the *Vesta* to be last instead of second in the race, as she would otherwise have made the Needles at 9h. 50m. p.m. instead of 12h. 40m. a.m. Wednesday. The *Vesta* met with no accident, and did not lose a rope. The *Vesta's* greatest run in one day was 277, and her least 165 miles.

"According to arrangements between the owners of the three yachts before leaving New York, the winning yacht is open to accept a challenge from any vessel belonging to any yacht club in the world, for any sum, to sail to the Azores and back, and which Mr. Bennett, jun., the owner of the *Henrietta*, is ready to accept.

"The *Henrietta* is exceedingly smart looking, and spreads a large quantity of canvas. The *Henrietta* leaves on Monday for Havre, where she will lay up for the winter, preparing for the Cherbourg Races."

In our next number we shall return to this interesting subject, as we are prevented from continuing our remarks from want of time and space.

CHARTS AND BOOKS PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in December, 1866.—Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

203.—Mediterranean, Ionian Islands, Santa Maura, Ithaca, and Cephalonia Islands, Capt. Mansell, R.N., 1865, (2s. 6d.)

482.—Trinidad Island, West Indies, San Fernando Anchorage, Commander Chimmo, R.N., 1866, (1s. 6d.)

486.—West Indies, Jamaica, Pedro Bank, part of Cuba, and Haiti Islands, various authorities to 1866, (2s. 6d.)

1,251.—Fiji Group, Ngau Island, and Mumbolitha Reef, with view, Capt. Denham, R.N., F.R.S., 1854, (2s. 6d.)

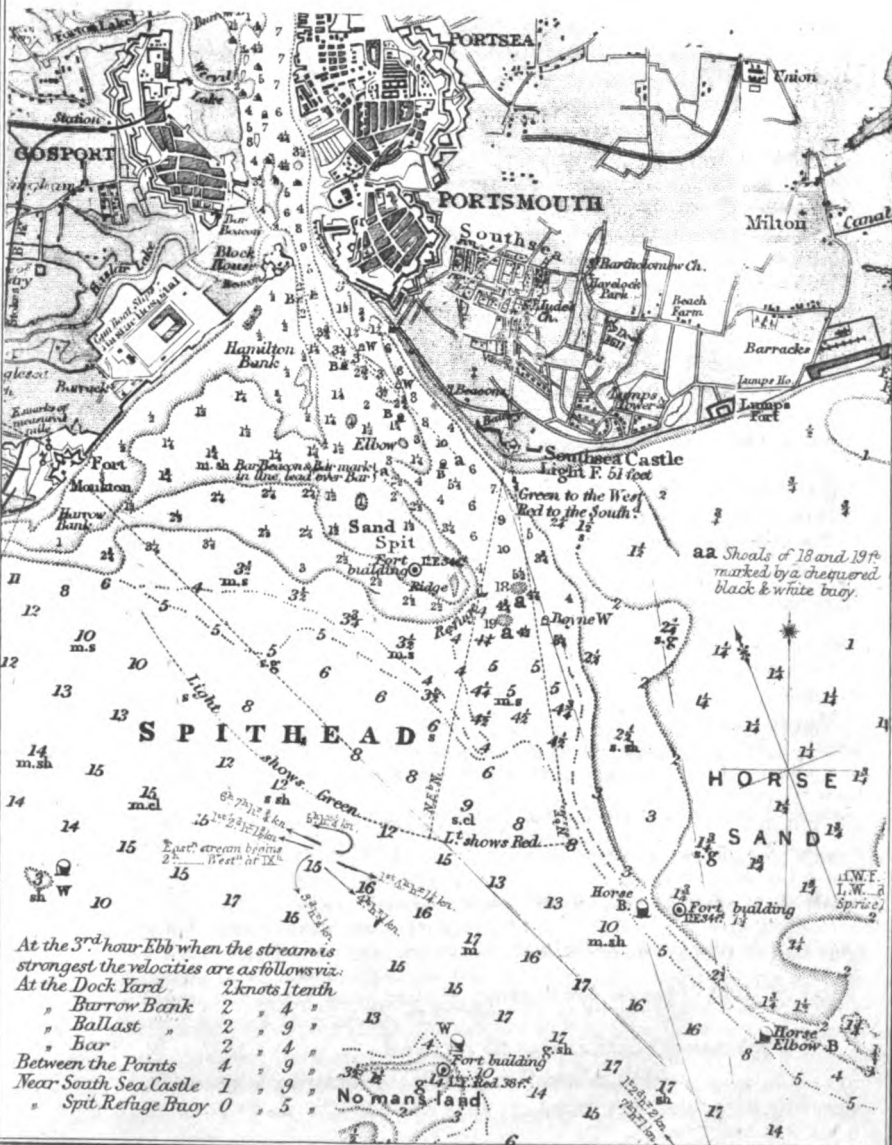
Lighthouse Books for all Stations, corrected and revised to 1867, by Commander Edward Dunsterville, R.N. (from 6d. to 1s. 6d. each.)

EDWARD DUNSTERVILLE, *Commander, R.N.*

Admiralty, Hydrographic Office, 21st December, 1866.

ENTRANCE TO PORTSMOUTH HARBOUR SHEWING THE BAR.

Cables 10 5 0 1 Sea Mile.



At the 3rd hour Ebb when the streams
strongest the velocities are as follows viz.

At the Dock Yard	2 knots	1 tenth
Burrav Bank	2	4
Ballast	2	9
Bar	2	4
Between the Points	4	9
Near South Sea Castle	1	9
Spit Refuge Buoy	0	5

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

FEBRUARY, 1867.

THE OCEAN YACHT RACE,—*By American Yachts.*

Nauticals! Yes, verily, Nauticals,—their star is in the ascendant!

Who is it flying in the weather-beaten, wrinkled face of old Neptune, notwithstanding his winter frowns of dark, ugly looking, banking clouds, thick as any hedge of the Old or New World,—his howling wintry winds hurrying along with rain and mist and blinding snow storms? Who is it dancing over the creamy summits of the jostling waves, and bounding along the rugged surface of the storm-clad main to the time-honoured haven of the amateur sailors in the Garden of England?

'Tis a trio of American yachts in friendly contest for the palm of speed. The race-ground? that wide Atlantic Ocean;—the time? this stormy season of winter;—the starting post? Sandy Hook, of New York, in the United States of America;—the winning post? the old rendezvous of English yachts, Cowes, in the island "Garden of England:"—for yachts they are, so let the yachtsmen's home be the Home for the race. And now, all preliminaries arranged, "*Onward*" is the word, off she goes, and the race is done and won!

Reader, this is no dream; these are no vain words: they are all true, and the race done and won, and lost too, are great facts, startling as they are in these dark days of winter;—therefore all honour to those who have realized them, all honour to their country. Let their names be recorded as forming the van of such summer exploits on a winter's day—as a brilliant example in the annals of yachting unprecedented, unheard of as a noble example for admiring seamen; and especially as having extricated the very name of the yacht from the

category of fine-weather craft—of summer birds, and raised it to the distinguished station of vessels which can even find pleasure in performing deeds of daring against the elements themselves!

Let us now proceed with the records of these things. We learn from the proceedings at a cordial and delicious meeting at Cowes—(for how could it be otherwise than that such worthy souls who set the subject afloat should be well fêted when they came among us)—we learn, as we said, from one of the principal American gentlemen of the occasion, that, early in December, “they had a little dinner in New York”—(how many good things are got up at a little dinner we too know)—“and a match was made to sail across the Atlantic; and one gentleman said he would make it from Sandy Hook to Cowes. Another gentleman immediately asked that his yacht might be let in, and to this they agreed, because they considered her the slowest coach! and the speaker, Mr. Jerome (owner of the *Henrietta*) said he would go with the yacht, never having been in England.”

It was thus considered quite safe to admit the *Henrietta* to the race; who could expect that the slow coach would prove to be the winner, yet so it was.

Thus then originated the race, and the competing vessels were, as we stated in our last number,

The *FLEETWING*, 204 tons, sailed by Capt. Thomas.

The *HENRIETTA*, 199 or 208 tons, sailed by Capt. Samuels.

The *VESTA*, 201 tons, sailed by Capt. Johnson.

The first owned by Mr. J. Osgood; the second, by Mr. Jerome; and the third, by Mr. P. Lorillard,—the stakes, 90,000 dollars, made up by the three owners, making £18,000,—said to be the finest yachts ever built in the United States, and as pretty looking craft as ever sailed on water, and as seaworthy as could be found.

The start took place from New York, on Tuesday, the 11th of December, 1866, at 1h. p.m., which place was all excitement on account of the race. For some days indeed, it is said, the sensation was the more intense from the evenness of the match, the *Vesta* being the favourite; although the other two, even in their appearance, promised to be formidable opponents. But it seems not to have occurred to any one that the owner of the *Henrietta* was on board his yacht. May this circumstance have turned the fortune of the day? However it may be, no one was afraid of carrying sail. But, at all events, the other owners remained at home in New York, leaving their vessels to their respective captains. For our part, we attribute nothing to the circumstance; there were a multitude of other reasons to affect the balance.

We now add the log of the winning yacht, the *Henrietta*, merely observing that, as our sea journals always are kept according to *civil* time—that is, the day commencing at 12h. at midnight—the time must be considered as given in the yacht’s log as twelve hours in advance. Their day beginning at noon makes the time of P.M. on our Tuesday as P.M. of their Wednesday, so that their A.M. of Wednesday

comes after their P.M.—a rather confusing mode of registering events; and the P.M. proceedings will be seen to precede those of A.M. throughout.

Wednesday, Dec. 12th.—We here begin our sea account at 1h. p.m. Wednesday (or civil time 1h. p.m. Tuesday), at which time squared away at a signal given from Yacht Club boat, in company with *Fleetwing* and *Vesta*, from the buoy of the bar. Twenty steamers and tugs escorted us to the lightship, which we were the first yacht to pass at 1h. 39m., the *Fleetwing* bearing N.N.E., the *Vesta* N.N.E. or $\frac{1}{2}$ E. At 2h. 30m. p.m. all canvas set; at 2h. 45m. lost the highlands of Neversink; at 2h. 45m. parted with tug *Phillip*, the *Fleetwing* leaving the same, and the *Vesta* about half a mile ahead. At 6h. p.m. came alongside of and passed *Vesta*, were compelled to shift our course several times to shake her off, she annoying us very much by keeping so close to us. Wind strong and steady. Lost *Vesta* at 8h. p.m. in the dark. Midnight, wind hauled to the westward, with heavy squalls; jibed ship. At 4h. a.m. very heavy squalls with sleet and snow, all canvas set, daybreak dark and lowering, with appearances of northerly wind. Wind freshening, and in the squalls blowing hard. At noon, ship running under mainsail, foresail, jib, and flying jib, light as a bottle and buoyant as a cork. Dark clouds on horizon from North to West, with every prospect of a gale. Distance run 225 miles by observation, 237 by log.

Thursday, Dec. 13th.—Strong breezes and squally weather. At 4h. 15m. passed steamer bound West, supposed to be Cuba. Hoisted racing flag, and steamer showed her colours. This steamer will probably carry first news of the yachts to New York. At 9h. 30m. p.m. passed another steamer bound West. Showed our rockets and blue lights, to which she replied. At 10h. p.m., wind increasing, took in topsails and flying jib. At 12h. double reefed mainsail. At 4h. a.m. set flying jib; heavy snow squalls. At 6h. a.m. weather more settled. Let reefs out of mainsail yard, and stowed it to windward. Noon, set gaff topsails. Wind hauling to eastward. Barometer steady at 30. Experienced a current to W. S.W. of 22 miles. Everything easy and comfortable. Distance run 210 miles by observation, 232 by log.

Friday, Dec. 14th.—Moderate breeze from North to East. At 2h. p.m. set topsails and main topmast staysail; at 8h. p.m. hauled them in again. Squally from 8h. to 4h.; took in and set light sails several times. Midnight, strong breeze and squally, with snow. At 3h. a.m., blowing hard, furled flying jib. At 5h. a.m., moderating, set flying jib. At 6h. a.m. set all eight sails; weather dark and heavy in S.W. Noon, cloudy, weather moderate. Latitude, by an indifferent observation, $42^{\circ} 56'$; longitude, $60^{\circ} 32'$. Distance run 203 miles. Barometer, 29.50.

Saturday, Dec. 15th.—First part of day moderate breeze and cloudy weather. At 7h. p.m., wind freshening, took in fore topsail and main topmast staysail. During night very squally—up and down with topsails and staysails, as weather required. At 6h. a.m., blowing hard,

handed all light sails; day breaks dark and cloudy, with heavy hail and snow squalls. Ship fairly dancing over the water, often at the rate of 13 knots. At 12h. a.m., weather moderate, fine clear sky, passing clouds, wind N.N.E. as usual, sea pretty smooth, everything as trim and comfortable as on shore.

Sunday, Dec. 16th.—These twenty-four hours we have had strong northerly winds, with violent squalls and spits of snow. At 4h. p.m. took in topsails, staysails, and flying jib. At 8h. p.m., blowing heavy, double reefed foresail and mainsail, and took bonnet off the jib. Ship running across the seas and behaving well. At 6h. a.m. passed close under stern of a brig steering to southward under double reefed topsails and reefed foresail. Noon, sky overcast, no observation. Very high sea from northward, weather a little more moderate, let reef out of foresail; barometer, 29.70. The ship is now passing the Grand Banks; we see numbers of divers; everybody on board well and hearty. Distance run 246 miles. Over one-third of the distance across in fifth day out.

Monday, Dec. 17th.—Strong northerly breezes, with heavy squalls. At 2h. p.m. (Sunday) Divine service in cabin, reading of prayers and lessons for the day, and one of Jay's sermons. Midnight, blowing hard, ship running in the trough of the sea, and fairly burying herself. This is yachting in earnest. Double reefed foresail passing snow squalls throughout the night. At 4h. a.m. let reefs out of foresail. Noon, let reef out of mainsail. Weather more moderate. Set the flying jib. Barometer, 30.10. Distance run by observation, 280—the best run yet. Off the Grand Banks, and off soundings, Everything trim and snug.

Tuesday, Dec. 18th.—One week out. At 6h. a.m. we were half-way to Cowes. This is at the rate of a 13 days 4 hours' trip across, being 6 days 14 hours mean time. Day began with strong breeze and heavy cross sea. At 4h. p.m., wind moderating, let reef out of foresail. At midnight, wind increasing, set squaresail, with bonnet off. High seas and heavy wind. Weather very dark and cloudy. At 5h. wind lulled, and hauled to southward and westward. Jibed ship and set whole squaresail and let out all reefs. Noon, dark with very threatening appearances to S.W.; reefed mainsail and furled squaresail and flying jib. No observation. Distance by log 250 miles; ship in perfect order, and all hands in best of spirits and condition.

Wednesday, Dec. 19th.—First part of day fresh gales. At 3h. p.m. double reefed sails, and took bonnet off jib. At 6h. p.m., gale increasing, close reefed sails and furled mainsail. Second part blowing very heavily, with high toppling seas. At 8h. 40m. boarded by very heavy sea, completely burying us, filling the foresail and staving the boat. The little craft fairly staggered and strained. Heaved to under storm main trysail. How hard to lay to in such a race; but few ships in my thirty years' experience could run in the trough of the sea so long as this little plaything did. Well may her owner feel proud of her! At 11h. p.m. the sky cleared, the moon shone out

beautifully for the rest of the night. Third part, moderating. At 5h. a.m. nearly calm, sky became overcast from S.W., with dull lightning from South to West. At 6h. a.m. set single reef, foresail, and jibs. 9h. a.m. freshening wind; ship beginning to step off again. Set square sail. Sea still running very high. During the blow barometer fell from 30·10 to 29·30, at which it stands at noon. Wind is hauling westward, with fair prospect of a second edition of last night's performances from the westward.

Thursday, Dec. 20th.—Throughout these twenty-four hours strong westerly winds and squally weather. 2h. p.m., put bonnet on square sail. 4h. p.m., let reef out of foresail. From 6h. to 8h. very squally, ship going as fast as 14 knots during this period. 1h. a.m., wind canted to N. and W.; jibed ship. Day fine, with alternate showers and sunshine; wind and rain moderating. Barometer rising, 30·05. Distance by log 267 miles, by obs. 260.

Friday, Dec. 21st.—Commences with a stiff breeze and heavy swell from N.W. At 8h. p.m. set mainsail; at 3h. 30m. signalized steamship *Louisiana*, bound West; at 9h. set maintopsail and maintopmast staysail from 4h. to 5h. a.m.; at 6h. took a light breeze from southward; weather clear, warm, and pleasant. Noonday ends with fine summer weather. Passed immense shoal of porpoises. Distance run, 163 by log, 157 by observation. Barometer, 30·45. Everybody on deck, like turtles in the sun.

Saturday, Dec. 22nd.—Throughout these twenty-four hours brisk northerly wind, dark and cloudy weather, with sharp flaws, warm and pleasant. At 7h. a.m. signalized *Bremen* steamer, bound westward. All light sails set, and everything working beautifully. As we near the end of the race the excitement becomes more and more intense, but the wind and weather are all that could be desired. Distance run 252 miles. No good observation. Barometer, 30·40.

Sunday, Dec. 23rd.—Begins with steady wind and smooth sea. Light southerly wind, followed with occasional passing fog-bank. At 3h. p.m. spoke the *Philadelphia*, from Liverpool, bound West; reported light westerly winds, pleasant, sunshiny Sunday. Everybody on deck with camp-stools. Barometer, 30·40.

Monday, Dec. 24th.—First part of day clear and pleasant. Service at 1h. in the cabin; reading of sermon, prayers, and lesson for the day. Middle part beautifully moonlight night; latter part dark, cloudy, and squally weather. Hauled the yacht southward of her course to forestay this wind. 9h. a.m. took in topsails and flying jib. Yacht pitching heavily, in high head sea. Noon, sun observed. Weather threatening. Barometer at 30·35. Distance run 172 miles on soundings. Passed three ships bound West.

Christmas Day, Tuesday, Dec. 25th.—Throughout these twenty-four hours brisk S.W. wind, dark and hazy weather. At 8h. p.m. sighted the Scillys. 10h. p.m. Scillys N. 12 miles. At 2h. 30m. a.m. Lizard N. 8 miles; 8h. 30m. a.m. Start N. 6 miles. At noon Bill of

Portland N. 5 miles. Ends with fresh S.W. wind, everything set, and yacht going her best. This closes the sea day. 1h. p.m. took pilot off Portland Bill. 3h. 45m. passed the Needles. 5h. 32m. anchored in Cowes Roads.

The voyage was made by the *Henrietta* in 13 days 22 hours and 45 minutes.

One of the points on which it will be allowed the winning of the race to depend very much is close attention to the state of the wind in strength at all times of the twenty-four hours, and this is plainly perceptible in the foregoing. For instance, taking in and soon again setting flying jib, as on the 13th and 14th; and on the 15th we have "up and down with topsails and staysails," and so on throughout the run; by which attention much distance was no doubt gained, and nothing lost. It is said the *Henrietta* made a straight course on the chart; from which it would seem that she cared not for the Great Circle, or nearest distance; and although compelled once to lay to for ten hours on the 19th of December, from this she was relieved by a calm, and started off again scampering over the seas like a "little plaything" as she is. But all went well on board the *Henrietta*; for, as we express it, she did not lose sail or spar, "nor strain a rope-yarn," although they no doubt must have had full many a good tug on their strength of resistance.

How fared the other yachts? We know little of their tracks, but believe they were North of the *Henrietta's*. We are told the *Vesta* met with no accident; but, unfortunately, she was made later in her arrival by several hours than the *Henrietta*, owing to her pilot mistaking St. Catherine's Light for the Needles, causing her to be the last in arriving, instead of second. She was boarded by him 10 miles West of the Needles at 8h. 50m. p.m. (our time) on December 25th, and losing about three hours.

The *Fleetwing*, however, was the sufferer. It appears that on the eighth day of the passage she shipped a heavy sea in a southerly gale, in which she lay to for eight hours, by which eight men were washed overboard by the sea, which carried away her jib-boom, two only being recovered. The yacht hove to immediately, but nothing of the men could be seen, thus crippling her powers sadly of trimming sails every inch of the voyage. And we learn from this incident the value of none of the yachts having anything but an excessively low bulwark, so that the decks being swept by seas, there is nothing for those on board to hold on by. Surely two or three strong stanchions amidships, with a life-line from one to the other, might be adopted for safety in such craft. A low bulwark is about as bad as no bulwark at all. It is said the crew who were lost were not up to the tricks of these vessels, and were taken by surprise. She not only thus lost hands, but the advantages of looking to her canvas in the course of the race. She is considered a first-rate specimen of naval architecture.

The different speed of the twenty-four hours of each vessel is thus stated :—

	Gr. R.	Lt. R.	Av. R.	Arrival.
<i>Fleetwing</i>	. 288	. —	. —	. 26th, 2h. 0m. a.m.
<i>Vesta</i>	. 277	. 165	. —	. 26th, 3h. 30m. a.m.
<i>Henrietta</i>	. 280	. 118*	. 218	. 25th, 5h. 40m. p.m.

And we have endeavoured to make out some relative positions of the three on several particular days of the race; but the accounts given do not enable us to do so. But it appears that from 31° W. to the Scilly Isles, the *Henrietta* and *Vesta* ran nearly neck and neck, the *Vesta's* position being about 30 miles North, the *Fleetwing* keeping her position to the southward, but dropping astern. From hence the *Henrietta* took the lead, and won easily, all the vessels taking the Needles passage.

In honour of the arrival of the yachts a salute of eleven guns was fired at the Royal Yacht Club on the 26th, which the winning yacht, the *Henrietta*, acknowledged by manning yards and dipping her colours in true man-of-war fashion; and Capt. Bennett visited her Majesty's ship *Hector*, and returned thanks for the offer by the Government of the facilities of the dockyard for any needful assistance, which however was not required. We recorded this in our last; but good actions are worth repeating, and though the assistance was not needed, here is the offer :—

“Admiralty, 20th Dec. 1866.

“Sir,—I am commanded by my Lords Commissioners of the Admiralty to acquaint you that they have directed Admiral Sir T. Pasley, on the arrival of the three American yachts, which left New York on the 11th inst., to race to Cowes, Isle of Wight, that he is to communicate with their captains or owners, and, in case of need, offer them the assistance of the dockyard.

“I am, Sir, your obedient servant,

“HENRY G. LENNOX.

“To John Britton, Esq., United States Consul, Southampton.”

The secretary of the Royal Yacht Club, Capt. Brown, also tendered the hospitalities of the clubhouse immediately on the arrival of the yachts, by which they were readily accepted.

Some particulars of the different yachts are stated; by which it appears that the *Henrietta* is a fine, handsome craft, with flowing lines and a graceful rounded stern, having been built for speed, and gains favour on her first appearance. She is named after Mrs. Gordon Bennett, of New York; built by Mr. H. Steers, of that place; and is considered one of the finest specimens of naval architecture in the world. She has much sheer, and runs perfectly dry in a seaway. She is a handsome, commodious vessel, admirably fitted; the sleeping apartments being elegantly furnished, and the entire arrangements comfortable and compact.

* On the 19th, having to lay to in a storm.

The *Fleetwing* is considered a splendid craft, her failure being attributed, not to any inferior sailing, but to the misfortune of losing her jib-boom, her six men, and her stayplate. She is two years old, and was built by Mr. Vandersan, of New York, who sailed in her. The *Fleetwing's* fittings exhibit much elegance and good taste. Her saloon is draped with crimson and gold-coloured damask, the cushions of silk velvet and gold embroidery, with "Fleetwing" in the centre. The sides of it are panelled and moulded, being divided by small columns, and painted dead white and mauve, relieved by gilt.

The *Vesta* is a smaller yacht.

It may be readily supposed that the beauties of these interesting vessels have formed great attraction to visitors since their arrival, who have been most courteously received.

The commodore of the yacht squadron to which these vessels belong, Mr. W. McVickar, came to England in the *Scotia*, as umpire of the race. He fortunately arrived only a few hours before the *Henrietta*, although the yachtsmen say they had the laugh of them by arriving before the steamer.

So unparalleled an event as a winter race between three first-rate yachts of our relatives of the United States across an ocean some thousands of miles wide, and enduring nearly a fortnight, throughout every minute of which the energies of officers and crews were incessantly taxed as at any special time of it,—so remarkable and creditable an event could not come off—Englishmen would not be themselves—unless they signified their admiration of the feat by inviting the principals to share the festivities which such an occasion could not but occasion. And accordingly a gathering of congenial souls met at Cowes, where those warm feelings of brotherly esteem and regard were felt and expressed that spurn the coldness of the world and state politics. How truly was it said by the chairman of the gathering at Cowes, on the evening of the 29th of December, that "Patriotism might convert even yachts into an instrument for the benefit and the good of a country,—the winning yacht (the *Henrietta*), long before she came to Cowes, did good and gallant service to her country in the late American war." No doubt a feeling this which led Lord Yarborough, in the *Falcon* of former days, to rejoice in carrying despatches for the Admiralty.

But there were sentiments expressed on the occasion of this meeting that we are anxious to preserve. "The Armies and the Navies of the United States and Great Britain, might their union continue," was acknowledged by Colonel Taylor, of the United States army, in most courteous terms, which elicited tremendous cheering. It was much more pleasant, he said, for them (of the United States) to think they had remembered the army and navy of the United States in connection with the army and navy of Great Britain. England and America—mother and child, as they had had it exemplified on their card of invitation that evening—the flag of the United States of America and the flag of Great Britain—how can they be separated? The veriest tyro would feel it an honour to reply to that toast. The

most brilliant example of everything that was right, proper, good, and virtuous, had been set them by the mother country, and they tried to follow in her path. If our steps had been onward, they had tried to emulate them; for we had taught them to do so. And if in years gone by our flags had been joined together and our hands crossed, let us hope, let us wish, that our dearest and sweetest dream might be to see that in years to come it would be America and England still,—England and America joined hand in hand, with stars around their borders revolving like satellites. And let him say to them in all sincerity, “Whom God has joined together, let no man put asunder.” No wonder the officer who uttered such sentiments was met by repeated and tremendous applause.

To General Seymour, who spoke on the part of the British army, was assigned the honour of acknowledging, on the part of her Majesty, the pleasing satisfaction which she had experienced on the occasion of this race. The General said, after returning thanks for the army, a much more agreeable duty yet remained for him to discharge, and that was to assure those gentlemen that her Majesty the Queen, who was now at Osborne, took the greatest interest in the match; and when it was proposed by a gentleman on the previous day that the yachts should come before Osborne, her Majesty was most delighted to accept the offer. Commodore McVickar, with great kindness, sent the yachts down off Osborne that morning; and her Majesty had instructed him to say that she derived the greatest satisfaction in seeing them under way before her marine palace. He would conclude by giving them “The hope that England and America might never be divided.”

Mr. Jerome, the stakeholder, who had come over in the *Henrietta*, jocosely remarked that he had predicted in New York that they would get a cordial reception at Cowes, and he was glad to find that, though his idea was not shared in by others, he was right.

No doubt Mr. Jerome was perfectly right,—how could it be otherwise!—and those who doubted it know long before this that their estimation of the English character was a very imperfect one.

Such sentiments as were expressed at this meeting it is a very pleasant task to record. But we have yet to add a few more to our record.

The Chairman (who by the way we should have already named as Sir John Simeon, Bart., the Member of Parliament for the Isle of Wight,) proposed with all his heart “Peace and prosperity to the United States of America and Great Britain,” by which was meant to symbolize an eternal and perpetual union between the two countries; in fact, it seemed to him that the peace and prosperity of the one in the natural order of things must affect the peace and prosperity of the other. He could not conceive that any true friend to his own country in either hemisphere could doubt about drinking the toast. He would say much more than that; for he believed that any man looking forward into the future—any man looking to the destiny of the human race—ought to drink this toast as heartily and as earnestly as he gave

it; for he considered that in drinking to "The union of Great Britain and the United States," they were in reality giving the toast of freedom, of intellectual progress, and of the civilization of the world. Clouds had occasionally risen to disturb the serenity of the union; but he believed such clouds would be of a temporary character. He thought that the relations between countries so closely joined in blood and origin, and having all the advantages of a common language and a common literature, were too close to be judged of by ordinary political opinions, or regarded as of a merely political nature; but that the union resembled something of a nearer and more domestic kind.

We do not repeat the approving cheers by which this was accompanied; suffice it to say, they, as they should do, attended the proceedings throughout.

This called forth from Mr. Jerome a quaint account of the transaction, which is highly characteristic of our Atlantic cousins. After expressing his unusual embarrassment and the disadvantage of having no written speech ready! and finding that no apology even was necessary for coming to Cowes in the month of December, which he had discovered was just the month to come in, he continued:—"Hereafter I shall advise all my American friends who want to go to Europe to go in a yacht in the month of December, and arrive at Cowes. They will be perfectly content to stop here. This little, but hospitable, town is all that I have seen of Merrie England; but I would be satisfied to go home without seeing any more. (Cries of 'Stay with us.') Already I begin to feel like a naturalized citizen,—so great has been your kindness, so overwhelming your generosity. I am, indeed, at home here. Let me join you, Mr. Chairman, in welcoming my young American friends to this yachting centre. I do not particularly refer to the other yachting centre—Mr. Centre, of New York, the inventor of wire rigging—although I might be understood to do so. I tell you seriously, my friends, that we did not, we could not, anticipate such a reception as this. Our yacht race was made up at a dinner. Two gentlemen arranged it; and one of them, as if to outdo the other, said, 'Let us make it from Sandy Hook to Cowes.' 'That suits me' was the reply. 'Let us make the stakes thirty thousand dollars a-side.' 'That suits me.' 'Let us sail in the stormy month of December.' 'That suits me.' Then another gentleman—a young gentleman, a modest gentleman—Capt. Bennett, now present—asked if they would let his yacht into the match. They were very willing to do so, as she was considered decidedly the slowest boat. This slowest boat has won the race, gentlemen. I then proposed to make the match 'play or pay,' and that decided the affair. You know the rest. Here we are, and very glad we are to be here. In conclusion, let me say, let us bring our yachts and racehorses into friendly competition, meet together in this social way, and keep aloof from all the politicians, and there can never be any difficulty between England and America. With our flags hanging together, as we see

them to-night, our national mottoes side by side, and our hands united in the cordial grasp of a sincere friendship, the two countries will go on together in the career of glory, the envy, the admiration, and the rulers of the world."

The approvals were frequent, loud, and long, as might be expected.

And "The health of the New York Yacht Club" was well acknowledged by Commodore McVickar, who, in acknowledging the sentiments, said there were a few incidents connected with the formation of the match which, perhaps, might be of interest. Mr. Jerome had mentioned some of the circumstances under which the race was made; but he might tell them that when the terms were adjusted the destination of the yachts was not named, but silently and unanimously it was felt to be Cowes. By the kindness they had received since their arrival, they felt, and it was an established fact that must be felt at home, that when they came here they did not come as strangers to a strange land. And were a doubt to linger in his mind, he had only to look at the mottoes which graced that room to feel that there could be no mistake. When he saw "God bless the Queen and the President"—which he was happy to say every American heart would respond to,—and when he saw "Separated, not divided," he had no question of the fact; and if there was one who doubted this, he would point to the other side, and say "Evil be to him that evil thinks." Remembering where they came from and what they were, "Welcome to Old England" was indeed welcome home.

No doubt Cowes was the proper place sure to have a yachtsman or two, although even that might have been doubted. In conclusion,

The Chairman said they were met there to celebrate one of the *most daring and dashing exploits on record*, and he hoped they would take a lesson from what they saw before them. He did not know that we had anything to learn in the way of yacht-building; but this we had to learn, how patriotism might convert even yachts into an instrument for the benefit and for the good of this country. The winning yacht, the *Henrietta*, long before she came to Cowes, did good and gallant service to her country in the late American war. To be second or third in the match was only one degree less grand or noble than to be first; but still he had seen it published that when Mr. Bennett left New York he was hailed with the cry of "Success to the man who goes in his own boat," and he could only say that they were delighted to see the man who manned his own boat present that evening. He gave them "James Gordon Bennett, Esq., the winner of the ocean race, and our American guests."

Mr. Bennett seemed to be one of those gentlemen who hardly expected to find any one at Cowes, nor to be treated as they had been; but which he very handsomely acknowledged, as also did the captains of all the yachts, for the reception they had met with. And these about concluded one of the most remarkable assemblages, con-

sidering its object, that had ever taken place at the emporium of British yachting places—Cowes.

There is a well-merited tribute to the only melancholy part of the subject, that belongs, even with the matter which precedes it, to its history.

The curiosity respecting the race across the Atlantic appears to increase, and a large number of ladies have visited the yachts. They look low in the water, owing chiefly to the absence of bulwarks; but on approaching them, their lines appear very beautiful. When their canvas was spread out to dry it was a grand sight. Old Isle of Wight salts declare that there are no sailmakers like the Americans, and that in the build and rig of yachts, English craft are adapted to sail to leeward, and Yankee craft to sail to windward.

The *Vesta* will, it is expected, go to Southampton to lay up, and probably the *Fleetwing* also: the crew of the latter are about to be paid off. The *Henrietta* will be off to France. The inhabitants of Yarmouth, near the Needles, had a grand sight on Christmas Day, as they saw the winning yacht flying through the Solent. A great crowd of persons had been drawn out by the scarcely credible report that one of the American racing yachts had crossed the Atlantic in thirteen days, and was then in sight. The owner and friends of the *Henrietta* left New York on the 11th of December, and arrived at Cowes in time to spend a portion of Christmas Day at the residence of Mr. White, who has a world-wide fame as a ship and yacht builder. The owners and friends of the racing yachts were all specially invited to the county of Hants opening ball, at which the *élite* of the county were present. The six poor fellows of the *Fleetwing* who perished in the sea were William Nelson, a Norwegian seaman; Walter Brown, who hailed from Boston; and Edmund Kelley, George May, C. H. Hazelton, and David J. Wood, who hailed from New York. Hazelton and Wood were quartermasters.

It is stated that Lord Lennox invited Mr. Bennett and the Commodore of the New York Yacht Club to meet the Duke of Edinburgh at dinner on the 28th of December. Mr. Bennett having announced that he held himself in readiness to accept any challenge from English yachtsmen, the Duke of Edinburgh agreed to sail him round the Isle of Wight in August next for £100, the Duke to sail in his own yacht.

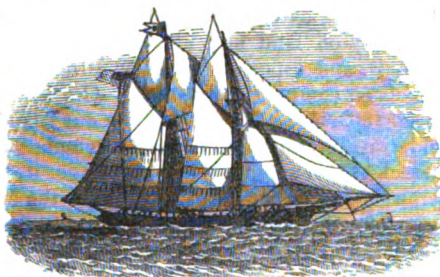
Before our narrative of this event is published, the owners of the American yachts and their officers will have been the guests of the Southampton and Mersey Clubs; and we have only to add that we trust this great occasion of the race across the Atlantic will turn out to be the worthy inauguration of similar contentions, and ever attended with that cordial interchange of friendship in word and deed which, if we are not mistaken, will always tend to cement the friendship of the two nations.

We may conclude this notice of one of the most gratifying events that we have ever recorded with the following extract relating to the

interview which the commodore of the American yachts had with her Majesty the Queen at her marine residence at Osborne:—

“On the occasion of his presentation to the Queen on Sunday, the 30th of December, her Majesty expressed to Commodore McVickar, of the New York Yacht Squadron, her thanks for the opportunity afforded her of seeing the American yachts under sail, and said she sincerely regretted the loss of the men belonging to the *Fleetwing*. Her Majesty also said she hoped the Americans would return to their country with pleasurable recollections of their visit to England, and of their reception in this country. Commodore McVickar, in reply, said that the most pleasurable and gratifying recollection of their visit to Great Britain would be the honour conferred upon the Americans, through him as their representative, of being presented to the Queen of England. At the conclusion of the interview, her Majesty directed Sir John Cowell to show the commodore over Osborne House, the home farm, stables, and the grounds surrounding her marine residence.”

We annex a sketch of the *Henrietta*, in which our artist has well represented the general features of the vessel. But our object is to show the enormous spread of canvas these vessels are capable of setting, although this cannot show the huge square sail they set on their foremast when running free or before the wind. We find it stated by the *Southampton Times* that the builder of the *Henrietta* (Mr. Steers) is an Englishman. His father was a shipwright in Plymouth Dockyard, and his emigration to America was brought about under circumstances somewhat peculiar. A Mr. Thomas was employed as an officer in the above-named dockyard. An American frigate came into Plymouth Sound, and the captain and chief officer lodged at Mr. Thomas's house. He (Mr. Thomas) was a clever draughtsman and shipwright. The Americans were quick to discover his talent. The result was that he was engaged with a Mr. Merritt, also an officer of Plymouth Dockyard, to proceed to America, where they were engaged as master shipwrights. Knowing the ability of Mr. Steers, Mr. Thomas wrote to England, and engaged him to go out. His (Mr. Steers') son commenced yacht building on his own account, and constructed many splendid vessels.



And in concluding our notice of this interesting subject, we may add that our neighbours across the Channel (if report be true) are in earnest emulating, if not surpassing, the liberal views of our clubs in

these matters; for it is stated that the yacht club of La Rochelle has just awarded a medal of honour to Mr. Bennett, owner of the *Henrietta*. Several other similar societies in France are about to confer a like distinction.

If this be true, we say *Vive la belle France!*

THE LATE NASSAU HURRICANE.

This visitation is well entitled to be called the Nassau Hurricane, since it appears that the central calm passed over that place, and that it suffered, perhaps, more than any other place in the West Indies. As, however, we have only seen the few accounts that have appeared in the public prints (although no doubt extensive official reports have been received), we preserve from them the following notice of one of the most disastrous hurricanes on record.

We are informed that Governor Rawson, in a long account to Lord Carnarvon, dated October 17th, has stated that "the destruction of property on land and at sea has been very great throughout all the islands, and especially in New Providence. Happily, the loss of life has been comparatively small. On this island only three deaths have been reported. On some of the out islands it has been greater. Considering the number of vessels, colonial and foreign, which have been wrecked throughout the archipelago, it is surprising how few of the crews have been lost. I estimate the number, including five crews, two of colonial and three of foreign vessels, at between sixty and seventy persons."

But we turn to Commander A. J. Chatfield's report of October 9th, in command of her Majesty's ship *Nimble*, for a progressive account, noticing by the way that this ship was blown on shore, as appears in his letter to Commodore McClintock at Jamaica. The following are the remarks of this intelligent officer at Nassau, of New Providence, relative to this phenomenon, which occurred on the 1st and 2nd of October last.

"The hurricane commenced on the 1st of October, about 10h. a.m., although the great fury was from 1h. p.m. until 7h. p.m. from N.N.E. and N., and from 9h. p.m. until 2h. a.m. from S., after which it gradually went down. From 7h. 20m. p.m. until 8h. 50m. p.m. on the 1st of October was a dead calm, when the vortex passed over the harbour, the barometer falling to 27.70. There was no indication of the approaching storm until late on Sunday night, when the barometer began to fall. Sunday was a fine clear day, with a fresh N.E. breeze; no banking up of the horizon until sunset, or lightning; at midnight, however, I thought the weather looked threatening, and at daylight

I struck lower yards and topmasts, got up steam, and secured boats and guns. It was impossible to give more cable, on account of the narrowness of the harbour (without the wind was from East or West). I had five shackles out to the N.E., and four shackles to the westward, in the best berth in the harbour, off the commissariat wharf.

"On Monday morning, October 1st, it was blowing a fresh gale, N.N.E., at low water, the ship's stern tailed on the sand, but she swung to the flood tide as the tide rose, and rode the hurricane out until 1h. p.m., when a gust of extreme fury caught the ship, she being then broadside to the wind, and drove her up on the beach. She fell over in shore. The force of the wind was so great that it was impossible to face it, and the blinding rain and spray, together with dense masses of clouds which appeared to touch the earth, prevented us seeing anything.

"The fury of the wind was indescribable, and the roaring of the sea and shrieking of the wind fearful.

"During the vortex I tried to secure the ship from blowing off, when I feared she must have been carried over the bar, and probably have become a total wreck, as two other vessels did—a steamer and a schooner; fortunately, we were only blown over on our other bilge, and remained fast. After passing a fearful night the long wished for daylight appeared and more moderate weather, though still too much wind and sea to do anything.

"The scene on shore was terrible. The town in ruins; not a single vessel (of some hundreds the day before in the harbour) remained; government house, barracks, hospital, and officers' quarters unroofed and partially blown down; all the stores on the beach destroyed; wharves and commissariat and dockyard piers down; all the sheds and outbuildings in both places destroyed.

"Dockyard wall blown down in two places, and nearly all the houses in the town partially or wholly unroofed; public buildings unroofed and four chapels blown down (one a new stone one). All the trees are either blown down or stripped of their leaves and branches. The salt water has blown over the island, and all the wells are salt as far as the Blue Hills, four miles inland. The top of the lighthouse is blown in and the light destroyed; a temporary light is shown.

"The accounts from the other islands are very dreadful: great loss of life and property. Most of them being low, the sea made a clear breach over the settlements and completely destroyed them, and the inhabitants are suffering from want of provisions; indeed, the suffering of the poorer classes must be dreadful; their gardens and provision grounds and huts are all destroyed, and hundreds have no shelter. Providentially, the loss of life at Nassau has not been great, only three, although numerous accidents have taken place. The number drowned in the harbour is not known. The lights on Abaco are damaged, and temporary ones (about the brightness of a ship's light) shown; Stirrup Cay is most damaged; Great Isaac's and Gun Cay lights have not suffered.

“The track of the hurricane’s centre, as well as I can at present find out, was as follows :

Name.	Time of Commencement.	Time of Ending.	Direction of Wind.	Lowest Barometer.
Turks Island . . .	not	known		
Fortune Island . . .	not	known		
Long Island . . .	not	known		
Great Inagua . . .	not	known		
Nassau	Oct. 1, 10h. a.m.	Oct. 2, 6h. a.m. {	N.N.E., N., S. }	} 27·7
Abaco	Oct. 2	Oct. 3		
Great Turtle Cay . .	Oct. 2	Oct. 3		

“It then turned to the northward and N.E. (deflected by Florida), and on the 3rd and 4th it passed an American man-of-war, the *Tahoma*, about 40 miles West, she being in lat. 33° N. long. 72° E.

“I calculate it passed at a rate of 15 to 20 miles an hour over the Bahamas, and Capt. Gibson, of the *Tahoma*, at the rate of 13 miles an hour. By him the vortex was not more than from 10 to 18 miles wide, and the greatest extent of the storm 100 to 180 miles over the Bahamas. A small fore and aft schooner, in the bottom of the tongue of the ocean, had a hard gale,—nothing more.

“Wrecks are reported on all sides by the small boats and distressed vessels that have arrived since the storm. I am unable to obtain as yet any trustworthy information from the out islands, but will endeavour to do so.

“A. J. CHATFIELD, *Commander and Senior Officer.*

“*Her Majesty’s ship Nimble, Nassau, Oct. 9th.*”

The foregoing is so far satisfactory, as showing that the hurricane took the most commonly usual course of these phenomena in passing up the Florida Channel, and the observations of the American officer, Capt. Gibson, are important, as giving the only account we have seen of the dimensions of the hurricane. So much for the general character of this phenomenon. Its effects appear to have been most disastrous ; but of these, the stranding of her Majesty’s ship *Nimble* is related by her commander, which account, with the foregoing, has been communicated by the Admiralty to the *Daily News*.

“*H.M.S. Nimble, New Providence, Oct. 9th.*

“Sir,—I regret to have to report that, in a terrific hurricane on the 1st and 2nd of October, her Majesty’s ship *Nimble* was blown on shore in the harbour of Nassau, abreast the naval yard, on a sandy bottom, in 6½ feet (high water), neap tides.

“The ship has not received the slightest damage, and is not making any water. I have cleared everything out of her, except the pivot-

gun and the engines, including 70 tons of coal. Everything has been placed under cover in the naval yard.

"On account of all the lighters and vessels (without exception) having been blown up on the beach, and most of them destroyed, I could only succeed in getting a large iron lighter, which was useless in the heavy swell, and I had to land everything in our own cutter. A fresh N.E. gale has been blowing ever since the hurricane, which has brought a very heavy swell in and made the clearing out a matter of great difficulty and danger. The cutter, our only large boat, swamped alongside full of coals, and was with great difficulty recovered.

"I wish to recommend to your notice the two officers named in the margin (Lieutenant J. G. Jones and Mr. J. Hamilton, gunner), whose indefatigable exertions during the hurricane and in clearing the ship have been most praiseworthy. I beg also to report that the conduct of the ship's company generally has been extremely good. The men have had to work up to their middle in water in a surf, landing coals and stores, for four days, and, I am happy to add, without any sickness or accident.

"I have now built a pier out close to the ship. If we get a high tide, I think the ship will float sufficiently to haul her off at the springs on Wednesday, the 10th inst. I have two anchors (one from the bow and stern) laid out, and a very heavy purchase on the chains; indeed, I parted the bower chain with it on the 8th without moving the ship.

"With the exception of the three trysails, which were blown out of the gaskets, though the gaffs were lowered, no damage has been done aloft. The rigging is a good deal chafed, and running gear carried away, but that can easily be replaced.

"The boats are all saved, though much blown about during the storm.

"I forward this by the mail to the Havana. I have not yet succeeded in moving the ship, the N.E. winds preventing the tide rising to its usual height.

"I have procured a hydraulic press of 100 tons, and am securing it, to try and lift the bows. The *Tahoma* was unable to give me any assistance, from her steam power being very small.

"I think a powerful steamer could easily tow us off now we are light.

"In case of the ship receiving any damage, there is a patent slip will take us (the charge is 50c. per ton). I shall await your permission to use it. I have incurred no expense, except the hire of a lighter and purchase blocks.

"I have, &c.,

"A. J. CHATFIELD, *Commander and Senior Officer.*

"Commodore Sir L. M^cClintock, Jamaica."

So disastrous a visitation seems never to have occurred at Nassau before, nor one that has been attended with so much loss of property,
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as will appear by the further extract we append from the Governor's despatch before mentioned, in which he says:—

“Of the two steam-tugs, one had foundered in the harbour; the other, the *General Clinch*, respecting which I have had occasion to write, as the last of the three vessels which the Government of the United States claimed as the property of the late Confederate Government, had been dashed into countless pieces against the public wharf, after having crushed and inflicted a similar fate upon a colonial schooner. Fortunately, the number of foreign vessels in the harbour was at the time small. But of colonial vessels and boats the number was great. Of the craft in the harbour, 92 have been totally destroyed, 97 have been badly injured, and 43 have been slightly injured. Upon these vessels a considerable portion of the population depended for their income, derived from fishing, sponging, and wrecking, and for the daily supplies of fish and of market produce brought from the out islands.

“On shore the city exhibited a scene scarcely less distressing. It would hardly have suffered so much from a bombardment. The streets were choked with *débris* of fallen and unroofed houses, and with prostrate trees.

“I enclose an abstract of the information obtained by the police as to the extent of injury done to house property throughout the island. It is necessarily imperfect to some extent, and it does not include the injuries done to out-houses, fences, orchards, gardens, &c., which add considerably to the losses of the population. But your lordship will be able to form from it some idea of the calamity which has befallen this island, containing perhaps 12,000 or 13,000 inhabitants, of whom the greater portion reside in the city and its suburbs. 617 houses destroyed, 609 houses injured; 17 warehouses destroyed, 18 warehouses injured; 12 shops destroyed, 17 shops injured; 5 schoolhouses destroyed, 2 schoolhouses injured; 5 churches and chapels destroyed, 3 churches and chapels injured; 1 theatre destroyed; 1,034 persons made houseless.

“The accounts from the out islands are as yet hurried and incomplete; but we know that every one, without exception, was visited by the storm, and that on all greater or less injury has been inflicted. I regret to say that almost all have been severely injured.

“I annex such further information as I have been able to collect with respect to the ravages of the storm:—1. An abstract of the injuries done to the public buildings in New Providence, with the civil engineer's estimate of the cost of repairs, amounting, with the injuries done to roads and streets, not included in the estimate, to about £9000. 2. An abstract of the injuries done at the several lighthouse stations. 3. An abstract of the injuries done to the several public houses, as far as known. 4. An abstract of the injuries done to buildings belonging to the Church of England (exclusive of those belonging to the Colonial Government) in the several islands, estimated by the bishop of the diocese at £5000. 5. An abstract and detailed return of wrecks and casualties to foreign-going vessels, as far as known.

“Capt. Chatfield, of her Majesty’s ship *Nimble*, is preparing a chart of the course of the hurricane, of which, and of his report thereon, I hope to be able to forward a copy by the next mail. At present I will only state that it passed over or near the Turks Islands, followed the edge of the Great Bahama Bank, sweeping all the inhabited islands in that direction; continued its north-westerly course after crossing New Providence; was felt at Key West, and in Chesapeake Bay, on the coast of the United States; curved to the northward and eastward with the Gulf Stream; and was felt in its full force halfway between Cape Hatteras and Bermuda,—the usual course of hurricanes in these seas.”

After stating what measures had been adopted to meet the emergency, Governor Rawson says:—

“I anticipate being under the necessity of raising a loan of moderate amount, but I hope to avoid recourse to the English market. I may, perhaps, be able to avail myself of the opportunity of obtaining a moderate circulation of government notes, which will be a great convenience to the public, under arrangements which, I trust, will be found unobjectionable, and will be submitted for approval before adoption.”

The *Nassau Guardian* sums up these losses thus:—

“We are sorry to learn that of the shipping in port, during the recent hurricane, 93 vessels and boats were destroyed, 97 seriously damaged, and 41 slightly injured,—total, 231. The schooner *C. J. Marshall*, at Nassau, is a total wreck. The captain (Evans) and crew saved themselves with difficulty. In Nassau, there are 617 dwelling-houses destroyed and 609 damaged, 5 places of worship destroyed and 3 damaged, 17 warehouses destroyed, 1 theatre destroyed, and 1,034 persons rendered houseless. In the out islands, from Abaco to Mayaguana, the destruction of property was severe in proportion, and a number of lives were lost by shipwreck and otherwise.”

At Turks Island the effects appear to have been so disastrous as to induce the Lieutenant-Governor to send an appeal for assistance to all the British possessions in the West India islands and North American provinces. We find this appeal in a Charlotte Town paper of Prince Edward Island, and preserve it, as showing the effects of the hurricane at Turks Island.

“*Appeal on behalf of Sufferers by Hurricane.*”

“*President Moir to Lieutenant-Governor Dundas.*”

“*Grand Turk, Oct. 8th, 1866.*”

“Sir,—Having been requested by the merchants and other inhabitants of this colony, I have the honour to forward to your excellency a printed copy of an appeal, which they have made to the Governments and Peoples, as well as to the Chambers of Commerce, in the several West India islands and North American provinces, on behalf of the

destitute poor and others in that colony, many of whom lost everything of which they were possessed, and all of whom suffered more or less severely from the terrific hurricane with which we were visited on Sunday, the 30th of September last.

"Knowing well the warm sympathy with distress ever evinced by fellow-colonists, many of whom have been similarly affected, I feel sure that this appeal will not be made in vain, especially if countenanced by your excellency's kind support.

"Our soil being unfit for the cultivation of any food, except that of Guinea corn and sweet potatoes, all of which must have been swept from the lower Caicos, from which I have not yet heard, our claimants' wants are,—1. Food of all kinds; 2. Lumber and shingles of all kinds; 3. Ready-made and cast-off clothing for the poor and needy.

"I need not assure your excellency that, so far as the resources of the Government will permit, I shall be glad to purchase any of the above which may be sent for sale; and I know your excellency will excuse me in reminding you that, unless some vessel soon arrive, we may speedily be in a worse case than at present.

"Time will not permit me to do more than to enclose a copy of a sheet* which issued from our local press on Saturday, giving a very accurate account of the damage done by the hurricane, so far as it has yet reached me.

"I have the honour to be, sir,

"Your excellency's most obedient, humble servant,

"ALEX. W. MOIR.

"To his Excellency the Lieutenant-Governor,
Prince Edward Island."

"Appeal to the Governments and Peoples of the North American Provinces and British West India Islands.

"Minutes of proceedings of a meeting of merchants and others of the Turks and Caicos Islands, held at the Consulate of the United States, at Grand Turk, Turks Island, the 6th day of October, 1866.

"Whereas it has pleased Divine Providence to visit these islands with one of the most terrific hurricanes ever known here, and which occurred on the 30th of September last, the effects of which have been ruinous to the inhabitants and trade of this colony, sweeping away in its fury about twelve hundred thousand bushels of salt,—the staple of these islands; damaging materially the salt-pans; destroying the machinery and other implements used in the manufacture of salt; demolishing about eight hundred houses, with their contents, whereby hundreds of persons are left homeless and destitute, compelling them to seek refuge in the places of worship and cellars of such houses as are left standing, their chief sustenance and clothing being provided by the Government, which has only at its command about fifteen days' provisions—the only supply in the islands,—

"It is unanimously resolved to appeal to the generous sympathy of

* This we have not as yet seen.

the Chambers of Commerce of the principal cities of the said British provinces and to the Governments and Peoples of the West India islands for such aid, in this our severe distress, as they in their benevolence may deem proper to render us.

“Secondly. That Messrs. John T. Wainwright and Co., of Halifax, N.S.; Lewis P. Churchill, Esq., Ragged Islands, N.S.; Messrs. Ryerson, Moses, and Co., of Yarmouth, N.S.; Messrs. J. and J. Robinson, of St. John, New Brunswick; Messrs. Marshall and Son, of Liverpool, N.S.; W. and Henry Thomas and Co., St. John’s, Newfoundland; S. P. Musson, Esq., Barbadoes; Saml. A. Harvey and Co., Demerara; John S. Wainwright, Esq., Trinidad; H. C. Colthirst, Esq., Jamaica; C. M. Eldridge, Esq., Antigua; Hon. Thomas Graham, Esq., Belize, Honduras; Lucius Dill, Esq., Grenada; Leatham and Co., Dominica; Hon. J. Goodman, Esq., St. Lucia; Hon. Ed. Maynard, Esq., Nevis; Hon. T. Turner, Esq., St. Kitts; Hon. H. McDougall, Esq., Tobago; John Saunders, Esq., Nassau, N.P.; Josiah Darrell, Esq., Bermuda; be respectfully requested to act as agents for receiving and forwarding to the Hon. A. J. Duncombe, member of council and judge of the Supreme Court, chairman of the relief committee at Grand Turk, Turks Islands, any contributions, whether in money, food, clothing, lumber and shingle, &c., which may be placed in their hands for our relief.

“Thirdly. That nothing but the deepest necessity, arising from the losses which have fallen in so great a measure on the merchants of these islands, thereby paralyzing their resources, has induced this meeting to make the present appeal; and that his honour, President Moir, be requested to forward copies of these resolutions to the several Governors and Peoples of the British North American provinces and West India islands.

“C. R. HINSON. *Chairman.*”

The appeal sets forth the amount of destruction and the distress to the natives arising from it. We are glad to see the subject taken up in this country, as appears by the following in a recent number of the *Daily News* :—

“A terrible calamity has overtaken the colony of Turks Islands. The recent hurricane sweeping over the islands has rendered three-fourths of the inhabitants, forming the whole labouring population, houseless and destitute. A number of charitable persons in this country,—among whom are Messrs. C. W. and W. Gray, 31 Great St. Helen’s; Fred. Barnes and Co., 109 Fenchurch-street; and B. W. H. Weech, 7 Savage-gardens, Tower-hill,—have formed themselves into a London committee, and undertaken to transmit contributions free of charge to the chairman of the relief committee in the colony. An account has been opened at Glyn’s, where money may be paid, or to the gentlemen named above.”

HOMEWARD BOUND.

PART I.

(Continued from page 34.)

Another dawn appear'd, yet brought no end,
 Or kindly sign the weather would amend.
 Relentless gale with unabated force,
 The sea more furious, and no recourse :
 All this, and more, had met the captain's eye,
 And caused him doubtless deep anxiety.
 Responsibility ! important word,
 Sits light at times, when danger is unheard ;
 Yet gathers weight the nearer this becomes,
 And, when o'erpressed, humanity succumbs.

Keen were the feelings of the *London's* chief,
 As oft he saw conditions past belief
 In his sore-beaten ship without relief :
 The sea, the weather, the unyielding gale,
 Lost spars and boat, ship's state, all could not fail
 To make a deep impression on his mind,—
 That theirs were dangers of no common kind !
 A thorough seaman "every inch" was he,
 And in his survey he could plainly see
 More than that paper said we had from Brest.
 The ship is "crank !" Would he conceal the rest ?
 "Ship too heavily laden for its size"
 Was quite evident to Plymothian eyes !
 The storm was "violent" to the outward bound ?
 "Not so for ship in good condition" found,
 This paper said. And was she really sound ?
 Alas ! alas ! what thrilling words are these
 Which from the *London* come across the seas !
 And more than these : affectionate farewells
 To friends were wafted, as that paper tells !

The information there at once explains
 All the disasters which the ship sustains :
 The storm was violent ; yet worse was made,
 While she unable its effects t' evade :
 H. T. D. Dennis, of Great Shalford, sign'd
 Those words which to relations were consign'd.
 Precious words are they ! Martin too well knew
 Their truth ; and yet what could the *London* do ?
 Yes,—one thing left :—bear up and try her fate,
 The last resource, if not as yet too late.

'Twas Wednesday's morn this last resolve was made;
 The engineer was sent for, and was bade
 Full steam to muster, that the ship might run
 To Plymouth straight.

Soon this was done;
 The ship her helm reluctantly obeys.
 Perilous course! the raging sea delays
 Not long its wretched victim to pursue,
 And seize another lifeboat to undo
 That hapless craft; for she had now become
 The plaything of the storm,—a mimic drum
 Beaten by waves:—just as some childish toy
 Is toss'd about by captious, idle boy!

The *London* now would run before the sea,—
 A course more dangerous there could not be,
 As seamen know full well; oft to their cost,
 By which frail ships have frequently been lost!
 No ship has yet, in her attempt to save
 Her crew from loss, outrun the rolling wave:
 It surely passes her whate'er her speed,
 At length o'erwhelms her when in utmost need.

Better than her captain, this no one knew,
 And also what his ship was fit to do.
 That she was in the water far too deep,
 To sail the rate she otherwise could keep;
 He must have seen: all which he could not state.
 To save the ship already 'twas *too late!*
 Unhappy man, in such position placed,
 Lost he might be, but never yet disgraced;
 Long had he served the faithless tyrant sea,
 Long the true friend of his own firm was he,
 Long the respected chief among his crew,
 Justly esteem'd by every man he knew;
 Ready to give his services to all,
 A friend sincere and quick at friendship's call.
 Yet what avail'd all this? His mind oppress'd,
 Look'd up to by two hundred souls distress'd;
 And more, since answerable he had been made
 For that which now was past all human aid.
 Ah, cruel fate! with an untimely end,
 His was not now the power to contend:
 The victim of custom, alas! was he,
 And lesson left for those who go to sea!

Her desp'rate course th' unhappy ship pursued,
 With little progress in her wretched mood:

Wet she had always been, now so enthrall'd,
 That soon to work the pumps all hands were call'd :
 In such extremes the passengers perform
 Such trying labour which the furious storm
 Exacted ; and yet how little they prevail'd.
 The day pass'd on ; at night she was assail'd
 By another monster sea, which wash'd away
 The hatch of the engine-room, and spread dismay
 Along with fearful terror fore and aft !
 Well might it do so in th' unwieldy craft.
 Too surely this catastrophe reveal'd
 The fact which could no longer be conceal'd.
 That paper spoke the truth which came from France,
 Else why so heavy ? why could not she dance
 Lightly o'er the wave as a ship should do ?
 And why so sluggish in her movements too ?
 And why so wet ? and why a topmast lose ?
 Her boats besides ?—Those stores she does refuse
 To carry safe like any well-trimm'd ship !
 And then, poor thing ! she's caught upon the hip
 By persevering seas, that thus would strip
 And rob her one by one of all her means,
 Or chance of living e'en to reach her teens :
 She was in no uncommon sea likewise,
 And yet "*too heavy laden for HER SIZE.*"
 That means *too deep* ! At Plymouth they were right :
 See here the frightful consequence ; in spite
 Of all the warning she herself did give,
 That in a heavy sea she could not live ;
 Her crew, indeed, she would carry to a grave,
 Although without the power herself to save :
 Since she left port nothing was on the mend,
 Here was but the beginning of the end.

The wreck and ruin of that engine hatch
 Entail'd disasters quite enough to match
 The worst that any vessel could befall.
 For that huge wave its water over all
 Spread everywhere ; the barrier removed,
 Flooded the engine-room, and soon improved
 The progress of destruction going on
 In this devoted ship, where hope was gone ;
 And sad despair of all escape prevail'd,
 Which this last blow in its effect entail'd.

On this same day an incident occur'd
 Which much surprise occasion'd when 'twas heard.
 A vessel pass'd the *London*, near enough
 To see her state, although the sea was rough ;

And by her might have stay'd, had she been ask'd
 To do so: but no!—was the *London* mask'd
 In her distress? By no means! yet 'twas seen,
 And by her noted, that she would have been
 Foul of the *London*, had she not in time
 To starboard changed her course: 'twas yet no crime
 Of that same craft, the *Courier*, Captain Price,
 A ship to pass, although by no means nice
 Or "ship-shape" in her looks; and then her date
 Agrees precisely with the *London's* fate.

No small surprise was felt throughout the ship,
 And justly too, that she was thus let slip;—
 One like an angel, which had come to save
 The *London's* people from a wat'ry grave!
 For ever gone, the *Courier* did not stay,
 No signal show'd that in distress she lay!
 No flag was hoisted, showing they might drown,
 To claim assistance, with the "union down"!
 The *Courier* pass'd, although it was too plain
 The *London* suffer'd on the boist'rous main:
 Blame not the barque,—the *London* had not made
 The usual signal, or she would have stay'd!

* * * *

What fatal influence sway'd the captain's mind
 This chance to lose? Why was he thus inclined
 Such fair opportunity to let slip
 Of saving every soul on board his ship?
 Alas! alas! too true, no one could say,
 Nor he himself, on that sad dismal day,
 Why, for distress, the signal was not made,
 And why indeed assistance he forbade!
 A great mistake the *London* might be call'd,
 Look where he would, her captain was appall'd;
 Above, below, confusion there prevail'd,
 Misfortune everywhere the ship assail'd!
 His very energies seem'd paralyz'd,—
 His doings? How can they be scrutiniz'd?

To clear the ship of water thus received,
 The pumps redoubled all their usual speed:
 Well plied they were, but yet with small avail,
 The waves unwearied continued to prevail.
 This familiarity with the sea
 Brought danger nearer to the company
 Of passengers on board, who thus could see
 Sad signs suggestive of their destiny.

Ill forebodings already were express'd,
 While distant danger linger'd in the breast :
 But fears before became oppressive now,
 And painful terror sat on every brow !
 Who shall describe the fearful scene of fright
 Prevailing through this sad eventful night ;
 When darkness magnifies what's bad enough,
 Making bad worse, and men, of sterner stuff
 Than women are made of, become appall'd,
 And to their last hour believe are call'd !

The ship lies tumbling with repeated blows
 Of waves ; the deck a course of water grows ;
 The lurch to leeward, the accidental fall,
 Crashing of ship's furniture, terror's call,
 The howling wind, the raging sea, and all
 The din of noise 'midst which the pumps are heard,
 A scene composes difficult to word
 Of horrors which no language can express ;
 A scene to test a ship's seaworthiness !
 Scenes such as these are not to be portray'd,
 Even by those whom victims were not made,

Too well the progress of events advanced,
 Misfortune's spell too surely had entranced
 The doom'd ship *London*, to relax her hold !
 Herself t' include within death's ample fold !
 Already are her passengers convinced
 Their end is near ; assembling, they evinced
 Those signs which true repentant sinners show
 When human aid avails not, and they go
 Into eternity's mysterious space,
 Where they're assign'd an everlasting place
 Of happiness or woe ! Ah ! dreadful hour,
 In which the clouds of destination lour,—
 Clouds now collecting o'er th' ill-fated ship,
 To mark the sad end of her final trip.

“ The engine room 's afloat and fires out,”
 Reported from below, soon gets about.
 The hatch destroy'd, 'twere idle to suppose
 That mattress, sails, or blankets could oppose
 Th' invading seas ! Such frail resources fast
 Were swept away before the rushing vast
 Accumulating mass of waters thrown
 From the deck above ; the engineer alone
 His station kept, until in sad despair
 He left it, and to his captain did repair

His "engines useless" to report, who, calm
 And collected, replied without alarm,
 "I expected so." Ah! that settled brow
 Betoken'd resignation;—and yet now
 A final effort should be made to find
 Whether his shatter'd ship was still inclined
 A useless log to wallow in the sea,
 And thus remain to meet her destiny;
 Or would she sail, and from destruction flee?

Alas! what poor resort; her captain knew
 Her condition hopeless! Perhaps 'tis true
 His last resolve was made but in despair,
 To show the world the ship then in his care
 Was that dead log he call'd her, and no more.
 "Set the main topsail, and keep her before
 "The wind," he said; and soon 'twas done. For what
 Purpose? Puny effort,—to change her lot!
 No sooner done than into ribbons blown,
 The sail was split, one corner left alone
 To tell him that his ship was like a stone,
 Fix'd and immovable as to her speed,
 And to the world that she was lost indeed.

Yet let the muse return, with heavy heart,
 To certain scenes which these last days impart:
 A boom (huge spar) which was secured on board,
 Had work'd adrift, and was the cause untow'rd
 Of forcing off the engine hatch; apace
 Waves multiplied the evils of the case!
 The day of deliv'rance, as it should have been,
 Wednesday, was pass'd, and darkness had set in!
 "Night and the hurricane came mingled on,
 "Deep'ning each other's gloom;" yes, daylight gone,
 Terrors were magnified, evils increased,
 Troubles they were which, in themselves at least,
 Need no such addition as to make
 Worse what was bad, and this till day should break:
 Then, as the ship would roll from side to side,
 The water rush'd and women shriek'd beside,
 Trunks and bedding in cabins wash'd about,
 While steam and darkness yet prevail throughout.
 Oft as the ship lurch'd down into the sea,
 Was she not sinking? would the feeling be;
 Is she not going? can the ship arise?
 And thus the fears of all she multiplies!

Th' attempt must fail; no power can convey
 The dreadful suff'ring on that dreadful day;

And happy 'tis not always scenes like these
Have they to expect who venture on the seas!

Oh, ye who nought of ocean perils know,
Who send your ships to sea, and say, "There," "Go,"
Well or ill found, the voyage to pursue,
With stores complete, or incomplete, to do
Your charge commercial in a foreign trade,
And seek abroad for marts of every grade,
In clipper ships of a peculiar make,—
Speed yet to gain that danger will o'ertake,—
When laden deeper than 'tis safe to float,
Where seas oppose, and o'er their spoils can gloat,—
Behold your work! That vessel which you bade
Under your hands to rise from iron laid,—
Admirably fitted for Australian trade,
That realized the quickest voyage made,—
See her condition! see how she defies
Her captain's efforts o'er the sea to rise!
See your fine clipper ship—your ocean prize—
A helpless log upon that ocean lies!
Yet further look,—see her well-peopled space
Cover'd with groups, despair in every face!
See them engaged in melancholy prayer,
In holy reverence, yet with desponding air;
See children wond'ring at their parents' tears,
Innocent as lambs, they know no fears;
Their doom approaching, and must come to-day,
Is not included in their little play!
What think you now? Of marble art thou made?
Art still unmoved? Yet—hero of your trade—
See her brave chief, with calm dejected mind,
His utmost done,—and now to fate resign'd!
Oh! 'tis a scene to melt the coldest heart,—
Let human frailty shudder at the dart:
Yet sure it is to be enacted there
As daylight comes with morning's chilly air.

Nor was the final signal long delay'd;
Ere morning dawn'd th' intruding sea had made
Another breach in the devoted ship;
A fatal one it was,—enough to strip
From th' olive branch of hope its only leaf.
A dead unwieldy log without relief,
Resistance making to the passing wave,
The ship long was: the effect was now to stave
Her stern ports in,—those barriers to the sea
That poor resistance gave:—these gone, left free

Passages for the rushing waters, where
 Cabins of wretched passengers in prayer
 Were deep engaged. Ah! such intrusion might
 Give ample cause for adding to their fright;
 Yet this, alas! had reach'd its utmost height;
 For what could add to their forsaken plight?
 These are the times which banish all reserve;
 For each, a little history will serve
 To open hearts, which otherwise were cold;
 To string up nerves, and make the timid bold.
 A lady passenger her tale thus told:—
 Briefly, she'd come from Melbourne to uphold
 Some property in England, and had brought
 An interesting child, her niece, who thought
 More of her aut's happiness than her own:
 Much she deplored that she was not alone;
 She'd left her husband, lately married, there,
 And seem'd to have scarce any other care!
 "I feel as if I never should see land
 "Again," she said; "but then, at my demand,
 "My little niece came with me, and I'm loth
 "To give up life, and others leave, for both
 "Of us must die! We shall be mourn'd; for much—"
 On which the child, with angel's sweetness, such
 As none but children can command, rejoind,
 "I'm happy, dearest aunt, do never mind,
 "We'll die together." And so they did;—
 For doubtless in each other's arms they bid
 Adieu to life. Ah! what a scene was there,
 Affection striving with sad, deep despair!
 * * *

Scenes such as this the *London* had display'd,
 And frequent too, for fear sad havoc made;
 Varied by circumstances, yet the same,
 In character alike; and *who to blame?*
 The answer to those words is better known
 Where conscience speaks in "still small voice" alone.
 And where it does, oh! envy not the heart
 Of that man who for sordid gain can part
 Relatives with death! he deserves to smart.

At length this night of suff'ring pass'd away,
 Its dark and sluggish wings did not delay,
 And morning brought the still more dreadful day:
 Oh, what appalling sight did it display!
 A sea to fury lash'd by cruel gale,
 No other vessel seen, no friendly sail,
 That could bear down and succour the distress'd!

Nought but the *London*, helpless and half drown'd,
 Was within range of her horizon found :—
 And she, alas ! a heavy iron ship,
 Struggling with waves, yet deeper seem'd to dip !
 'Twas not a week since she from Plymouth sail'd,
 Staunch and seaworthy. Words these that avail'd
 For various authorities on shore
 To let her sail !—though evidently lower
 Afloat than that seaworthiness required.
 Where was her captain's eye ? was he desired
 To look to this defect, and be *inspired* ?

Ah no ! such scrutinizing words, poor man,
 Would forfeit him his station ! and who can
 Blame *there* impute ? Would he not sail his ship ?
 Another would, and from him take the trip !
 His station lost, alas ! can he replace ?
 Ah no ! then take her, and avoid disgrace,
 Your station keep !—secure respect and bread ;
 Life's but a hazard, hanging on a thread !
 Besides another consolation's true,
 The ship's insured ; *and so perhaps are you !*
 If that will not your precious life preserve,
 What else then think you does that life deserve ?
 This but a word of him ;—still it controls
 The difference 'twixt Gold and living souls !

(*To be continued.*)

SOME OF THE EFFECTS OF THE JANUARY GALES.

(*With an Engraving.*)

It must be always a source for solicitude and regret, that scarcely a gale passes over our coasts that is not attended with loss and suffering to our mercantile shipping. In winter, this is as certain as that light comes with day. There is nothing to our credit as a maritime nation in this ; and there are various causes always ready to occasion both. Undermanning, badly provided, and very questionable seaworthiness, may be considered as among the principal causes ; and great as our mercantile marine is, there is nothing to boast in it when some bad weather is sufficient in these narrow seas, with their poorly provided state, to blow them from the surface of the waters. Nor can our seamen find much encouragement to trust themselves in such craft, which thus so readily find destruction.

While we must always, it is to be feared, labour under this dis-

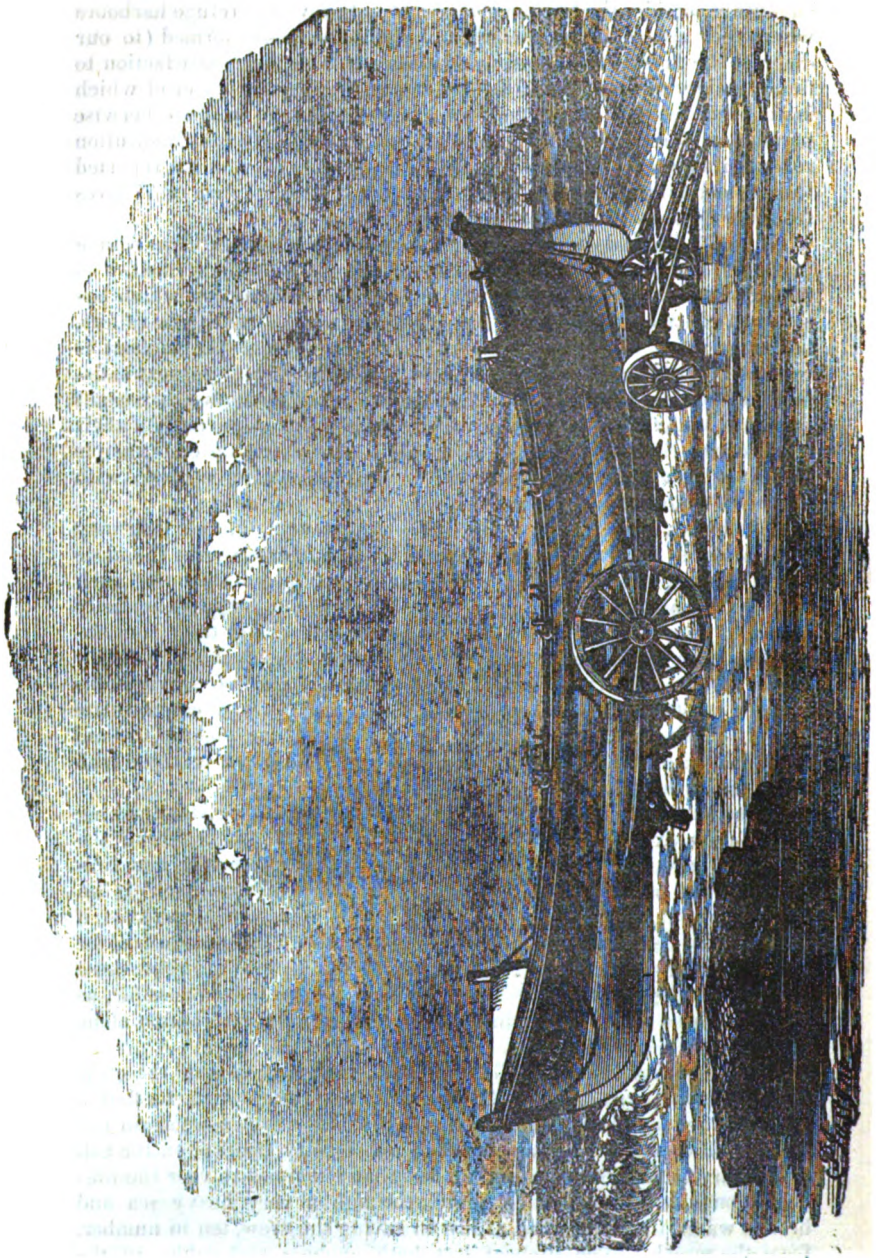
advantage, besides the inexcusable one of not providing refuge harbours where they are so much needed, and would be easily formed (to our disgrace be it said as a maritime nation), it is no small satisfaction to find a society sprung up and flourishing among us, the object of which is to send relief to those unfortunate seamen who would otherwise perish but for their aid. The Royal National Lifeboat Institution realizes its avowed objects of saving life from wreck, and are reported to have contributed during the recent gales to the saving of 77 lives from the different wrecks on our coasts.

No doubt lifeboats are more easily built and established than refuge harbours, and much as these are wanted and should be formed, it is better to have such boats than nothing at all. The society, which has so much contributed to the saving of the valuable lives of our sailors, has even done more than this. By their experience the lifeboat is rendered as perfect as she can be, and the society has the great satisfaction, not only of thus having made it so for their own important purposes, but of furnishing to our neighbours abroad the result of their experience. So that a foreign power desirous of following our example in having an establishment of lifeboats gets the model at once, with all its most important improvements.

All honour, we say, then is due to this noble society, and long may they continue their invaluable services; the longer they do, the more proud need England be of her sons, and grateful to them for such services. They show how well they manage the funds voluntarily placed in their hands by their admiring countrymen, and their flourishing condition shows how truly those services are appreciated. Every friend to his country—friend to her seaman, on whose services his country must ever depend—will wish them success, and congratulate himself, while he aids them in their designs, that we possess the aid of so valuable and experienced a handful of gentlemen as those who form the Royal National Lifeboat Institution.

It has long been a pleasing duty of this journal to assist in making known their exertions, and we add to this notice of the effect of the late gales on our coasts a representation of one of their last new lifeboats on its transporting carriage. The very picture itself is an encouragement to our seamen. They already mostly know, that if they should be wrecked at home, whatever human aid can do will be exerted on their behalf. No weather is too bad to prevent those exertions being made where it is possible; where it is impossible, as at such places as Carnsore, in the following reports, resignation alone must follow.

The Ramsgate lifeboat, called the *Bradford*, after saving the crew of the *Mizpah*, wrecked on the Goodwin, and attempting to find a large flaring signal of distress, but was prevented by snow, again put off to another vessel on shore close to the Trinity Beacon, on the 6th of January. After attempting no less than six times to veer the lifeboat alongside the vessel on shore, through a very heavy sea and broken water, they succeeded at last in saving the crew, ten in number, from the wreck. The lifeboat lost both anchors and cables in the



service, and arrived in the harbour with the shipwrecked men all safe at 2h. 15m. p.m. The crew when taken off were very much exhausted. She proved to be the Danish barque *Aurora Borealis*, of Ribe, Smith master, 236 tons, from Newcastle to Messina, cargo coals, went on shore at 4h. 30m. a.m. Jarman, the coxswain of the lifeboat, reports that he never encountered such terrific weather, intense cold, and heavy sea, in all his experience. The crew could not have been saved without the assistance of the steam tug.

From Liverpool, it is reported that the *James Crossfield*, Captain Cumming, which left Calcutta for the Mersey on the 12th of September, with a large and valuable cargo, one portion of which was 1,696 bales of cotton, was caught in the storm near the Isle of Man on the night of the 5th of January, driven on the rocks near Castle-town, and soon after became a total wreck. All on board must have perished, as not one of those on board the ill-fated ship has been heard of since the vessel struck. There can be no doubt that the lights on the island were rendered invisible to those on board the ship by the thick snow which was falling. The *James Crossfield* was a splendid iron vessel, owned by Messrs. Pollard and Co., of Liverpool.

From Great Yarmouth, on the 7th of January, the loss of the brig *Ark*, and also the *Sarah*, of Sunderland, and the sloop *Ann and Charlotte*, on the Scroby Sand,—the crew of the latter saved.

At Tynemouth, on the 6th of January, in a S.E. gale, five vessels are reported wrecked or stranded. At Exmouth, on the same day, the *Julia* brigantine, of Exeter, was lost. She was observed running for the bar, and was struck by a sea near the S.E. end of the Pole Sand. The lifeboat speedily went off; but unfortunately within fifteen minutes after the ship struck the sand she disappeared, and although the lifeboat was rowed in the direction of the floating wreck, she was not successful in discovering any of the shipwrecked crew. One poor fellow out of the seven on board was rescued by a coastguard boat. He was observed clinging to a piece of wreck. He reported that the heavy sea that had struck the vessel had caused the barrel of the wheel to unship from its socket, thus rendering her unmanageable.

From Penzance, it is also reported that, during a strong gale from E.S.E. on the 5th, a schooner went ashore at Long Rock. The *Richard Lewis* lifeboat, of the National Lifeboat Institution, was at once launched, and was happily the means of rescuing the shipwrecked crew of six men. Again, on the 6th, the same lifeboat went afloat, and saved the crews of eleven men from the *Selina Ann*, bound to Plymouth, and the *Heiress*, bound to London—the former vessel having gone to pieces. There are wrecks all over this coast.

From Weymouth, sad reports come of the gales of the 7th and 8th, which say that throughout the whole of the night of the 7th and up to the noon of the 8th, there has been a complete hurricane, veering round to the W.N.W., the sea tremendously high and much damage done in Weymouth. It unfortunately happens that the spring tides are just now, and this, coupled with the boisterous winds, has had the effect of making the sea higher than it is under ordinary circum-

stances. In the harbour the quay has been inundated, in some places along the backwater the water being almost 2 feet high. The working of the tramway which runs on the quay cannot be carried on, and trade is almost generally stopped. Owing to the heavy run of the tide in the harbour a portion of the quay, near the Custom-house, has been pulled down by the severe strain upon it from the cables of ships. The schooner *Isabella*, of Waterford, broke away from her moorings, owing to the exceedingly strong run of the tide, and it was by the merest chance she contrived to save herself from being dashed against the quay.

The beautiful esplanade is sadly disfigured by the sea, especially the upper portion, near Brunswick-buildings, where, owing to the effect of the breakwater, the sea is driven with great force. The inhabitants of this part of the town were in a great state of alarm, owing to the boisterous nature of the elements, the sea actually reaching the very doors of their houses. The harbour is full of shipping, which have put in for safety. All communication between Weymouth and Portland is stopped, the sea from the West Bay having washed a portion of the railway away. The sea in the bay is awfully grand, it making a complete breadth over the Chesil Beach.

At Plymouth, a heavy S. S. W. gale was experienced on the night of the 5th, when two small schooners were totally wrecked in Batten Bay,—the *Teazer*, of Ipswich, with loss of all hands except the mate, and the *Palmyra*, of Southampton, with all hands. The ship *John Gray*, of Glasgow, from Demerara for London, was also totally wrecked in Mount's Bay. The passengers and crew saved; the captain and mate were drowned. The telegraph wires in some parts were also blown down.

At Liverpool, on the 8th, sad accounts of the storms of the 6th and 7th are given, in which the schooner *St. George*, bound to Runcorn, was lost off the Great Ormshead, and two of the crew were drowned. The iron ship *Countess of Renfrew* went ashore near Tacumshope, Wexford, and is likely to become a total wreck. The *Brighton*, *Favourite*, and *Clara* went ashore on the morning of the 6th at Milford, but were ultimately got off without much damage. The brig *Eliza*, Penzance, was fallen in with off St. Ives by the steamer *Colon*, and the crew were taken off and landed here safely. The ship *J. O.*, which left this port a few days since, struck on the rocks near Ramsay, Isle of Man, on the night of the 5th, and went to pieces. The *Catherine Porter* has been wrecked on the Kish Bank, and only two of the crew saved. The schooner *Brothers* is a total wreck near Beaumaris. The sloop *Sisters* was fallen in with outside the N. W. lightship on the 6th by the tugboat *Her Majesty*, in distress, and the crew exhausted: the sloop was towed into Liverpool.

Again, at Lizard, in Cornwall, the Rev. P. Vyvyan Robinson reports that, as he was leaving the house for church on the 6th, shortly before 11h., a farmer arrived from Mullion village, and informed him that a schooner was at anchor near that place in very great jeopardy. Immediately the lifeboat of the National Lifeboat Institution on this

station was got out, and quickly drawn on her transporting carriage by ten horses to that locality; but, sad to say, we found we were too late, as the vessel had gone ashore shortly before our arrival, and all hands had unhappily been drowned. The greatest zeal was shown by the lifeboat crew and helpers in getting the boat to Mullion Cove, and we were only 40 minutes in getting there from the lifeboat-house. The Porthleven lifeboat, which likewise belongs to the National Lifeboat Institution, had also been taken towards the scene of the wreck, but she could not be got there in time.

From Cardigan, it is reported that the Manchester lifeboat, the *John Stuart*, belonging to the National Lifeboat Institution, on the morning of the 7th was happily the means of rescuing in a heavy gale of wind the crew of three men of the sloop *Oliver Lloyd*, of Cardigan, and three men belonging to the smack *Turtle Dove*, of Aberystwith, which had dragged their anchors and drifted out into Cardigan Bay. The services of the lifeboat were most gallantly performed. Owing to the violence of the gale the lifeboat had great difficulty in finding a safe place for launching.

From Tramore, in Ireland, we are glad to learn that, on the 7th of January, the Cambridge University Boat Club lifeboat, the *Tom Egan*, rendered (reported by Mr. James Budd) some valuable service to a shipwrecked crew. The French schooner *Ammenion*, of Nantes, was observed unmanageable in the bay with loss of rudder and rigging. The lifeboat of the National Lifeboat Institution immediately put off to the help of the shipwrecked crew, and ultimately succeeded in bringing the whole of them, five in number, safely ashore. One of them had one of his knees put out of joint, while getting into the lifeboat; but Dr. Kennedy immediately attended to his case, and the man is now doing well. It should be mentioned that the Hon. D. Fortescue generously took the shipwrecked crew to his house, and provided for their wants.

Again, at Penzance, on the 8th of January (Monday), it is reported that the *John Gray*, of Glasgow, bound from Demerara to London, has gone ashore to-day off this place. The lifeboat of the National Lifeboat Institution has been the means of saving fifteen of the shipwrecked crew, but the captain, mate, and two men, who refused to leave their vessel, were unfortunately drowned. This valuable lifeboat has been the means during the last few days of rescuing thirty-one persons from wrecked vessels.

Here is a further account of the scene which took place on this occasion. It states that, during the recent gales at Penzance, the lifeboat named the *Richard Lewis*, belonging to the National Lifeboat Institution, which had rendered such good service on the 5th and 6th, in saving seventeen shipwrecked men, was again called out on the 7th, and bravely hurried to the rescue of the crew of a large West Indiaman, the *John Gray*, of Glasgow, which had gone ashore after having been embayed all day in sight off Penzance. Rocket lines were skilfully thrown on board the ship, but this proffered aid was not made use of. When the lifeboat returned from her long and perilous

trip thousands of watchers were told that, though fifteen men had been brought away, four remained behind. Soon after the ship broke up, and they miserably perished. The cause of these four deaths was a common but most sad one. The master and second mate were drunk with rum, and not only would not touch the rocket lines, or go aboard the lifeboat themselves, but, with threats and curses, endeavoured to prevent the men from leaving the ship. The first mate, a teetotaler, attempted to reason with his frenzied captain, but being unable to make any impression, resolved to share his fate, and did so at the cost of his own life. A fourth man drowned was held below decks,—he could not move or be moved.

Here is information saddening enough, indeed! Men must, indeed, be in a forlorn condition of mind when afraid to meet death in their sober senses rush to deprive themselves of all reason, and die like beasts!

But we have not yet done with our calamities. Here is a sad account of the loss of the Glasgow and Londonderry steamer *Falcon*, with forty lives, that says:—

The fine screw steamer *Falcon*, with the whole of her passengers and crew, with only three exceptions, went down off the Mull of Cantyre on Sunday morning the 6th, a little after two, in the midst of a hurricane of wind and snow—the cause of the appalling catastrophe. Those saved were the master of the vessel, Captain Harvey Hudson, Hugh O'Donnell, second mate, and one of the hands, named John Urie. Having been detained at the Broomielaw on the 4th by fog, her sailing for Londonderry was delayed for a day, and consequently she did not leave Glasgow till 8h. 15m. on Saturday morning the 5th, sailing from Greenock the same afternoon.

All went well till after passing the light on the Mull of Cantyre, abreast of which she was at six o'clock, but before the vessel had made Rathlin she encountered a severe hurricane of snow, which becoming so thick induced the master, Captain Hudson, to seek the shelter of the Cantyre land. After beating about for several hours, and while going dead slow, about 2 a.m. on Sunday the vessel's stem struck a rock, or the shore, and stuck fast. At once the captain ordered the engines to be reversed at full speed, in order, if possible, to get her off the rock, that he might run her into a small creek, which he had just discovered at hand. The vessel, however, did not move; and after having turned off steam the engineer came on deck. Almost immediately afterwards a wave lifted the vessel off, and before the engines could be set on the wind drifted her off the land, and she had so far settled down at the bows—where her injury had been received—that her screw was out of the water, and of course useless.

Seeing the state of matters, the vessel leaving the land and rapidly sinking, the captain gave orders to man the boats, of which there were sufficient to have saved all on board. This seems to have been done, and it is supposed that all the boats were swamped, for the captain avers that he believes all on board perished but those who were saved along with himself in the *Falcon's* lifeboat. The account of the sur-

vivors' escape is to the effect that the second mate and Urie were alone in the lifeboat, which seemed to have been staved in, and was half full of water; and although a number of those in the vessel were urged to enter it, they declined—probably being ignorant of the buoyant character of a lifeboat—so that when the second mate called out to the captain to take his chance with them, Mr. Hudson jumped in, his vessel being then in a hopelessly sinking condition. She drifted for about a mile from the land, and then went down.

In the lifeboat there were three oars at first, but soon after starting one of them was lost. However, owing to the hurricane, and the extreme cold at the time, the men were soon unable to do anything to control the boat, and she was allowed to drift before the wind. When daylight broke they were quite out of sight of land, and had given themselves up for lost. After midday, however, hope revived within them as they approached the Island of Islay; but they were now in so benumbed a condition, and the waves were still running so high, that it was extremely doubtful, even if they did make the Mull of Oa, Island of Islay, whether they would not be driven to pieces on the beach. Happily, unknown to the men in the boat, two strong and gallant young men of the name of Campbell, residing on the Kildalton estate, who chanced to be looking out towards the sea, descried the boat, and well knowing the dangers of the coast, at once in the most heroic manner determined to risk their lives in the attempt to save them. Accordingly, they hurriedly launched a boat, and with a strong pull were not long in reaching the lifeboat. Seeing that the men on board were quite prostrated, in fact unable to help themselves to the least extent, they fastened a line to the lifeboat, and towed it into a safe harbour. The captain and the others were instantly lifted out of the boat and kindly tended at a farm near, until they were so far recovered as to be removed to Port Ellen, about 6 miles distant, where Mr. Scott, factor to Mr. John Ramsay, of Kildalton, and others, did all that kindness and consideration could suggest for their comfort. The place, as near as can be ascertained, where the vessel took the ground was between the headland of Cantyre and Macrahanish Bay, so that the distance the lifeboat must have drifted was 30 miles. The perils of such a passage in a hurricane of snow in an open boat can be imagined, not told.

On board the *Falcon* there is known to have been a crew of 23 hands, including Captain Hudson, but the number of the passengers cannot be so readily ascertained. The master says he believes there were between 40 and 50, only one of whom was a cabin passenger (Mr. M'Farlane, an innkeeper at Londonderry); but it is to be hoped this number is an over-estimate, as the owners of the vessel—Messrs. McConnell and Laird—inform us that only 11 passengers went on board at Glasgow and 5 at Greenock, making together 16. They, however, mention that there were usually a few to go on board without having first paid their fare, so that the passengers may be set down as at least 20, which, with the crew, makes a loss of no fewer than 40 lives by this melancholy occurrence.

Whether any blame is attachable to any one it is not our province to decide. The whole circumstances will doubtless be the subject of a strict and impartial inquiry. The *Falcon* was 264 tons, 100 horse-power, and was built by the late Mr. Archd. Denny, of Dumbarton, six years ago. She was certainly a favourite vessel, and for steadiness and regularity was everything that could be desired. She was built in water-tight compartments, and was considered a strong vessel. Mr. Hudson is a man in the prime of life, and of great experience as a commander of steam vessels. He was for several years captain of the *Mary Jane*, plying between Stornoway and Glasgow, and commanded the screw steamer *Isleman* before joining the *Falcon*. He is highly respected by former and present employers. Of those who have perished with the *Falcon* there is no possibility of getting a list, but the crew are all known. M'Ewan, first mate, is well known in the Highland trade, having been for several years in the employment of Messrs. D. Hutcheson and Co., and Mr. Ramsay, of Kildalton. Many of the hands leave widows and families to lament their loss. The regular engineer, Lang, was not with the vessel on this voyage, having been in ill health recently. The inhabitants of Cantyre and Campbeltown—although so near the scene of the wreck—as we learn by telegraph from our own correspondent, knew nothing of it until M. Ramsay, who was the first to send notice to Glasgow of the occurrence, sent them intelligence.

Another account from Wexmouth, dated Wednesday the 9th of January:—

At the time when our report left it was impossible to give any correct idea of the damage done to the Weymouth and Portland Railway by the violence of the sea which raged on Monday night the 7th. A personal inspection was made of the railway this afternoon, and it is almost a complete wreck near the Chesil Beach. The ballast and earth on which the metals are laid are washed away to the extent of 40 or 50 yards in several places, and the rails are bent like a bit of hoop iron. The water from the West Bay percolated through the Chesil Beach, and ran like a river by the sides of the line, washing away everything which impeded its progress. Throughout all day yesterday and last night about 150 navvies were actively engaged in stopping up the breaches made by the sea, and to-day fresh arrivals from all parts of the line are being concentrated there. Should the sea continue as at present, it is thought communication with Portland may be effected by to-morrow afternoon. During the heavy gale telegraphic communication was also stopped, but has now again been resumed.

The Shambles light ship has been in great danger during this rough weather, and great fears have been expressed for the safety of the men on board. The crew ought to have been relieved on the first Monday of the month, but up to the present time no communication can be effected with the ship. The weather is still very "dirty," the sea being exceedingly rough, and the wind blowing very hard from the west. The magnificent breakwater at Portland has not sustained

any damage beyond that already recorded—a portion of the woodwork having been washed away. Although the sea has been continually dashing against it with a violence never before known, the massive stone work is not the least injured.

At Liverpool on Wednesday the 9th they report the total loss of the *Mary Polt*, near Drogheda; the foundering of the *Helen*, of St. John's, N.B., off Sanda; the wreck of the *James Hughes*, off Cardiff; the sinking of the *Bethesda*, from Bruges to Leith, near Yarmouth; the stranding of the *Undine*, near Wexford; and the sinking of the *Capella*, off Dundalk. The *Celestial Marie*, from Ardrossan for Nantes, has been totally wrecked in the vicinity of Millbay, and we regret to state that it is feared the crew have perished. The ship *Zilla*, bound from the River Plate to the Mersey, has been compelled to put into Llandwyn Roads, in a very leaky condition, having been much damaged during the recent gale. The ship *Huntley Castle*, which was being towed to Greenock from the Mersey, had to have her masts cut away, in order to save the ship. A large vessel has gone down off Strangford Pier, and all on board have been drowned. The ship was apparently outward bound, and as none of the cargo, ship's furniture, nor any of the bodies of the crew have been washed ashore, the name and destination of the ship are at present unknown. The *Cornish Lass*, bound from Smyrna to London, has been totally wrecked near the island of Andreas, and we regret to state that the captain and two of the crew have been drowned. The greater portion of the stern of a vessel, on which was painted "*Lady Ann Kerr*, Dublin," has been picked up in the Channel, and there is no doubt that this is a remnant of the vessel that was observed to have gone down off the Briggs a few days since. The crew of this vessel, too, we regret to say, have shared the fate of the illfated ship. Besides the above list of disasters, a large number of vessels have been compelled to run into many of the Welsh and Irish ports for shelter, but not one of them, so far as we learn, has escaped damage. The underwriters will be heavy sufferers by the late storm. The ship *Panama*, which sailed for Wilmington on the 1st December, put back here to-day much strained, and with one man lost overboard. The ship *Taymouth Castle*, bound from Glasgow to Singapore, went ashore yesterday morning on Tow Point, county Antrim, and became a total wreck. The crew are supposed to be safe. The latest news from Tow Point is to the effect that all of the crew of the *Taymouth Castle* have been drowned.

At Lyme Regis, in Dorsetshire, it is stated on the 9th that the port was visited yesterday with a fearful storm, which occasioned the loss of four vessels by their drifting out of the harbour, and three of them becoming perfect wrecks. The few men that were on board the vessels were fortunately rescued by the coastguard galley, manned by Lieutenant Elton, R.N., and five other men. The sea was so heavy that the service was a very gallant one, and called forth loud plaudits from the lookers on. There were other lives saved also at much risk by different individuals—persons having been washed off their legs by

the heavy seas. The tide was much higher than it has been seen here for years past.

But we must conclude our present reports with the following touching statement.

A portion of the crew of the barque *Newcastle*, Capt. Harrison, of Shields, arrived at Hartlepool on Wednesday, the 9th, and they give a most affecting account of the loss of their ship and the sufferings they have endured.

The *Newcastle* left the Tyne the previous week laden with coals, bound to Alexandria, and during the gale of the 5th (Saturday night) the cargo shifted and rendered the barque unmanageable. About 6h. 30m. Sunday morning, she ran with great force on the Hasbro' Sands, near to Yarmouth. The sea pitched the vessel about very much, and it appeared evident that she would soon become a wreck. The long boat was launched, and nine of the crew, together with the mate, John Marshall, got into her. The captain refused to leave his ship, and went into the cabin, it was thought to pray, for he never left it until the ship parted, and he was engulfed in the boiling surge. His son, a fine lad about fifteen years of age, said he would remain with his father, and, despite all persuasion to get into the boat, would not leave.

The boat had only just pulled clear of the ship when she yielded, and the captain was drowned. The son was on another part of the vessel, and ascended the rigging, and cried out most piteously for the boat to return and take him off. The wreck of the ship was then being pitched about with the sea, and made it dangerous for the boat to approach it, so the poor lad's cries were in vain, and he did not long survive his parent.

The long boat then was pulled away from the sad scene, and the fine barque was in a brief space of time a fragmentary mass of floating wreck. The ten of the crew who were aboard the frail craft had neither water nor provisions, and were exposed during the whole of Sunday to the wet and cold. The boat also shipped two or three seas, and all the oars were carried away with the exception of two, which were scarcely sufficient for keeping her head to the sea. She filled with water twice, and was nearly swamped.

On Monday the want of water began to be felt, and the mate was in the direst agonies, calling out imploringly for "water." He also raved about his wife and children, and at times tore his hair. He became so excited at last that he jumped overboard, and was with difficulty rescued. As Monday night drew near symptoms of madness exhibited themselves, and his companions, although starved with cold and suffering from want, used all their energies and strength to keep the poor fellow in the boat. He, however, overpowered them, and sprang into the sea again, and this time was nearly lost. On being got on board again, it was evident that he was raving mad, and despite all the efforts of his companions, who were moved to tears at his piteous cries about his "wife and bairns," he again extricated himself from

their grasp and drowned himself. He belonged to North Shields, where he leaves a wife and family.

The nine remaining in the boat struggled on without water or food for three days, and had given up all hopes of being saved, when the Dutch schooner *Dolphin* picked them up off Flambro' Head on the Tuesday afternoon. They were assisted aboard the ship, being nearly starved to death, their hands and feet being considerably swollen with the lengthened exposure. The captain of the schooner paid every attention to the shipwrecked crew, and landed them at Hartlepool. Their names are John Forster, John Hardy, Alfred Linnerbolt, Edward Hartell, John Robson, William Crockett, John Storey, Geo. Stewart, and William Kemp, all belonging to Shields and Newcastle, whence they were forwarded by Mr. S. Armstrong, the agent to the Shipwrecked Mariners' Society. The vessel was the property of Messrs. Henderson and Co., South Shields.

PORTSMOUTH BARS.

January 16th, 1867.

Sir,—A Notice to Mariners, No. 73, England, South Coast—Knolls on (what is erroneously called, and as far as I know without any authority,) the Outer Bar of Portsmouth Harbour, and alteration of leading marks—has been issued from the Hydrographic Office, Admiralty, dated November 21st, 1866.

I have taken the trouble to lay down upon a tracing (herewith enclosed), from the bearings given, the position of these two alarming and recently formed shoals,—which position it has been found necessary to point out by a chequered black and white buoy.

It is highly probable that these shoals will turn out to be a disjointed elongation of the Spit Sand, hooking round to the eastward, and at no great distance of time WILL, if not removed, form a high and outer bar. That their growth has been the consequence of those ill-advised dredging operations which have been going on for some years past, I have very little doubt.

Before the dredging away of the Bar commenced—I think in the year 1858 or 1859—by the desire of the late Admiral Sir Richard Dundas, then a member of the Board, I was applied to and my opinion was asked in the matter. I extract from my reply that part of it which bears immediately on the point,—namely,

“If there is one fact more important than another springing from my survey, it is the incontrovertible evidence it affords that Portsmouth Harbour and its channels have continued in an unchanged condition for many years. I am therefore apprehensive that, if we persist in infringing upon this state of things, we shall find sooner or later great changes arise, which may in the end lead to calamitous results.”

Again further on, alluding to the probability of the Spit and East Sands washing down into the harbour channel by lowering the Bar and dredging away the edges of the two sands, I went on to say,—

“If such a consequence was to follow, I am not sure that we should not have *another bar formed further out*; for I think it may be conceded that the deep water to the southward is only preserved by the natural scour that is maintained up to the position referred to, viz., at the narrows on the bar, which scouring power would be greatly reduced in strength if the Spit Elbow was to break down.”

Now, I would ask any unprejudiced person if there are not good grounds for the opinion that my predictions have been fulfilled? Let me put the following questions.

Are not changes going on? has it not been found necessary to shift the position of the buoys, and add others?

Have not the leading marks been altered more than once, beacons been removed, and others erected?

Is not the deepest water in the channel now found to be considerably to the westward of its former course?

And lastly, Is there not a strong presumption that an outer bar is forming, and that the end of the Spit is extending to the eastward?

Seamen are informed by the Admiralty Sailing Directions, published in 1863, at page 183, under the head of “The Bar,” that in January 1863 there was 17 feet water, and that in April 1863 there would be 20 feet at low water springs on the Bar! Now, although I believe that never was and never will be the case, and was a very improper assertion to be made, still it is so stated; and had it been true, by their own showing there would now be less water by 2 feet—viz. 18—upon what the Notice calls the Outer Bar; but where in fact there was 27 feet, and within the limits of the Red light at Southsea Castle, which is the fairway night mark that leads into the harbour channel between the Spit and Horse Sands?

What is to be the end of all this? Verily, what with the Royal Engineers working at the beach, the tampering with the banks and the channels, and the abstraction of so much water area, going on in Portsmouth Harbour, reducing the invaluable backwater in that harbour by the enormous works in progress, it will be well if we do not in the end seriously cripple the efficiency of our most important arsenal.

When I published, in the *Nautical Magazine*, my pamphlet in June 1864, I sent copies to two experienced authorities on hydrographic subjects for their opinions,—viz., Admiral Sir Edward Belcher and Admiral George Evans; and I trust I am breaking no confidence in recording here what they said on the subject.

Sir Edward Belcher replied: “I fully concur in every idea you have so clearly laid before the public, and I hope you will furnish every member who can comprehend and act upon it with a copy. . . . Indeed, your *remarks coincide* with what I have long asserted as to the effect of any puerile attempt to *keep open* a channel by eternal dredging. . . . Most assuredly I agree with you that Ports-

mouth Harbour is not a fit position for ships of war, and any dashing intelligent enemy would block it for all war purposes at the cost of a few stone-laden transports. Southampton Water offers a very much superior site, and we merely disagree as to the position."

Now let us hear Admiral Evans. "Many thanks for allowing me to read the enclosed valuable and most interesting document. I perfectly agree in every one of your remarks, and the probable result of attempting to dredge Portsmouth Bar. For twenty-one years I have objected to harrowing the Liverpool Bars, feeling the impossibility of maintaining a greater depth of water over them than the backwater would preserve. With respect to your remarks on the Southampton Water, I perfectly agree in every word you state; and you may rely on it, that your admirable plan for making it the port of reserve for our fleet will, and of necessity must, be at some future period carried out."

I will conclude by asking, What better opinion on such matters could the Board of Admiralty have had than that given by the above able and scientific officers?

I am, sir, &c.,

W. L. SHERINGHAM, *Rear-Admiral.*

P.S.—Surely a buoy in the middle of the harbour channel—so much in the way of steamers and sailing craft working in or out by day—had better be on one side or other of it; besides, there is a foot more water on the shoal (at present reported) than there is on the Bar itself.

W. L. S.

To the Editor of the Nautical Magazine.

MERCHANT SEAMEN AFLOAT.

In a former number, I stated that the mortality among merchant seamen engaged in the East and West India trades was appalling. A strong proof of this assertion has recently been given by the deaths on board the Royal Mail steamers *Atrato*, *Seine*, *Tyne*, and *Tasmania*, fifty seamen having died on the passage home from St. Thomas from fever; and it is not improbable that many have since succumbed or have had their constitutions permanently injured by it. Throughout this sad calamity it appears that neither officer nor passenger was attacked; and it is therefore reasonable to infer that the forecables of these floating palaces differ in as great a degree from the passenger accommodation as Bethnal Green does from Tyburnia. Indeed, Bethnal Green has its sewerage commissioners and other boards to look after its general welfare, but the forecables of merchant ships are beneath the notice of the Board of Trade. The passenger accom-

modation alone claims a strict surveillance from their officials. There is ample legislation on the subject, but it is all recorded in such vague unsatisfactory terms that it stands a dead letter in practice, and consequently a seaman gets exactly the amount and species of accommodation which the shipowner pleases to give him.

Not long since a surgeon from the West Indies informed me that he was called to attend several cases of fever on board a steamer trading there. He found the patients lying in a close lower fore-castle, so badly lighted that he was compelled to examine them by lamplight, although a tropical sun was blazing on deck overhead. As there was an overpowering effluvia of night soil, he inquired the reason, and was informed that the water-closets were placed in the after part of the fore-castle. When reporting the condition of the sick to the commander, he made the following remark: "Were I to take the healthiest man in the town, and permit him to sleep for one night in this ship's fore-castle, he would assuredly rise with fever,—medical skill is useless under such circumstances." This is no uncommon case; and when it is known that the habits of seamen are not over clean, we need not be surprised at the result.

I fear that the wail of the widow and the fatherless, which is now too common at Southampton and its environs, will not reach the proper quarter, whence remedy might be expected. Wages may rise a few shillings per month for a season, and then the affair will be forgotten till another outbreak recalls to the public mind that the evil has long existed and has had its victims. Let any one who is interested in the mercantile greatness of England visit our eastern seaboard, and look carefully at the fine race of men who do our maritime work there,—strong, stalwart fellows, fit representatives of the Saxon race in any part of the globe. Then let him go to London, Liverpool, or Glasgow, and compare them with the motley group who surround our shipping offices in those emporiums of trade. The contrast is painful. With a few exceptions, he will see none whom he would care to choose as the type of an English seaman. A large proportion are foreigners, and be it understood, in using that word, I do not include the German race, but refer to those more distant from us in blood and ideas.

I have before remarked that the punishments awarded by the mercantile code are so absurd, that no one attempts to carry them out. A man may be fined for not attending Divine service; and should he comply with such a questionable order, he may be fined for not being clean shaved. Such trivial punishments should be swept from the statute book, in lieu of a copy being placed in a conspicuous position on board every merchant ship, where it becomes a mere jest.

MERCATOR.

The advocates of the spherograph and the de-magnetizing process appear to have retired from the field, leaving the compass question even in as much darkness as they found it. They act wisely in so doing; for at present the science has not assumed a practical form,

such as the generality of seamen can understand; and I may add the same of higher quarters, for the interior fittings of an iron ship strangely modify her peculiar features.

M.

Sir,—Though it be somewhat late to offer the compliments of the season, as they are called (often, perhaps, too truly), yet permit me on this 6th day of January to wish you, Mr. Editor, an especially happy New Year! and why, think you, is the heart of your correspondent especially warmed towards you at this period? Because I have seen your recent appeal* to the owners and captains of merchantmen on behalf of the brave seamen who navigate those ships, and grieve with you over the miseries those noble fellows are compelled to endure from the want of common attention to their accommodation in their floating dwellings, so as to secure their health and comfort. One is really *ashamed* to reflect on the inhumanity and meanness of those persons who stand in the responsible position of their employers, who grow rich by their labours and perils, in failing to provide decent and dry sleeping places—proper food, and medical ameliorations for this invaluable class of men; men whose services can never be dispensed with in carrying on the intercourse of nations. Soldiers will become less and less needful as the world advances in civilization, and Sovereigns and Senates become more imbued with the spirit of CHRISTIANITY; but a period will *never* arrive in the world's history in which the sailor's services can diminish in value.

What, then, is the duty of Great Britain to her seamen? Certainly to cherish, to *protect*, to improve their physical and moral condition to the *uttermost*. And to this end should not the eloquence of an especial advocate of the Sailor's Rights be employed? an M.P. for seamen, a Mariner's Member, one who would examine into their grievances, and declare them boldly and persistently before the British Parliament? draw up and carry out by the powerful aid of public opinion, and by the moral force of Members in both Houses of Legislature, who would no doubt be found to co-operate in so great an effort—a SEAMAN'S CHARTER, for the protection of his person from injury by violence, by *inhuman negligence* in reference to his *food, lodgings, and medical necessities*, and to afford to his mind also that nourishment and consolation which his peculiar perils require. Such a Senator supplied merchant-captains, like Captain Toynbee, with information and suggestions, and taking counsel with an Editor or Editors like yourself, of the "true blue" *Nautical Magazine*, would soon effect great changes in the characters and condition of the mariners of this country; and I know of no field for the patriot, and man of genuine principle and talent, that would bring in such abundant honour to the Senator who would occupy himself therein.

* See *Nautical Magazine* for January, 1867.

Earnestly praying that your labour may not be in vain, but that you may see much fruit before the conclusion of the year 1867 (so well inaugurated by you with an appeal so worthy of a national response), believe me to remain

Yours faithfully,

PHILIA HUMANITA.

To the Editor of the Nautical Magazine.

Nautical Notices.

[Communications for the Editor of the Nautical Magazine to be addressed to him at 31, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 45.)

Name.	Place.	Position.	F. or R.	Ht. in Feet	Dist in Mls.	[Remarks, &c. Bearings Magnetic.]
81. Port Natal	The Bluff	29° 52-8' S., 31° 3-6' E.	R.	202	24	Est. 23rd January, 1867. (a.)
82. Oran	Algeria	.....	..	..	3	Said to be a green light.
Barcelona	Mole End	Changed to	R.	33	4	Est. 7th November, 1866. Was a green light.
Nisita Rock	Italy	See Notice	..	..	..	(b.)
Messina Strait	Sicily	Pace	..	..	..	Light discontinued.
83. Calais	.....	.....	..	..	..	Tide light altered. (c.)
Shoals mark'd	by a beacon	.....	..	..	..	(d.)
84. Schelde En- trance	Walcheren S.W. coast	N. of Zoute- lande	F.	46	10	Est. 1st December, 1866.
Oost Gat	Ditto	S. of Kaap- duinen	F.	47	} 10	Ditto. See note (g.)
			F.	90		
1. Spithead	Temporary	.....	..	..	..	(e.)
Menai Strait	For bell	.....	..	..	..	(f.)
2. Lowestoft	England	East coast	F.	40	11	Est. 15th January, 1867. Red light. (A.)
Cockle Sand Buoy	Altered	See note (i)	..	..	..	(i.)
3. Espozenda Bar	Portugal	41° 31-4' N., 8° 40-5' W.	F.	45	7	Est. 24th December, 1866. Red. In the old Fort.
4. Almadie Point	Cape Verde	14° 45-1' N., 17° 32' W.	F.	85	8	Est. 1st December, 1866. Red.
Cape Manuel	Ditto, Gorce Bay, West Point	14° 38-9' N., 17° 28-5' W.	F.	170	8	Est. 1st December, 1866. Red.
5. Cape Cou- ronne	France South coast	43° 19-5' N., 5° 3-1' E.	R.	55	11	Est. 1st January, 1867. Red. Interval of revolution 20 seconds.
Villa Franca	Ditto, ditto	Lazaretto	F.	47	4	Est. 1st January, 1867. Red.
Port St. Jean	Ditto, ditto	East Mole Head	F.	26	4	Green.
Port of Calvi	Corsica	N.W. coast	F.	31	4	Est. 1st January, 1867. Red.
Port of Calvi	Corsica	N.W. coast	F.	97	11	Est. 1st January, 1867. At foot of Citadel.

F. Fixed. Ff. Fixed and Flashing. R. Revolving. I. Intermitting. Est. Established.

(a.) 81.—Directions.—The light on Cape Natal not being visible from the Aliwal shoal, take care on coming from the South-west not to approach the

shore nearer than 4 miles, or to a less depth of water than 40 fathoms, until the light is well made out from the deck. Then standing in bring it to bear N.E.b.E., so as to keep outside all known dangers while South of Umlazi river ($9\frac{1}{2}$ miles from the lighthouse). When to the northward of this river bring the light to bear more northerly, keeping a long mile from the land; and when it bears W.S.W. haul in to the northward for the anchorage, anchoring in $8\frac{1}{2}$ to 10 fathoms water, with the light S.W. or S.W. $\frac{1}{2}$ S. one mile.

All bearings are magnetic. Variation 27° West in 1866.

The *Cape Argus* of the 19th of November last has the following somewhat different notice,—viz., The light is a second class dioptric revolving white light, attaining its greatest brilliancy once every minute, and will illuminate an arc extending from N., round by E. and S., to S. 69° W., being visible from a ship's deck 24 miles in clear weather.

(b.) 82.—A rock has been discovered in the middle of the port of Nisita in the Gulf of Naples, Italy. It has two heads, on which are 8 feet water with 20 to 26 feet around it; its approximate position is with the lighthouse on the mole bearing W.S.W. $1\frac{1}{2}$ to 2 cables, and the North extreme of Nisita island in a line with the highest summit of cape Miseno.

The notice does not express whether the bearing is magnetic or true.

(c.) 83.—After the 15th day of December, 1866, the following alteration will be made in the tide lights at the port of Calais, France.

The light at the end of the East jetty will be accompanied by two small *fixed red* lights, for indicating the depth of water in the Channel.

The white light alone indicates a depth of 10 feet water throughout the whole length of the channel. A *red* light *below* the white one indicates a depth of 13 feet. A *red* light *above* the white one indicates a depth of 16 feet; and the three lights together a depth of 20 feet

(d.) 83.—*Beacon on the Coserow and Vineta Shoals, on the Prussian Coast of the Baltic.*—The Prussian Government has given notice that a beacon post has been placed outside and eastward of the Coserow and Vineta shoals on the coast of Pomerania, Prussia, painted *black*, with two *black* balls one above the other, marked with the letters C. & V.U.; it is 25 feet high, stands in 6 fathoms water, and from it the Streckelberg beacon bears S.b.W. $\frac{1}{2}$ W. nearly 2 miles; it can be seen from a distance of about 4 miles.

(e.) 84.—*Temporary Lights at Spithead.*—Alterations having taken place in the temporary lights on the Forts building and other places at and in the vicinity of Spithead, this is to give notice that the following lights are now exhibited:—

1st. On a fort building at the entrance of Brading haven, near St. Helen's point, a *fixed green* light, 38 feet above the level of the sea.

2nd. On a fort building on No-mans-land shoal, a *fixed red* light, 38 feet above the level of the sea.

3rd. On a fort building on the Horse sand, a *fixed white* light, 34 feet above the level of the sea.

4th. On a pile pier erected on the Sand head, midway between Ryde and No-mans-land, two small *fixed white* lights, bearing from each other N.N.E. $\frac{1}{2}$ E. and S.S.W. $\frac{1}{2}$ W., distant 215 yards, the southern light being 31 feet and the northern one 15 feet above the level of the sea; the No-mans-land light bearing from the latter S.E.b.E. $\frac{1}{2}$ E.

The buoy marking the Sand head being only 18 yards from the pile pier has, for the present, been removed.

5th. On a fort building on the Spit sand, a small *fixed white* light, 34 feet above the level of the sea.

(f.) 1.—*Fog Bell, Menai Straits.*—The Corporation of the Trinity House, London, has given notice, that on and after the 15th day of January, 1867, a

large bell will be sounded continuously, from the Menai Lighthouse during the prevalence of fogs.

All bearings are magnetic. Variation at Spithead 21° W. in 1867.

(g.) 84.—Three new lights are established in the Oost gat at the entrance of the Schelde, on the S.W. coast of Walcheren islands, Netherlands.

1st. A *fixed* white light on a sandhill a little north of Zoutelande, visible between the bearings of N. to N.N.W. $\frac{3}{4}$ W. It is 46 feet above the ordinary high-water level, and in clear weather should be seen from a distance of 10 miles. West Kapelle light bears N.b.W. $\frac{1}{4}$ W. from it.

2nd. On the sandhills South of those called Kaapduinen two *fixed* white lights are placed, bearing from each other N.N.W. $\frac{1}{4}$ W. and S.S.E. $\frac{1}{4}$ E., distant 126 yards. They are visible between the bearings S.b.E. $\frac{1}{4}$ E. to S.E. $\frac{1}{4}$ E. The Northern light is elevated 47 feet, and the Southern one 90 feet, above the level of the sea, and in clear weather should be seen from a distance of 10 miles.

Directions.—Coming from seaward for the entrance of the Oost gat, when West Kapelle light bears East, bring the two lights of Kaapduinen in line S.S.E. $\frac{1}{4}$ E., and keep them so until the Zoutelande light is in a line with the West Kapelle light; then keep these latter lights in line, taking care to avoid the white buoy off the Southern part of the Zoutelande bank. As the buoy of the Nolle plaat is placed on the line of these lights care must be taken, after sighting Flushing light, to avoid it.

(h.) 2.—*Alteration of Lights at Lowestoft.*—The Low light at Lowestoft will be removed from its present position to the new lighthouse recently erected on the point of Lowestoftness.

It will be a *fixed red* light, visible from seaward between the bearings S.S.W. and N.E. $\frac{3}{4}$ N. and *white* from those bearings inshore.

The new Low lighthouse bears S.S.E. $\frac{1}{4}$ E. and is distant 990 yards from the High lighthouse.

The Northern edge of the *red* light bearing S.S.W. clears the North-west end of the Holm sand, and the Southern edge bearing N.E. $\frac{3}{4}$ N. clears the West side of the Newcome sand.

To facilitate the rounding of the Ness by night, the present *red* light on Lowestoft North Pier Head will be masked from the bearing S.W.b.W. $\frac{1}{4}$ W. into the shore, and a new *red* light will be exhibited from the tower of Lowestoft High light, 12 feet below the light, visible from seaward between the bearings, S.W. $\frac{1}{4}$ S. to S.W. $\frac{3}{4}$ W.; on opening this light from the Northward, vessels should edge towards the Low light until the North Pier light opens, then run for it until the Low red light changes to white.

In foggy weather a bell will be sounded from the Low lighthouse three times in quick succession every quarter of a minute.

(i.) 2.—*Buoy on the Cockle Sand, Yarmouth Roads.*—In consequence of the Cockle Sand, in Yarmouth Roads, having extended to the Northward, the name on the buoy now called *Cockle Fairway* will shortly be altered to *North Cockle*, and masters of vessels are cautioned against passing to the Westward of this buoy.

All bearings are magnetic. Variation $19^{\circ} 35'$ W. in 1867.

KARACHI OR KURRACHEE.—*West Coast of Hindoostan Pilot, No. 1.*

Directions for approaching Kurrachee Harbour, and draught for vessels at different seasons of the year for crossing the bar.

From Westward.—Ras Muari or Cape Monze, distant 18 miles W. $\frac{1}{2}$ N. from the western entrance of Karáchi, is high and bold. In the S.W. monsoon ships should make this headland and proceed eastward

for Manora point, keeping the latter on any bearing to the north of East.

Manora point, which forms the west side of Karáchi harbour, is 100 feet high, and can be approached to within half a mile on any bearing from North to East or to a depth of 5 fathoms water. On this point stands the lighthouse and signal station, to which attention should be given to all directions signalled by it.

Manora point lighthouse is in lat. $24^{\circ} 47' 3''$ N., long. $66^{\circ} 58' 2''$ East of Greenwich; the light is fixed 119 feet above the level of the sea, and in clear weather should be seen from a distance of 17 miles, but in the haze of the S.W. monsoon is often not seen from beyond 7 to 9 miles.

From the Southward.—At all seasons the coast of Sindh, from the parallel of $23^{\circ} 30'$ N., should not be approached to less water than 14 fathoms, which depth will be 7 or 8 miles from the dangerous banks extending 7 miles from the Hujamree, Kediwarry, and Kokowarry mouths of the Indus river, within several places a depth of 10 fathoms on their extreme edge. The set of currents being very uncertain, the coast low, and in clear weather scarcely visible from the outer edge of the banks, too much attention cannot be paid to the LEAD in passing these banks.

Masters of ships should not, under any circumstances, attempt to enter Karáchi Harbour without a pilot.

Anchorage in the Roads.—From 15th September to the end of March ships may anchor with the lighthouse bearing N.b.E. to N.N.E. one mile, in 7 fathoms water, and during the months of April and May the lighthouse should bear N.N.E. to N.E., a mile and a half, in 8 fathoms. From June to the middle of September ships should never anchor, but stand off and on, keeping the lighthouse N.b.E. to N.E., distant one to two miles until they are boarded by a pilot or directed by signal.

It is high water at full and change at 10h. 30m.; rise and fall $9\frac{1}{2}$ feet.

Depths on the Bar.

Time of Year.	At Springs.	At Neaps.
	Feet.	Feet.
In the S.W. monsoon, May to September . . .	22 to 23 $\frac{1}{2}$	19 to 18
„ fine season, Oct. to April	20 to 21 $\frac{1}{2}$	19 to 18
From 15th September to 15th April smooth bar, sea- son for loading	20	18
From 15th April to end of May, also 15th to 30th September*	18 $\frac{1}{2}$	17 $\frac{1}{2}$
From 1st June to middle of September†	17	15

* These are intervals before and after the S.W. monsoon.

† In average weather of S.W. monsoon.

There are days during the south-west monsoon when the sea on the bar is so heavy that ships at the above draught cannot cross it with safety, and it is not advisable for vessels above 600 tons burden to attempt it in this season.

No variation in 1866.

SOUTH PACIFIC OCEAN.

The following remarks have been received from Captain Charles W. Hope, R.N., Commanding H.M.S. *Brisk*.

Samoa or Navigator Islands.

Manua or Manua-Tele Island.—With the trade wind vessels may anchor off the village of Feleasau, in a small bay east of the N.W. point of the island. The *Brisk* anchored there in 15 fathoms and found tolerable shelter, but had to be ready for starting on any change of wind. The landing place is up a very narrow passage through the reef, only wide enough for a whale boat, and dangerous with much swell.

Olosinga Island was visited by the *Brisk*, hove to on its north side, but found no anchorage. The landing is difficult at low water on account of the coral reef.

Savaii Island.—Matautu Roadstead. To anchor off Matautu give the reef projecting from the point a berth of half a mile, as there is shoal water off it; the *Brisk* rounding the reef at the distance of two cables, had 5 fathoms, and there is said to be less. The plan from the United States survey shows no indication of this shoal patch, although well known to residents.

Wallis Island or Uvea.

Captain Hope confirms Captain Sir Everard Home's account of the harbour off the south end of this island in Findley's South Pacific Directory, and adds, "The channel up to the inner anchorage is tortuous between patches of coral." In favourable weather these are easily seen and present no difficulty to a steam vessel. No ship should proceed to the upper anchorage without a pilot if to be had.

Rotumah Island has two anchorages on its north side.

Lee Harbour—an open bay about a mile and a half from the West end of the island; is well marked by a high wooded bluff on its western side, with a precipitous red sandstone face to the water's edge. The *Brisk* anchored in 15 fathoms, with the east point of the bay bearing N.E. $\frac{3}{4}$ E., and the centre of Emery island W.b.N. $\frac{1}{4}$ N. the Easternmost of a chain of islets to the North-west of Rotumah, is high, wooded, and inhabited. There is a clear channel between these islets and Rotumah, but said to be unsafe. The Westernmost islet of this chain has a remarkable perpendicular cleft across it through which the sea passes.

North-east Roadstead is about 5 miles Eastward of Lee harbour, at the N.E. point of the island, close to the West of two islets off the point, connected to each other and to the main island by a coral reef.

This anchorage is sheltered during the trade wind season, but a troublesome sea sets round the island, and Lee harbour is a much superior roadstead. The *Brisk* anchored at this North-east roadstead in 11 fathoms, sand, with the outer extreme of the outer islet E.b.N. Two cables further in would be a better berth, with more shelter from the trade wind.

Curtis Island was not seen by the *Brisk* in the position assigned to it in the Admiralty Chart. Captain Hope obtained information from the Master of an American whale ship that it was in $178^{\circ} 38'$ West; agreeing nearly with the longitude given by D'Entrecasteaux in 1793 ($178^{\circ} 43' 20''$), as also by D'Urville in 1827, $178^{\circ} 37' 20''$ West of Greenwich. Applying to the position of Raoul or Sunday Island, as determined by Captain Denham in 1854, the distance stated by D'Entrecasteaux, it would place Curtis Island in lat. $30^{\circ} 36'$ S., and long. $178^{\circ} 37'$ W.; which cannot be far from the truth.

All bearings are magnetic. Variation at Rotumah $9^{\circ} 30'$ E. in 1866.

PORTSMOUTH BAR.—In our copy of the Hydrographer's Notice of Change in this Bar, we said in page 44 of our last number, "Since dredging, the deepest water over the bar (50 feet) lies to the westward of the former fairway course."—should be "Since dredging, the deepest water over the bar lies 50 feet to the westward," &c.

PROTECTION OF OUR IRON-CLAD SHIPS.

Her Majesty's troop ship *Himalaya* having completed her refit at Portsmouth with new boilers, &c., and made a satisfactory trial of her speed in Stokes bay, has just been taken into dry dock to be coated with Messrs. Peacock and Buchan's last improved Composition. This fine iron troop ship has been thoroughly examined after *thirteen* years of constant service, eleven of which as a troop ship and naval transport to and from all parts of the world, and was found, on close and rigid inspection, to be intact in her bottom plates and rivets—the only exception being the necessity of shifting the plates around and in contact with the blowing-off cocks, by the action of the *interior* copper pipes, which had eaten these iron plates away by galvanic action; the rest of the bottom was perfect, and without a single barnacle, although she had been upwards of a year out of dock. As a remarkable and very curious comment on this, the face of the screw propeller itself was covered with grass and barnacles, and the bottom, we learn, had not been hogged or scrubbed during the whole period! We understand that the *Himalaya* has always been coated with Messrs. Peacock and Buchan's inexpensive Composition, over red lead, ever since she was launched in 1853. Her Majesty's iron steamer *Jackal* is also now in dry dock at Keyham, Plymouth, to be coated with the same Composition, which seems to be well established, a new contract having, we understand, been lately made with Her Majesty's Storekeeper General. This is the ship that we learn foundered at Greenock

a short time since, by her bottom plates being eaten through with holes like those of Her Majesty's yacht *Fairy*, by experiments with some preparation of copper!

After the examination of Her Majesty's iron ship *Valiant*, of 4,063 tons, the other day at Portsmouth, experiments having been made with four different kinds of untried compounds on the bottom of this *new* and beautiful iron-clad ship, the unsatisfactory and pernicious results of which trial are set forth in the *Standard* of 10th and *Times* of 11th ult., as to voltaic and galvanic action, &c., some of the compounds used containing preparations of mercury and copper. We have much pleasure in recording the continued *satisfactory* results of Messrs. Peacock and Buchan's nutritious and well-established Composition, which is so highly spoken of in Her Majesty's Dockyards and the Royal Postal Mail Services, &c., all over the world, not only for protecting the iron plates and rivets from corrosion, but also in keeping off the weeds, barnacles, &c., for a lengthened period, and at considerably less cost than preparations of copper, mercury, &c. It is reported in the *Standard* that the ribbon tangle algæ on the bottom of the *Valiant* were 7 feet long!

THE NEEDLE GUN.

We little expected to hear of the Needle Gun in the Pacific Ocean, yet here is an account of a Prussian ship of war at the Sandwich Islands astonishing the natives with its wonderful power. Well, be it so; all we can say is, they are right. Have our ships anything of the kind? or do we still glory in a weapon something akin to the *old Brown Bess*?

"Among the curiosities on board the Prussian war steamer *Vineta*, now in port, is the 'needle gun,' which the gentlemanly officers show to their visitors with a commendable national pride, as the weapon which gave the Prussian army the victory in the recent war with Austria. One of the officers tells the following incident, illustrating the destructiveness of this deadly weapon. During one of the battles, a single Prussian battalion found itself confronted with a single Austrian battalion, each numbering about 1,000 men. From some cause, there was a long standing grudge between the officers or men of these particular battalions, and each accepted the challenge to mortal combat, marching firmly and steadily to the contest. The commander of the Prussian forces having the fullest confidence in the superiority of his weapons, told his men not to fire till he gave the order, but for each man to be cool and take good aim when he fired. On they marched, the Austrians firing at random, volley after volley, with little or no effect, till the two battalions came within two hundred yards of each other. Then the order was given to 'halt and fire.' Two rounds were discharged—two thousand shots fired—and only sixty Austrians remained standing, as witnesses to tell the terrible effect of the Prussian 'needle gun.'

"All visitors on board this ship, who wish to see this gun, are shown all its parts, and even its cartridge is taken to pieces, to exhibit its construction. The great secret consists in the composition of the 'fulminating powder' into which the needle is thrust. The English have invented a substance somewhat similar, but not so sure or reliable. The Prussian powder, it is said, will preserve its quality for years, and is as effectual in a rain as in dry weather. It is certainly a wonderful war weapon. A marine on the steamer fired five shots at the 'spar buoy,' distant say 800 yards. Four out of the five shots hit the buoy. It is morally certain that in any future wars, the army that uses this weapon against another relying on the ordinary kind, will be sure to conquer. It will carry death and dismay to its foes."

We find the foregoing in a Sandwich Island paper, and add to it the following from the same source, as the information may hereafter prove of interest:—"On Saturday afternoon, October 12th, the Prussian steam sloop of war *Vineta*, Captain Kuhn, arrived at this port (Honolulu), 35 days from Callao, en route for China. She will remain in port three or four weeks before proceeding to her destination. The *Vineta* carries 28 guns, and has 320 men. She is the first Prussian war vessel that has ever visited this port. In fact, Prussia has not been known as a naval power until recently, but now that she has secured some safe ports on the Baltic, she is constructing a navy, and doubtless her ships and flag will ere long be seen in every port.

"The following is a list of her officers, for which we are indebted to F. A. Schaefer, Esq., Prussian Consul:—Captain Kuhn; Captain Lieutenant Donner; Lieutenants Rodenacker, von Kall, Ditmar; Sub-Lieutenants Valois, Georgi, von Reiche; Lieutenant of Marines, Sack; Staff Surgeon, Dr. Metzner; Assistant-Surgeon, Dr. Reger; Paymaster Wald; Midshipmen Martins, Holtz, Count Haugwitz, Schwarzklose, Count Schwerin, von Lepel Gnitz, von Arnim, Aschmann, Cochins, von Holleben, Meyer, Dautwitz; 8 warrant officers, 318 petty officers and men."

ROYAL NATIONAL LIFEBOAT INSTITUTION.

His Royal Highness the Prince of Wales has signified his intention, through General Knollys, to take the chair at the forthcoming annual meeting of the Royal National Lifeboat Institution, which is expected to take place about the latter part of the present month. The Prince and the Princess of Wales have always manifested considerable interest in the great and national work of the Lifeboat Institution.

On the first arrival of the Princess in her Majesty's yacht in Margate Roads, the lifeboat of the institution on that station gave her Royal Highness the earliest welcome to the shores of England. Again: the Manchester branch of the institution, on the representation of the Rev. E. Hewlett and R. Whitworth, Esq., received permission from his Royal Highness to name one of their nine boats the *Albert Victor*,

after his eldest son. Since then, that lifeboat has contributed to the saving of thirty-one shipwrecked persons.

The City of Bristol, through Admiral Tryon, about three years ago presented to the institution the cost of a lifeboat, and decided to name it the *Albert Edward*, after the Prince of Wales. The lifeboat was stationed at Padstow, on the coast of Cornwall. The following winter, during a fearful midnight storm, the *Albert Edward* was happily the means of saving, under Providence, seventeen poor fellows from an inevitable death from the barque *Juliet*, of Greenock.

Her Majesty the Queen is also a warm friend of the institution, and sends it every year a subscription of £50.

Thus this great and philanthropic society, which last year contributed to the saving of nearly nine hundred lives from a watery grave, receives the support and sympathy of all classes of the community, and is thereby enabled to accomplish successfully and energetically the national work it has undertaken to do on behalf of our shipwrecked sailors.

It may be mentioned that in nearly every case the poor creatures would have perished in the absence of the gallant services of the lifeboats. The lifeboats of the institution at Looe, Exmouth, Kingstown, Poole, Dungeness, Teignmouth, Walmer, North Deal, Kingsgate, and St. Andrew's also put off during the same terrible weather, but, owing to the fury of the storm, in many cases it was impossible to contend with it. The intense cold and the tempest rendered it impossible in some cases to propel the lifeboats against the mountainous waves. However, it is most satisfactory to know that in no single instance has there been a lack of gallant and willing men, who, with their lives in their hands, are ever ready to put off in the lifeboats of the institution.

A contribution of £350 had been received by the institution on behalf of the Solicitors and Proctors' Lifeboat Fund, through E. Ouvry and W. M. Wilkinson, Esqrs.: the committee decided to station the lifeboat at Winchelsea, on the coast of Sussex. The Solicitor-General, Sir J. B. Karlake, Q.C., had also forwarded to the society a liberal donation of £10. Mr. Thomas Davis, of Chippenham, had collected £250 amongst his fellow commercial travellers in the West of England, in aid of the cost of a lifeboat to be called the *Western Commercial Traveller*. The commercial travellers in the North of England had already collected the expense of two lifeboats, which were stationed respectively at Piel, Lancashire, and Castletown, Isle of Man. A contribution, amounting to £150 6s. 9d., had been received by the institution through Messrs. Cassell, Petter, and Galpin, and the Rev. Teignmouth Shore, towards the cost of a lifeboat to be called *The Working Man*.

Legacies had recently been bequeathed to the society by the late Miss Laing, of Abergele, £50; and the late Mrs. Mary Clarke, of King's Lynn, £30.

New lifeboats had been sent during the month of December to Lyme Regis, Looe, New Brighton, Tyrella, and Port Logan: the railway

and steam packet companies had, as usual, kindly given the boats free conveyance to their destinations. Two lifeboats were also forwarded to Bombay: they had been built by the Messrs. Forrestt, under the superintendence of the institution, for the India Board.

Reports were read from Captain Ward, R.N., the inspector, and Captain Robertson, R.N., the assistant-inspector of lifeboats, on their recent visits to different lifeboat stations on the coast.

Payments amounting to £2,400 were ordered to be made on various lifeboat establishments. The accounts of the institution for the past year were ordered to be sent to Mr. G. C. Begbie, the public accountant, who had been the auditor of the society for the past fifteen years.

New Books.

CONSIDERATIONS GENERALES sur la Mer Méditerranée, &c. Par A. Le Gras, Officier de la Légion d'Honneur, &c. Paris.

This work is a sequence of similar books treating severally on the Atlantic and the other oceans, all of which have been translated into our own pages, and now form separate treatises, in high estimation among our seamen. There is, after all, as much in knowing the prevailing or accidental winds and currents of an ocean to the benefit of making good passages, as there is in knowing the navigation of their coasts when on them. And this is a point well understood by our neighbours in its full value. The work before us, we perceive, starts on our own foundations, derived from the Spanish authorities in the Derrotero, to which is added extracts and details from many sources stated in the preface, so as to present a perfect work down to the present day. It would be well if we ourselves paid more attention to these matters.

SUN'S TRUE BEARING: or, Azimuth Tables computed for Intervals of Four Minutes, between the Parallels of Latitude 30° and 60° inclusive. By J. Burdwood, Staff-Commander R.N., Naval Assistant in the Hydrographic Department, Admiralty. London.

We have already noted our opinion of this work during its progress, and now heartily congratulate our seamen on their having a set of Tables with which, by means of their time, they can take out the sun's true bearing by inspection from the page and column of latitude and declination. That subtle deranging element of deviation, so mischievous in its effects, has at length received its death-blow. There need be now no hesitation as to its amount when the sun is not obscured; and even when the declination of the moon or principal stars is not more than 23° North or South, the author has shown how the same tables may be applied for them as for the sun, simply by finding the hour angle of the star or moon, and using it as the hour angle of the sun, or apparent time. And should all these bodies be obscured, the enemy deviation must be inferred from previous observation. We consider the author has hereby done an invaluable service to his brother seamen, and raised an imperishable monument to his own name, as having rendered good service in his day.

THE PROGRESS OF ENGLAND. A Poem. Edinburgh: W. P. Nimmo.

Some master mind has been at work here, not only wielding with skill and excellent taste the powers of that beautiful art which he (we say, for she it

could not be) has chosen to convey a general view of England and her colonial possessions, but also with ample knowledge of the subject before him. The verse is smooth and pleasant; the language rich in expression, without the straining of a word; the sentiment throughout sensible and manly; and the information most comprehensive. The poem occupies half the book, of some ninety pages or so, the remainder being devoted to the author's ideas on the organization of the British Empire, which he promises to accompany with a map in another edition. He has also some good ideas touching our English expression, tending to convey by certain characters what can only be learned by oral communication. We shall be glad to see the more matured work. Since "Progress" is past, and certainly not to be found in this poem, would not his title bear revision? Might not that word be omitted? leaving only "England and her Colonial Empire." But the author is a man of good taste, and doubtless can name his child as appropriately as he has beautifully constructed it.

New Siberia and the Isle of Lakon are, for the most part, only an agglomeration of sand, ice, and elephants' teeth. At every tempest the sea casts ashore fresh heaps of mammoth tusks, and the inhabitants are able to drive a profitable trade in the fossil ivory thrown up by the waves. During summer innumerable fishermen's barques direct their course to this isle of bones, and in winter immense caravans take the same route, all the convoys, drawn by dogs, returning charged with the tusks of the mammoth, weighing each from 150 lb. to 200 lb. The fossil ivory thus obtained from the frozen North is imported into China and Europe, where it is employed for the same purposes as ordinary ivory, which is furnished, as we know, by the elephant and hippopotamus of Africa and Asia. The isle of bones has served as a quarry for this valuable material for export to China upwards of 500 years, and it has been exported to Europe for upwards of 100 years; but the supply from these strange mines remains undiminished. What a number of accumulated generations does not this profusion of bone and tusks imply!

CHARTS AND BOOKS PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in January, 1867.—Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

750.—India, West Coast, Sheet 12, Cundacudvoo to Aujengo, Lieut. W. B. Selby, I.N., 1852, corrections to 1866, (2s. 6d.)

751.—India, West Coast, Sheet 13, Aujengo to Cape Comorin, Lieut. W. B. Selby, I.N., 1851, corrections to 1866, (2s. 6d.)

Hydrographic Office Notice, No. 1.—Directions for Approaching and Crossing the Bar and Harbour of Kurrachee or Karáchi.

Hydrographic Office Notice, No. 2.—South Atlantic Ocean. Report on seeing a supposed Rock off Rio Grande do Sul.

Hydrographic Office Notice, No. 3.—China and Japan Seas. On Formosa Island, South and West Coasts. Also, South Coast of Japan.

EDWARD DUNSTERVILLE, *Commander, R.N.*

Admiralty, Hydrographic Office, 21st January, 1867.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

MARCH, 1867.

QUALIFICATIONS OF MERCANTILE MARINE OFFICERS,—
The First Mate.

[The following communication from an experienced Commander of our Merchant Service is entitled to the consideration of those who wish to see the improvement of our Mercantile Marine.]

To the Editor of the Nautical Magazine.

Sir,—The writer of a leading article which appeared in the *Shipping Gazette*, of the 28th of January, quotes a passage from a published letter of Mr. W. S. Lindsay, in which that gentleman states “that the standard of theoretical knowledge” required of Masters and Mates at the Local Marine Board Examinations “is pitched too high.” So far from this being the case, there is, strictly speaking, no theoretical knowledge of Navigation and Nautical Astronomy required at all. The whole of the examination for the grade of Ordinary Master is eminently practical, and falls very far below the standards of the French, Dutch, and Prussian Mercantile Marine Examinations.

As Mr. Lindsay is a very high authority on all matters connected with shipping, and as this statement of his is calculated to convey a false impression, I have subjoined a statement of the subjects on which English officers are examined; and, side by side, the subjects of examination for a Mate, first class, in the Prussian Merchant Service.

English Ordinary Master.

1. The use of logarithms.
 2. Common day's work, or dead reckoning, and parallel sailing.
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Prussian Mate, First Class.

1. The use of logarithms, and a knowledge of geometry and mensuration.
2. Day's work, and a knowledge of plane trigonometry.

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English Ordinary Master.

3. Latitude by meridian altitude of the sun, fixed stars, and by reduction to meridian.

4. Knowledge of the tides.

5. Variation of the compass by amplitudes and azimuths, and deviation of the compass.

6. Longitude by chronometers by altitudes of the sun, only.

7. The use of charts, sextants, and common log.

8. The laws relating to charter parties, bottomry, Lloyd's, and the shipping of crews, &c.

9. Seamanship, including the stowing of cargoes, &c.

Prussian Mate, First Class.

3. Latitude by meridian altitude of sun, fixed stars, reduction to meridian, and by moon, pole-star, and double altitudes.

4. Knowledge of the tides.

5. Variation of the compass by amplitudes and azimuths, and deviation of the compass.

6. Longitude by chronometers by altitudes of the sun, fixed stars, moon, and planets.

7. The use of charts, sextants, common log, and a knowledge of the use and construction of barometers.

8. Maritime law.

9. Seamanship.

In addition to the above, a Prussian mate, first class, must possess a knowledge of the following subjects:—10. The longitude by lunar observations. 11. How to find the errors of chronometers by equal altitudes of the sun. 12. Physical geography of the sea, law of storms, &c. 13. Spherical trigonometry, as applied to navigation and nautical astronomy.

It will thus be seen that a Prussian mate, first class, is far ahead of an English ordinary master in educational requirements. I am well aware that the qualifications demanded for the grade of extra master are of a high order; but it must be remembered that the examination for this grade is not compulsory, and that five-sixths of our foreign-going ships are commanded by officers holding ordinary class certificates. It is no breach of charity to suppose that half of these men are ignorant of how to find the longitude by lunar observations. Now, imagine one of Mr. Lindsay's magnificent ships full of passengers, with chronometers broken down, and her officers dependent on dead reckoning for a knowledge of the ship's longitude. So far from the standard of education in the British Mercantile Marine being "pitched too high," there can be little doubt that it would be a benefit to all concerned if it were pitched a little higher. A knowledge of how to find the longitude by lunar observations is of the utmost importance to a ship-master, and has saved many a noble ship and valuable lives from destruction.—I am, sir, yours, &c.,

AN OLD SAILOR.

{ ⁷ NOTES OF RUN FROM MONTE VIDEO TO VALPARAISO,
*Through the Straits of Magellan, in May, 1865, on board the Pacific
 Steam Navigation Company's Steamer "Pacific."*

By J. B. Caldbeck, Passenger.

The *Pacific* left Liverpool on the 19th of April, to take up her station on the West coast of America, between Valparaiso and Panama. Time underway from Liverpool to St. Vincent, Cape de Verde Islands, 216 hours; average speed made good, 11·43 knots. Arrived at Monte Video on the 14th of May. Hours underway from St. Vincent, 322; and average speed per hour 11·04 knots. We remained five days at Monte Video, that great length of time having been occupied in receiving 349 tons of coals, owing to the unsettled state of the weather, and which was made a pretext of by the boatmen to excuse their own want of energy, as well as the inefficiency of their boats; the latter being generally open ones, and carrying only from seven to twelve tons of coal, are too small to lie alongside in the slightest joggles. The coal agents, to do them justice, were very anxious to expedite the work; but the boatmen, a mixture of Basques, Italians, Portuguese, and natives, are very independent,—the high rate of wages (two dollars a day when afloat) tending to make them both indolent and exacting. A great reform also is required both in the way of having steam tugs* to tow the lighters off, and in having the latter to be craft of a size and strength enabling them to lie alongside in average weather. When I consider how coaling is performed at Point de Galle in the heavy swell rolling in during the S.W. monsoon, and the expedition used at St. Vincent's, Cape de Verde, and also at Aden; and having seen at the latter place 400 tons put on board the Peninsular and Oriental Steam Navigation Company's ship *Malta* in four hours, I feel that it would be for the advantage of Monte Video were the coaling to be less at the mercy of the lazy and independent boatmen. Our coal, as I was informed on shore, cost, when put on board, £3 4s. 6d. a ton.

The removal of the light on the Island of Lobos was caused, so I was told, in order that the seals should not be frightened away, and was done in deference to the wishes of the proprietors of the seal fishery. It would, however, greatly increase the safety of the navigation of the entrance of the Rio de la Plata were it replaced without delay.

Upon leaving Monte Video on the 18th of May, the *Pacific* steered direct to Cape St. Antonio, passing to the westward of the Archimedes and English Banks. The preferable route, however, particularly for vessels of large draught of water, is between the Island of Flores and the lightvessel on the English Bank, making a good offing to the eastward of the latter and of the French Bank, and then steer for Cape Corrientes; as in running so great a distance as 86 miles *across* the

* Mr. R. T. Wilson, coal contractor, was fitting a screw launch as a tug.

mouth of the river for a low point like Cape St. Antonio, there might be a risk of getting among the Turgu Shoals; and, after all, a vessel has to haul out before shaping a course for Cape Corrientes.

During our run of over 1200 miles from Monte Video to the Straits, a well-rigged screw steamer might have made 600 under canvas alone, screw being either lifted or disconnected; and for nearly the entire distance sail could have been carried as an assistance to the engines.

Although the sun's altitude was low, and its movement in arc very slow, yet ample compensation was made by the great brilliancy of the planets and stars and the clearness of the horizon; frequent opportunities being afforded during the night, and also at the morning and evening twilights, for ascertaining the ship's position by observation.

Before entering the Straits a favourable opportunity should be taken, in addition to the usual daily series of compass observations, of getting azimuths with the ship's head round the compass. A card also would be found useful for immediate reference, having calculated upon it for those days the ship would be expected to be in the Straits; a Tide Table for the principal positions and anchorages for the dates differing from Full and Change; and also a Table of Sun-rises and Sun-sets—the latter table useful in the winter.

Besides the usual precautions and preparations for navigating narrow waters, it would be advisable before entering the Straits in winter to send down topgallant yards and masts, house jibboom, and make everything as snug as possible aloft for steaming against the westerly winds. The boats should be well griped, so as not to be lifted in the heavy squalls, or Williewaws; boat covers well fast, &c.

Tuesday, May 23rd, 1865.—Strong breezes from S.W., smooth water, and clear weather. 7h. a.m. made Cape Virgins, S.W. 15 miles. Pitch of Cape is abrupt and of a dark colour, and that portion trending to the N. N.W. is tableland, topping a line of cliff having the appearance of light sandstone. It being high water, went over the Sarmiento Bank, passing the Cape, bearing N. N.W. 2 miles distant at 9h. a.m.

Mount Dinero is a low isolated cone, rising from the downs, trending to the westward. Land on Fuegian side of entrance showed as a line of light-coloured cliff.

Dungeness, a shingly spit, is very like its English namesake, and is so low that great care must be taken at night or in hazy weather, particularly when running to the eastward out of the Strait, as it appeared to project like a low spit, overlapping Cape Virgins at an apparent distance of 3 miles to the S.S.E., the Cape then bearing N.E. 12 or 13 miles distant.

Mount Aymond and the Asses' Ears are unmistakeable.

Cape Possession is a high, bold, dark cliff. The centre and extremes are well defined for taking bearings. The cross bearings of this Cape and Mount Aymond are good turning marks when shaping fairway course from Possession Bay to First Narrows.

Orange Peak is merely a swell, or the largest hummock of some

dark sandy-looking hills, but is easily recognized should the weather be clear.

The Great Orange Bank appears to be formidable. We passed it at low water, and saw that it dried a long way out from the shore, and large grassy-looking outlying patches showed high as knolls in several places.

Direction Hills are of a dark brown colour, and show out as if they were *islands* lying off, but close to, a chain of sandhills in the back ground. Some leading marks would materially assist the navigation of this portion of the Strait in hazy weather, when the distant land cannot be identified. I do not think, however, that the Chilian Government would be induced to go to the expense.

At 2h. p.m. entered the First Narrows, a deep passage having steep beaches and a level line of perpendicular cliff on either side. We did not pass Barranca Point until 4h. p.m., having been two hours doing ten miles, the ebb tide running so strongly to the eastward, and which it continued to do until the last moment, when it was met by the flood. The strength of the tide may be inferred from the circumstance of the *Pacific* being a vessel capable of easily steaming 12 knots. 5h. 15m. p.m. brought up in 9½ fathoms mud in St. Jago Bay, and 2½ miles from Valle Point; passed through some anchored kelp when running in. Day has been bright and clear. Snow was lying on Gregory's Range, but none on the lowlands. Thermometer at midday, 45°. Winds variable and light.

Wednesday, May 24th.—a.m. cloudy; light breeze from W.S.W. Weighed at 7h. a.m.; passed Cape Gregory at 8h. 15m. a.m. A good flood making to the westward took us quickly through the Second Narrows. Cape St. Vincent, at their western end, is a fine bold headland. Elizabeth Island, showing dark at a distance when seen under some very high land to the westward of it, was passed about two cables off: it consists of grassy undulating downs, with a bush appearing here and there; the cliffs are of a moderate height. Santa Marta and Santa Magdalena Islands are flat and topped with slight hummocks. Brushwood and trees beginning to show on Patagonian side of the Straits. Wind drawing to the northward, great refraction, tops of very distant glaciers on Tierra del Fuego showing like vessels under sail. Barometer falling rapidly. Mountains on both sides of Strait covered with snow.

11h. a.m. two guns fired and Chilian flag hoisted halfmast on shore. 11h. 30m. a.m. anchored off Sandy Point in 14 fathoms. Flagstaff N.W. ¼ N. Extreme North point N. ¼ E., and South point S.b.E. ¾ E. 3h. 30m. p.m. embarked the Governor, Senor Don G. C. Schythe, and family, for passage to Valparaiso. Wind N.W., with heavy rain. Tide very slack at anchorage; cable never taut. Night squally, wind having shifted to S.W., but weather clear.

The settlement of Sandy Point, called by the Chilians Punta Arenas, was commenced upon the abandonment of Point Famine in 1849, and is no longer a penal colony, being kept as a military post to support the pretensions of the Republic of Chile to the "territory of the Magellanes,"

as they style it. The Argentine Republics, however, deny the claims of Chile to the sovereignty of Patagonia and the Straits. The settlement is built under a range of wooded hills, the trees in the neighbourhood being apparently a description of beech, cypress, and laurel; and the land about the villages has a very park-like appearance, the timber being in clumps, with cattle grazing in the opens. There are a church, hospital, barracks, and about fifty houses, inhabited by government *employés* and a few soldiers with their families, the entire population being about 200. The colony possesses only two small boats, but has about 200 head of cattle, a few horses, goats, and pigs. Potatoes, cabbages, lettuces, turnips, and other vegetables, are cultivated with success; but flour and every other necessary have to be procured from Valparaiso, Government sending a vessel about once a year. Should Chile ever be engaged in hostilities with any naval power, the garrison of Sandy Point might be reduced to terrible straits for medicines or other indispensable supplies, unless a stray steamer passing through should be enabled to relieve their necessities. There is some traffic with the Indians in guanacoe skins and ostrich feathers, and the soldiers cut firewood for sale should steamers require it. The colony is healthy, but the climate is inhospitable; snow and rain in winter, rain and violent gusts of wind called Williewaws in summer, appear to denote the only distinction between the seasons.

Sandy Point is the only place in the Strait of Magellan where coal has as yet been discovered; and during the several conversations I had with the late governor upon the subject, I ascertained that it crops out from the side of one of a range of hills 800 or 1000 feet above the level of the sea and eight miles inland from the settlement. The seams show about 200 feet below the summit of the hill, and are overlaid by sand and earth so very loose as to make the approach rather dangerous. This *débris* continually slipping away takes with it masses of coal into a mountain rivulet, and which in time of winter floods rolls them down to the sea, where they, strewing the beach in lumps, have given strangers the idea of inexhaustible supplies being very close to. The dip of the seam is about from N.W. to S.E., and inclinations about 30° in the latter direction. The thickness of some of the seams is stated to be nearly three feet. It is nine years since the exploration at which Mr. Schythe assisted was made, and the coal analyzed by two geologists and surveyors in the service of the Chilian Government, Senor Don Ignacio Domeyko and Senor Don Pissis.* The coal is of tertiary formation; the shells and fossils found were also tertiary. It is thought to be of the same description as the coal procured at Puchoco and Lota, in Chile; and which is sold at the mines for five dollars per ton. It requires furnaces and stoves of a peculiar construction for its combustion. Great inducement, in the shape of high wages, would be needed to secure labour, owing to the rigour of the climate and the isolation of Sandy Point; as much as eleven months

* I afforded the above information to Commander Porcher, of her Majesty's ship *Sparrowhawk*.

having elapsed without communication with Valparaiso, 2,700 miles distant (Monte Video, in fact, being only half the distance). Then the construction of wharf, eight or ten miles of tramway, the necessary plant in the way of machinery, buildings and lighters, together with the expense of roofing in, so as to enable the working of the seams to be conducted without danger, would probably make the Magellan coal mines a very expensive affair. Should however, by and by, the sailing vessels engaged in the West Coast trade be superseded, by auxiliary screw steamers making the Straits of Magellan their highway, a depôt of English coal might be advantageously formed at Sandy Point, or in a sheltered spot like Port Gallant, in Fortescue Bay.

Thursday, May 25th.—Weighed at 7h. 45m. a.m., having been delayed by steam capitan getting out of order. Weather fine, and very clear. 10h. 30m. a.m. passed the ruins of Port Famine,—a few stakes and palings upon a bluff point called Point St. Anne being the remains. The settlement must have been in a very exposed situation, judging by the scathed and bent appearance of the trees in the neighbourhood. Mount Tarn is a fine bold peak, completely covered with snow. 11h. a.m. Calm, with bright sunshine, and close under Cape San Isidro. Passed through a little squadron of fine canoes, each containing four or five Fuegian Indians,—men, women, and children. A couple of wolfish-looking prick-eared dogs standing in the bows of the canoes completed the party. These hideous and squalid looking people were very anxious that we should stop, forming a line across our bows, we clearing them with difficulty. They waved dirty flags, yelled, gesticulated, and in their excitement throwing back their only garment, a mantle of skins, exhibited a full view of their *very* grimy bodies to our assembled passengers, several of whom were ladies. One fellow called out in good English, “Capitan, stop her.”

Our Admiralty Book of Directions (1860) says, “Nassau Island is the only one *not* covered with trees.” It is, however, now covered with small trees. Cape Froward, the extreme southern point of the continent of the Americas, in lat. 53° 54' S. and long. 71° 18' W. (Roper), is a very remarkable bluff headland, the termination of a range of snowy peaks. It is well wooded from the region of snow down to the water's edge. The rugged ranges of glaciers on Dawson's and Clarence Islands, Tierra del Fuego, glittering in the sunshine, were grand and imposing objects. On the Patagonian side, trees, apparently evergreens, were growing down to the water's edge. The Strait to-day is quite a sheltered lake, and Lyall and San Pedro Sounds appear like Highland lochs glittering in the sunshine. Snow showers now and then sweep through the higher valleys, but none approach the coast.

At 3h. 45m. p.m. anchored in Fortescue Bay in 13 fathoms, and outside the little harbour of Port Gallant,—Cape Gallant bearing S. W. b. W., Cape Holland E. $\frac{1}{2}$ N., Eastern end of Charles Island S. $\frac{1}{2}$ W., the ship being about five cables off the land on East side of the anchorage. Two pretty little wooded islets are at the entrance of Port Gallant. This appears to be a very snug anchorage, and easy of

approach. Night calm, with slight frost; stars very bright; and the lofty glaciers of Tierra del Fuego brightened up the sky to the southward as if caused by faint moonlight. During day, winds variable, with alternate calms. Thermometer at noon 45° .

Friday, May 26th.—Weighed at 7h. 15m. a.m. Winds S.W., with cloudy weather. 8h. 30m. a.m. anchored again in Fortescue Bay on the same bearings, the weather having become so thick, with very heavy snow, that it was impossible to proceed. Vessel lying very quietly at single anchor with slack chain, the 45-fathom shackle being at the water's edge. Heavy snow showers during the day, and strong breeze from S.W. blowing outside.

Saturday, May 27th.—A.m., weather calm, very bright, and clear. At sunrise, the snowy peaks of Tierra del Fuego appeared of a beautiful pale-rose colour. Weighed at 7h. 30m. a.m. When running for Carlos III. Island we easily identified the various islands and the nearest islets of the Admiralty charts. When abreast of York Road, Cordova Peninsula apparently blocks up the passage; and when approaching Crooked Reach, the Strait, overshadowed by lofty snow-covered mountains, takes the appearance of an Alpine lake. The serrated ranges of Cordova Peninsula are very grand and conspicuous. Jerome Channel, leading to Otway and Skyring Waters, showed well open to the N.N.W.; and here we experienced strong cross tides, eddying furiously in all directions, resembling the Swellys of the Menai Straits. When passing through Crooked Reach, we saw enormous shoals of fish, pursued by hundreds of seals and numerous birds. The navigation of Crooked Reach must be fraught with great difficulty for sailing vessels, and were even a steamer to be caught in thick weather, or in a snow storm, her position would be very precarious. When passing the mouth of Borja Bay and the Ortiz Islands we easily identified them by the chart.

At 10h. 30m. a.m. passed Cape Quod. This is a lofty perpendicular promontory, having a little rocky islet lying off its pitch. Barcelo Bay, to the westward of Cape Quod, is apparently a very deep indentation, and has some small islets in it. Having fairly entered Long Reach and shaped a course, we experienced very heavy snow showers, some lasting over an hour, and during which the compasses acted very sluggishly. Passed Shelter Island and Playa Parda Anchorage during a clear interval, and had a good view of them. Passing Havannah Point and St. Anne's Island, we here entered Sea Reach, and began to experience a little of the swell rolling in from the Pacific. Cape Upright, the N.E. point of the Island of Desolation, is a bold, steep, and very remarkable headland. It projects well out into the Strait, and forms the eastern boundary of Alquilqua Bay, in which are a number of small islands and apparently some foul ground. When the Cape bore E.b.S. and Cape Providence N.E. $\frac{1}{2}$ N. we saw a rock bearing from us S.S.E. $\frac{1}{2}$ E. about two miles distant, and upon which the sea was breaking heavily. We were unable to identify this spot upon the Admiralty chart.

P.M., the north-westerly breeze began to moderate, with clear sky

to the westward; but at intervals experienced some sharp showers of sleet and hail alternately. At sunset saw Cape Pillar, and passed it two miles distant at 7h. 30m. p.m. Weather very clear, moderate westerly swell, and light N.W. breeze, having been four and a half days in making the distance of 315 miles between Cape Virgins and Cape Pillar. Hours underway, 34. Average speed 9.26 knots; the tides in their limits being generally unfavourable, independent of the easterly current met with from the western entrance of Crooked Reach to the Pacific.

The Strait of Magellan is well adapted for the purposes of steam navigation, the most ordinary care only being observed; such as not running through narrow and tortuous channels in snow or in thick weather, and in securing an anchorage in the winter season before dark. In the summer, a steam vessel should go right through without anchoring; but during the winter two days may certainly be added to the passage, owing to the probable delays at anchor. We found the winds to prevail between N.W. and S.W., moderate, with alternate calms. Mean range of thermometer for each twenty-four hours 40°, with slight frosts at night. Barometer steady at 28.70. I can only say, in conclusion, that the perseverance of the late Admiral Fitzroy and the other officers who have made the elaborate surveys of a large portion of those Straits, together with the results of their exertions as given in their beautiful series of charts, plans, and coast views, have conferred a lasting obligation upon those who now benefit by their labours. While paying a grateful tribute to those distinguished officers, there is no doubt but the facilities afforded by the employment of one of her Majesty's steam sloops in the present survey will be the means of supplying a great want,—namely, an addition to the number of eligible harbours and anchorages, and will also enable a great deal of ground to be gone over that of a necessity had to be left unexplored by the little *Beagle* and her consort.

I am of opinion that a screw steamer of small horse power, when having passed Cape Pillar, and bound to Valparaiso in the winter season, should make an offing of at least 70 miles upon a W.b.N. course (true), so as to take advantage under all possible fore and aft sails (trysails laced to the booms) of the prevailing north-westerly winds, which generally blow strong with a long westerly swell rolling in upon an inhospitable and dangerous coast. Should she, however, as is sometimes the case, get a slant from the southward, she will of course make the best of her way, but still taking care not to make too free with the land.

Should a steamer run short of fuel, she can obtain good Chilian coal at Lota, in the great Bay of Arauco, about 270 miles South of Valparaiso; repairs to machinery can also be performed to some extent. At Puchoco, five miles North of Lota, the Pacific Steam Navigation Company's vessels procure coal of a good quality, price 19s. 2d. per ton. Not having visited the newly-opened mines on the River Lieber, I cannot answer for the facilities afforded for coaling at that place.

THE LITTLE MINCH CHANNEL.

(Concluded from page 16.)

In the Little Minch there are three fishing-banks of small extent. But they are only banks in comparison with the deep water around them, having 25 to 30 fathoms on a gravelly bottom varied with broken shells. Are we becalmed on one of these—a case which commonly happens—in that case our only amusement will be to set to work fishing or dredging. With long lines and a slice of fresh herring for a bait, cod-fish from 15 lbs. to 20 lbs. will be caught; bream, hake, coal-fish, or ling, perhaps. The crew of our vessel have taken on one of these banks (near Skye), only during their dinner-hour, between 7 cwt. and 8 cwt. of cod-fish.

In the lochs, at anchor, with small hooks and a mussel for bait, whiting, mackarel, flat fish, haddock, eels, gurnet, cuddies and flounders are commonly and easily taken. In Loch Slapin, one person has caught with a single hook 317 of these latter in four days. Lobsters and crabs may also be taken along the rough and rocky shores; and oysters, at the head of the lochs at low-water spring tides, are found in abundance.

Cuddies are hooked in great quantities with a rod and artificial fly. By walking up and down the deck, throwing the fly as if in a stream, when no better employment presents itself, very good sport is thus to be had.

Herrings are taken in the lochs in great quantities; sometimes in such abundance that the people are unable to cure them. They die in the weir, and the next flood tide carries them all away floating by thousands for the birds to feast on. When salted and packed, they are dispatched to the Glasgow market.

Occasionally the sportsman may come across a whale, and will be fortunate if the leviathan of the deep is allured into shoal waters, where it may be taken; and he will have the satisfaction of seeing the scanty population rejoicing over the supply of oil which it affords them.

Porpoises, too, frequent these lochs in pursuit of small fish. But should the visitor, in the course of his fishing, unfortunately hook a dog-fish (a species of shark about 3 to 4 feet in length), the sooner he hauls in his lines the better, and finds some other sport; for the mere presence of these horrid creatures drives all other fish from their waters.

No visitor to these parts but is provided with his gun,—an abundant source of pastime, if only in shooting gulls. Let him not look down on such sport, for even among such common birds there is variety,—puffins, divers, dipchicks, &c.—which hover about the vessel, and are even enticed within shot by the *débris* of the daily repast. Even a Mother Carey's chicken or two may be seen, but they are very rare. How often it has been my lot to watch the parasite gull (*Lestris parasiticus*), which lives on its neighbour's fare, chasing it in the air,

screaming and terrified, until, exhausted, it *drops* with fear. Then the swift pursuer gains his object.

When under the cliffs a shot or two may be had at the bald or white-headed eagle, while proudly perched on a projecting pinnacle of rock 1000 feet high, or performing its gyrations in the air wheeling round some unhappy victim.

The great northern loon and the curlew may be also seen among the rocks and kelp-weed; but they are very shy, and it is not easy to get within shot of them. Ducks, geese, and plover plentifully abound during the winter months; and wild pigeons in the dark recesses of the rocks.

Should the yacht (of sail) be detained by calm during a night, there will be abundant opportunity for admiring, not only those remarkable scintillations produced by the diminutive races which people the sea, nor will the skies fail to show their beauties to the admiring eyes of the tyro in these waters. He will perhaps (particularly in October and November) have an opportunity of seeing the falling star, and the bursting meteor lighting up for an instant the whole heavens, emitting colours far more brilliant than those falling from an exploded rocket; and should a cloud be present to reflect or refract its light, a grand and sometimes awful appearance will be presented.

Another beautiful effect will also be common in the aurora borealis on a cloudless night, sometimes arched in the North, or corruscating a yellow flame in the zenith, from a nucleus resembling a parachute, emitting here and there a band of reddish tint, darting vividly across the heavens; or a mass of rose flame in the S.W., caused by vapour intercepting the aurora, while the yellow colour is seen through a rarefied atmosphere. But these will convey but a very faint idea to the visitor of the wonders in the heavens!

Nor, as usual, are the waters of the sea to be omitted from supplying their share of attractions. Even this minor branch of the ocean abounds with a variety of lights, which shine like so many rubies, sapphires, and precious stones, occasioned by thousands of medusæ and minute animalculæ,—insensible multitudes apparently, having only the means of propulsion, and this, especially the former, by the mere dilatation and contraction of its gelatinous body, without head, heart, limbs, nerves, or blood; and probably, after a few short moments, myriads will be rushing with a stream of water down the voracious swallow of the herring, the porpoise, or the whale, and all alike hurried about from one part of the ocean to another by the ever restless tide.

By towing a small gauze or buntin bag along the surface of the sea for a brief interval now and then, its contents will convey a good idea of the mass of life to be found in the ocean; and, again, many an hour, otherwise tedious, slips away imperceptibly in contemplating their wonderful construction by the powers of the microscope. With this means of examination, that no admirer of the works of Nature should be without, the beauties of the fragile and delicate vellella cannot fail to excite wonder and admiration.

Such are the pursuits which will contribute to the amusement of the unemployed yacht sailor. Let us now turn to the wants of the seaman, and see whether we can provide him with a few profitable hints in his line from our very short experience in these waters. Such as they are, they may have the effect of keeping his barque clear of danger, and relieving him of much anxiety by night and by day.

As already observed, the dangers from rocky masses are few and small; nor are the ports of refuge and the lighthouses about the Little Minch by any means plentiful. The depths may be important, but the currents are more so; and the winds and weather of more importance still. Indeed, these latter are so extensively, as well as intimately, connected with some well-known ocean streams, that they well deserve a separate dissertation; since there is no place in the world where changes are so frequent and so sudden as the Minch, and where by a little patience and study they may be foreseen with advantage.

Throughout the Little Minch there is a uniform depth, increasing from 30 fathoms near its side to 111 fathoms in the middle, on a ground made up of portions of gravel, mud, broken shells, and sometimes rock. Three irregular places only are to be found over the whole extent, and they are banks occupying small spaces, whose least depth of water is 21 fathoms, the ground being generally of gravel. One is between Loch Maddy and Vaternish Point; a second off Ben Ival; and a third off Wia Island. It is on this latter that the least water, 21 fathoms, is found.

The currents of the Little Minch are by no means irregular; setting to the South and South-west during ebb, and to the North during flood tides. They are moderate in strength, running from one to two knots at neaps; and increasing to three and four knots, and perhaps more, at springs. Off the headlands of Vaternish, Dunvegan, Meal-a-veg, and Uist Point, in Skye, these tides form violent races; of which vessels should be cautious. The tide flows and ebbs frequently some considerable interval after the times of high and low water.

We will now proceed to treat briefly on the winds, weather, and atmospheric phenomena of the Little Minch.

There is certainly no part of the world within my knowledge where changes in weather come on so suddenly and unlooked for as the N.W. coast of Scotland, which is considered one of the centres of great barometric disturbances, and which as yet is comparatively unknown. It is common for the most tranquil nights, perhaps about an hour before midnight, to change suddenly from a calm to a violent breeze from S.W., which will freshen into a gale before morning. Even the very contrary will also occur without any other warning or indication but the barometer. So astonishing are these changes that they are not understood by the Highlanders themselves. Experience, however, has taught them that after a calm a S.W. wind usually follows.

It is not only fair to the reader, but to myself, to say that even my very short experience of only a couple of seasons should be known.

Small interval as that may be, much time has been occupied by me in it. The subject itself had sufficient interest for me, since the record of atmospheric changes in these regions is very limited, and thus the ground became at once invested almost with the charm of novelty. What else but the pleasure of being thus among the first to record observations of changes would induce me to give orders to be informed nightly on the occurrence of any shower of hail, sleet, rain, or snow, that I might myself take measures to ascertain particulars of form, size, velocity, and temperature? Why else should I be roused on a cold night to be present on deck at every corruscation and pulsation of the aurora; to observe every shooting meteor or falling star, every halo of moon or sun, rainbow, or fogbow; to ascertain their positions, and give accounts of their direction, elevation, extent, cause and effect? Comets, lightnings, thunders, nothing escaped my observation—all were closely and attentively watched. Surely, then, it may be concluded that to me it was a labour of love—interesting and pleasant; and that I have a fair claim to speak of what I have both seen and studied, without incurring the risk of being considered vain and egotistical.

I believe we are all as ignorant about *foretelling* weather, as we are about the hidden mysteries of magnetism and its connection with our globe. The former requires the closest and most constant attention, as well as the most minute research. To trace the approaching weather by every shape and movement of clouds in the wide range of atmospheric space above us is no ordinary task, but one that would afford considerable assistance; and there can be no doubt that every patch of cirrus and line of strata would indicate some definite effect and result were they understood.

The prevailing winds of this country are S.W., and these too, when fresh, are nearly always accompanied by rain. These gales are very violent in November and December in the Little Minch; and, indeed, there are S.W. gales here all the year round. They generally exhaust themselves with heavy rain, and then a brisk westerly wind follows to clear all off. In fact, this invariably occurs. Should the wind fly back again to S.W. or South, a repetition of the same may be looked for; but if the wind draws round by North, then moderately fair weather follows.

East and N.E. winds are very rare indeed in this part of the world. During the whole of one season, from June to February, the East wind occurred but on three occasions, and then for short periods.

Strong S.E. winds, indeed, do occasionally blow for several *hours* together, but they are generally dry winds; yet should they veer round to S.W., they bring wet with them.

The gales which occur about the time of the equinoxes are later here than in the South of England. They sometimes last into the first week of October, when they are followed by fine weather, commencing generally at the full moon, accompanied by a continuation of beautiful weather, known here, as elsewhere, as "the Indian, or Second Summer." This, however, lasts but for a short period. Cold weather,

frost and snow, &c., suddenly appear, and is foreboded by the arrival of wild geese, &c., about the middle of October. The November gales then plainly indicate that winter has fairly set in.

The appearance of the aurora borealis is generally a sign that boisterous weather is at hand in the shape of wind, rain, or both. The rose-tinted aurora in the S.W. has been succeeded in the following night by vivid lightning, thunder, and rain, but of short duration. This tinted aurora is, however, of rare occurrence. Shooting and falling stars indicate boisterous weather, and are more generally seen in October.

That handy little instrument, the aneroid barometer, will be found a never-failing guide for the approach of bad weather. Never failing is saying too much; for even this is no exception to the general rule, and has its one or two exceptions, which shall be mentioned. It will fall with South winds, and rise with North winds, as a general rule. Before there is any appearance of moderation in the weather during southerly gales, the aneroid will commence rising perhaps even an *hour* before the gale is done, clearly indicating that a change is at hand.

The peculiar exceptions to the good character of the aneroid mostly occur during the latter part of October, November, and the first part of December. During this period, at irregular intervals, the barometer will fall very low, perhaps to 28.8, and yet there will be fine weather. At other times it will rise to 30.6, and coarse weather will occur. These peculiarities attracted my notice while tracing the annual depression of the atmospheric wave in the latter part of November. They may, however, be considered as singular exceptions to the general rule, and not unworthy of attention.

The Highlanders have many curious prognostications of the approach of dirty weather. Some of them I have collected from the oldest and most experienced of the fishermen along the coast, whose sayings, however, are not always to be depended on. Yet some of them in connection with the aneroid may be found useful guides to a vessel in these waters, and are these:—

1. When the Culen Hills (above 3000 feet above the level of the sea) become capped with mist, or (as the natives say) “keep their cloak,” coarse weather may be expected. These may be considered the Skye barometer.

2. Ben Ival (a mount in North Uist), when clouded, is a sure sign of wind and its accompaniments.

3. Friday goes against every other day: that is, if fine, all the other days of the week will be wet; if all the other days have been fine, then Friday will be wet. This is a novelty perhaps without parallel.

4. When the hills are clear, distinct, and the land appears near, wet will shortly follow.

5. It has often been noticed that, previous to a gale of wind, the ashes of the peat fires (within the houses) are in agitation. This may be attributed to a rarified atmosphere.

6. When the wind backs against the sun from North to South (by the West), it is a sign of bad weather. This, perhaps, is the case in most parts of the world in North latitude; and most truly in the Atlantic Ocean.

7. When the great northern loon, diver, or shag is seen resorting to the lochs for shelter, it is a sure sign of approaching *dirty* weather.

8. It is a saying, never known to fail, that when the new moon comes in on a Saturday during the harvest months, stormy weather will continue all that moon.

9. When the cattle do low in winter, expect snow.

10. When the smoke ascends white and glitters, expect rain.

11. When the first day of the harvest is sunshiny and bright, expect wind and rain all that harvest.

12. When the new moon comes in after 12h. p.m., expect coarse weather.

13. If the new moon comes in on a Friday in spring, then expect bad weather.

14. When the Uist land looks near, westerly wind is almost sure.

15. When the last Thursday of the moon and the first day are alike, expect fine weather.

16. When the surf is heard on the shores, a gale will follow.

17. A squall on a calm summer's day in a valley is a bad sign.

18. When the midges (a small troublesome black fly) are seen in the morning, rain will follow.

19. When peat smoke shines black, expect wind.

20. When cattle smell their hoofs, expect heat.

21. If the first day of winter (1st December) comes in with S.W. wind, expect the contrary after it.

22. If the last moon of winter and the first moon of spring are alike, expect a fine spring.

23. Swans seen previous to the 13th of October are a sign of an early winter.

24. Seagulls will hover around vessels, and fly over the shores screaming, at the approach of bad weather.

Note.—After a low barometer, should it rise suddenly, this indicates unsettled weather; if not, a repetition of what preceded.

Note.—Sunday is, in nine cases out of ten, a lovely and tranquil day. It would seem, as if obeying the will of the Creator, that storms and winds should also rest on this day.

This may truly be called a wet country. During six months, from June to December, 1858, 23·56 inches of rain fell (very nearly two feet), carefully measured: the greatest quantity with S.W. winds. Nor was this the maximum fall in Skye; for, situated where the rain gauge was, the clouds were intercepted by hills before they reached that spot: the greatest quantity being on the S.W. side. Even this shows an amount rarely met with.

It rained 103 days out of 244 of the latter part of the year 1858.

The winds accompanying these rains were—

From S.W. for	49 days
„ West and W.N.W.	10 „
„ S.E.	9 „
„ North and N.W.	7 „
Variable	16 „
Calms	5 „
From E.N.E. and E.S.E.	7 „

Ozone is an element that has occupied a good deal of my attention ; and, although during but a limited period, my experience enables me to conclude that it is more abundant here than in any other part of the world over which observations have been made. In some instances it has been found three and four parts in excess of the scale universally adopted at all observatories.

I have found it more abundant with S.W. winds coming from the ocean ; least with East and N.E. winds coming from the land, where it has already done its purifying work by absorbing all impure atmospheres. Even on both sides of Skye, a small but yet perceptible decrease has been found on the N.E. side compared with the S.W., which latter gets it direct from the ocean.

It is remarkably abundant during the presence of the aurora, with or without winds, as well as during thunder and lightning storms, and is, indeed, a valuable ingredient of the atmosphere, when we consider that air containing $\frac{1}{3000}$ of ozone can disinfect 540 times its volume of foul atmosphere produced by decomposed vegetable matter or putrid meat, &c.

It must be noticed, after a thunder storm, how the atmosphere becomes purified by this valuable agent. Such an abundance of this newly-discovered element will in a measure account for the healthy locality of the N.W. coast and isles of Scotland. Here there is little or no sickness,—doctors have no work.

A great deal has yet to be learned of ozone, and it requires a sound knowledge of modern chemistry to be able to dive into its mysteries. It is difficult also to produce test papers which will not be affected by heat, moisture, sea air, &c.

When I first commenced these few scattered notes for the sailor and tourist, I did not intend to swell them into all these pages, but one interesting discussion led me to another still more so, and I could not resist continuing my remarks. However, I shall conclude them with one or two on the Gulf Stream, and its effects, if not its presence, on the shores of the British Isles. In committing them to my journal, of course my conclusions are derived from my own observations, and not from fireside theories. It has not been my fortune to meet with any one yet who has given a fact on this most interesting subject from his own experience. Opinions borrowed from others amount to little more than fiction.

Are temperatures of the sea to be considered a true test of the

presence of this stream,—that is, temperatures taken among the islands and lochs of the Hebrides? In my opinion, they are too much influenced by the land to be of any value. Constant streams of fresh water caused by heavy rains rush miles out to seaward in all directions, and carry their own temperatures with them. How can the real temperature of the sea be obtained there? But far out at sea, many miles from land, and without such influence, a thermometer **MAY** be supposed to indicate its presence.

I am not for theorizing on the course of this stream; but having been wafted towards the shores of England by its influence on *nine* occasions, I have no doubt of its presence, even had I no other convincing proofs of its approach to the shores of Great Britain.

We all incline more or less to an intuitive desire to find out something directly after some one else has already done it—perhaps to torture it—until we have found out some imagined cause or reason that will lead to exactly the reverse conclusions. So it is with the Gulf Stream; and so it will be as long as the stream continues to flow,—whether it be to the Arctic Sea, as some take it; or to the Equator, as some others take it; or direct to Britain of its own natural accord, as others again agree. I have no inclination to enter into a review of either of these theories; but that the stream flows one way is certain, and that there are reasons why it should do so is also certain.

The Great Designer of all things gave to this immense mass of water a course by which it would benefit many portions of the world; and if we have not yet found out the path of this grand flow of waters, it is almost time we did. If, when the bed for the Atlantic telegraph cable was sounded by us, temperatures and densities at various depths had been observed, these might have set at rest the whole question of the course and limits of the Gulf Stream, even if we had not already sufficient to convince us of at least its effects and influence on our shores.

A short time ago a pamphlet was published, portions of which have been read in presence of intellectual bodies of men—men of literature and of science—purporting to withdraw from the shores of the British Isles the effects of the Gulf Stream! and to render these favoured countries independent of its beneficial influence;—an opinion said to be deduced from temperatures and densities of the sea obtained about and around the coast of Scotland. This may, indeed, be said to be another of the many imaginary projects hatched by the fireside of a study in dressing-gown and slippers.

It is not for me to criticise or review this production. But really, when it is rationally and fairly considered in all its reasonings and all its points, and its utter want of some reliable basis to start on, it appears marvellous how persons enjoying the privilege and blessing of eyesight and hearing can be induced to give credence to a theory based on such loose evidence. How such a conclusion, as the absence or presence of the Gulf Stream, can be concluded by the mere plunge of a thermometer from the steps of a pier end to a depth of a few feet,

where the rise and fall of water is double that amount, or from a rock in localities subject to river influences, to land influences, to tidal influences,—where even the corks which have left the fisherman's nets with the ebb tide return to almost the same spot with the flood,—how such a theory can be drawn from these temperatures of the sea, everywhere partaking of the warmth of the land about which they flow, and from densities of the sea, all of course superficial, (where in six months alone 23 inches of rain fell, and in one month alone 7·56 inches, rendering the water at the surface almost drinkable,—and where, perhaps, the particles of mud arising from a disturbed ground have been counteracted in density by the freshness of these rains, by a fortunate accident,) is, to say the least of it, very problematical, amounting, indeed, almost to a mere delusion.

I am not going to produce (in my anxiety for the fate of the Gulf Stream) another quarto volume of assumptions, suppositions, imaginations, or theories; nor am I going to suppose the "Ocean suddenly to become oil," nor the "Gulf Stream a galvanic battery," nor any other impossible or improbable event; nor am I about to collect the ideas of others to aid my views. But, as we must all concur in the fact that climates are tempered and guided by the effects of ocean currents, and by prevailing winds passing over them and wafting to those shores the heat, cold, vapour, or otherwise produced by those currents, there remains one fact, in itself sufficient alone to condemn the entire theory of the Arctic current so fancifully, and apparently so naturally, drawn on the chart accompanying this pamphlet.

As the prevailing winds are acknowledged to be the S.W. winds, and which must pass over this band of cold water from the Arctic Seas before reaching our shores; if it here existed, we should have no warmth for our isles, no mild winters, no rains, which without doubt we have; for if these warm S.W. winds, loaded with vapour, had to pass over a band of colder water, whose presence would cool the air, they would long before reaching our shores be condensed into rain, and fall on the ocean instead of our much-favoured land. This of itself ignores the presence of an Arctic Current here; and which would, according to the aforesaid illustration, drive the Gulf Stream fifteen hundred miles from our shores.

This is all that is necessary to be said about this pamphlet—indeed, this is too much—and I would not have been drawn into any remark, if I had not been convinced from two years' experience around the Hebrides, &c., of the undeniable and unmistakable presence of the effects of the Gulf Stream, not by the mere plunge of a thermometer or a hydrometer into any sort of waters—deep or shoal, warm or cold, fresh or salt,—but by its visible effects in the atmosphere; the almost constant S.W. winds, always loaded with moisture; its warm vapours, condensing into rain immediately on meeting the colder atmosphere of our isles; its effects on vegetation; which could not possibly be the case, according to all known laws, if it had to pass over a chilling body of water.

I believe myself that the presence of such a body of cold water in

the position assigned to the Arctic Current, would entirely alter the system of the known prevailing winds between England and America. I am, therefore, *altogether* opposed to such a theory, on good grounds. First, That there is no basis for such an hypothesis. Secondly, That it is based on erroneous views; from observations that can have no connection whatever with the stream, and are altogether inapplicable and without relation. And thirdly, That it is diverting the course of a stream that must be acknowledged by every sailor who has passed through it, and the effects of which are too apparent to many thousands residing on the western shores to be so suddenly withdrawn without some good reason or undisputed fact.

Note.—It is a remarkable fact, and worthy of being recorded, that these very observations (temperatures and densities), on which the pamphlet alluded to is mainly founded, were supposed by the observers themselves to lead to a conclusion quite the contrary. They (the observers) presumed they indicated the presence of the Gulf Stream on the shores of the Hebrides.

HOMEWARD BOUND.

PART I.

(Continued from page 86.)

Six days from Plymouth, and 'tis hard t' avow,—
 What? Those days were number'd, her hours now!
 Yes, little longer can she keep afloat;—
 All hope is gone! there's little more to note:
 Little? Small interval of time, 'tis true,
 Between eternity and all her crew!
 And that word "*crew*" includes each living soul,
 Counts hundreds two and thirty-nine as whole.

How much the *London* seems to have been cramm'd
 With stores of all kinds, literally jamm'd,
 Now and then incidentally comes out,—
 As narratives appear, and clear up doubt.
 Some seamen to the sailroom had been sent
 To get a sail. To do this really meant
 All haste; for as they coolly said, "She'll sink
 "Before we get it," as they seem'd to think.
 And now all men were wanted on the poop,
 Which order to obey they had to stoop
 And through a passage dark they had to creep
 O'er piles of stores and luggage in a heap,
 In total darkness two feet from the deck
 Above them: thus sails wanted for the wreck

Could not be pass'd along, and were delay'd ;
 And to this overloading must be laid
 The *London's* loss :—that insatiate desire
 For more and more :—more fuel to the fire
 For making gold ; which, 'midst elemental strife,
 To some is dearer—aye, than human life !

Wouldst thou observe the terrors of the storm,
 By night go view them ; when to danger's form
 Darkness her mournful mantle freely lends,
 Where ocean with the hurricane contends !
 Come with the Muse, ascend the *London's* deck
 When th' engine-room hatch had become a wreck :
 'Tis dark, the vessel in the trough of waves
 Is press'd by wind ; the sea in madness raves,
 Furiously beats her overleaning sides,
 Sluggishly lying 'midst the eddying tides,—
 Up to her gunwale is the raging sea
 Of yeasty waves as reeling in her lee,
 Beyond them shines the phosphorescent crest
 (Tow'ring above her as she lies depress'd)
 Of lofty seas conspicuous in the dark,
 And dreadful scene around, that wondrous spark
 Of light clust'ring anon in bright array,—
 As if to show the wilds of sea that lay
 Beyond it : then behold a lesser glare
 From her cuddy lights, which the mainmast bare
 Reveals, inclined as stooping to the sea,
 And o'er it plainly struggling to get free
 The shreds and tatters of that topsail set
 In wild and sad despair, one half as yet
 Remains, the black blast of the howling wind
 Defying, as out straight it stands inclined !

• • • • •
 Art content ? with the horrors of that night,
 Or those discover'd by the morning's light ?
 The ship a wreck, the decks, the stern-ports, all
 The sport of waves ! Yes ;—'twas enough t' appal
 The stoutest heart. Her stern is settling down
 Deeper in the sea, the worst fears to crown,
 And every one believes she 'll soon go down !

As daylight dawns her captain casts around,
 With keenly scrutinizing look profound,
 The drear horizon :—yet no vessel bound
 Outward or homeward to his sight appears :
 What's passing in his mind ?—some one hears ?
 " Death is triumphant !—realized my fears : "

With words like these he might address his crew,
 As well as passengers in the cuddy too :—
 “ Hard have we strove this tempest to subdue,
 “ This cruel storm, this boist'rous sea, which few
 “ Ships, such as ours, ever can outlive ;—
 “ Yet all in vain : the bleak blast does not give
 “ Aught of its force, nor yields it to our art,
 “ Or best endeavours on the seaman's part !
 “ Oft has it been my lot in life to sail
 “ Many a ship, even in such a gale
 “ As this, and in as bad a sea likewise,
 “ As that which rages now before our eyes !
 “ There's something in this ship our art defies :
 “ All further effort's useless to pursue,
 “ All has been done that human aid can do !”
 Such might have been the few remarks made known,
 (The last of those words were the captain's own,)
 Enough indeed to blast all human hope,
 To know that man's strength could no longer cope
 With dreadful fate in this most trying hour ;
 The *London* was no longer in his power !
 The ship was DREEP and CRANK. This all explains,—
 The “ *something* ” which to be discuss'd remains.

Calmly were those words given,—so received,—
 No cry of wild despair sad minds relieved ;
 A solemn silence crowns the dreadful scene,
 Which thus consigns to fatal depths unseen
 That large assemblage to their fate resign'd,
 Mostly prepared with proper state of mind ;
 Thanks to the exertions of those good men,
 Draper and Woolley, whose example then
 And previously had been in anxious care,
 Like Christian pastors, with their flocks in prayer !
 “ Pray with me, Mr. Draper,”—an appeal
 Oft made, and promptly answer'd : he could feel
 All that sympathy with the Christian's heart
 So dear to souls which from this life depart.
 And were there callous hearts at this extreme
 Of worldly life ? If so, his constant theme
 Would be “ conversion.” “ Oh, may they yet be
 “ Converted now, who yet remain with me,
 “ Their lost, and sad, and hopeless state to see !”

And here let not the Muse omit to note
 The captain's words, and these indeed to quote ;—
 Significant of danger he foresaw,
 And ominous conclusion thence could draw ;—
 “ Boys, you may say your prayers,” he coolly said,
 Seeing the engine-room afloat ; he read ;

Destruction direful in that blow is found,
The engine first, and next the ship is drown'd!

Her time is brief; her glass few sands to run,
Yet in that interval how much is done!
How much cool intrepidity display'd,
Farewells of friends, and sacrifices made,
Narrow escapes, by terror undismay'd,—
The Muse yet finds keen sorrow to bewail
In suffering humanity's thrilling tale;
Life's precious moments now suggested all
Those means of safety ready at a call:—
Rafts, boats, and lifebelts, taken in detail,
What are they now worth, or of what avail?
For rafts' construction little can be found
In ships where only iron does abound:
The motion of this ship, too, so severe,
The intruding sea and wind so interfere
With any effort to construct a raft,
'Twas hopeless from the first in such a craft!
Then as to boats,—two had been wash'd away;
The iron pinnace yet there was that lay
Ready if launch'd, and this without delay
Was raised by aid of donkey-engine power;
Alas! but to be lost in that same hour!
When such assistance as could be obtain'd,
More precious was than gold from mining gain'd:
And lifebelts?—truly they would be absurd
At sea, to drown by inches! In a word,
All these resources severally fail'd
To yield them succour, for they nought avail'd!

Alas! while yet upon the brink of fate,
What scenes heart-rending must the Muse relate!
Scenes quickly change, as time yet shorter grew,
No pausing now:—hesitation will undo.
Ere yet the Muse endeavours to narrate
The last events which close the *London's* fate,
Fain would she keep, from this sad picture drawn,
One feature that deserves severest scorn:
Our English ships are mann'd with motley crews;
Among the *London's* men the Dutch refuse
Duty!—to share the labour at the pumps,
Or aught besides, and, as it were in dumps,
Sneak off below just as they're wanted; when—
Cold, phlegmatic, and apathetic men—
They leave for others what themselves should do,
As well to chance the course she might pursue;

Such dastard ways let Britons recollect
 To Dutch belong! How can they gain respect?
 See the bright contrast which our English blood
 Affords in sexes both, ere that rude flood
 Of waters o'er them closed. One, as her hands
 She wrung in deep despair, when all demands
 Upon her were fulfill'd, with feelings sore,
 Cried, "What I could I've done, and can no more!"

* * * *

Noble example! To her God now turns
 That British female, leaving all concerns,—
 Brooker her name; and instances there were
 Of energies untiring, that would stir
 E'en Dutch to action, were they not too cold
 In blood. Let Eastwood, Hickman, Wilson—bold,
 Intrepid names—stand forth in history's page
 As bright examples in the present age
 Of British magnanimity, and all
 Its noble virtues: their transcendent call
 To do heroic deeds was well obey'd.
 No nobler efforts ever yet were made
 Something useful to do, no matter where,
 Wilson than thine! thou who couldst always share
 Another's woe! Eastwood, "Going to go?"
 Too true thy words, though playfully they flow:
 When serious thoughts are occupying men's minds,
 Some others have ideas of serious kinds:
 Yet happy 'tis your wishes were repress'd,
 Munro no doubt will rectify the rest.
 And where was G. V. Brooke in this sad fray?
 Oft had he play'd a part which that to-day—
 Tragedian as he was, the world his stage—
 He ne'er would realize in any age:
 So little do we think what will befall
 Our voyage through life, wherein we stake our all:
 In his great efforts, he, 'tis right to note,
 Used all his strength to keep the ship afloat.

'Tis said that "perseverance in good cause,
 "All the world over, deserves applause."
 An elder pair who in the *London* sail'd
 Would this distinction earn, and thrice had fail'd.
 First, in some unknown vessel cast away;
 In the *Duncan Dunbar* another day;
 And now for persevering, to their cost,
 With th' unhappy *London* must be lost.
 For Sydney with their children thus they tried,
 And with their fate contending thus they died!

Their perseverance was but labour lost :—
Such virtue should not to the winds be toss'd.

Another pair, both favourites on board,
Were sent for by their only son abroad ;
Little they knew, poor souls, of ships or sea,
Yet learning what must be their destiny,—
First drown'd their sorrows in the flowing bowl,
All hope forsook, and thus from life they stole !

The wretched ship would still her place maintain
On the deep, wild, infuriated main ;
Though clearly lower in that place she lay,
As water gain'd upon her ev'ry day :
So low she was at noon, as made it clear
That her approaching end was drawing near.
Yet still a boat was left ; a daring few
Small as it was, might some attempt renew,
With one consent to brave the furious sea,
Where chance of saving life there still might be.
Haste, haste, be careful, and that boat prepare ;
Lose not a moment, there are none to spare !
Such the resolution of one small band,
Perish they might,—still *they* might reach the land.
How sweet is life ! To save it these would do
Impossibilities,—and slight them too !
Meanwhile the ship lay settled in the sea ;
Young Angel at his post still stay'd to free
Th' increasing water with his special care
The donkey-engine ;—but left to share
The general fate ; for to the last was he
Seen at his station, which he scorn'd to flee !
“ Midst storm, confusion, terror and dismay,
“ The star of duty was his guiding ray ! ”

Scatter'd about the ship were, here and there,
Some serious talking,—others in despair ;
Some still deploring their hard fate to be
So soon the victims of the ruthless sea.
Her captain, always steady to the last,
Now joins in pray'r,—and now would wistful cast
A melancholy glance around his ship !
“ Who, with carpet-bag ready for a trip
“ On some fine jaunt, is he that now appears ?
“ Oh ! an inexperienced passenger ; poor man !
A brief contemptuous smile next moment ran
Across his face. “ What time is this to choose,”
He said, “ and think of carpet-bags to use ? ”

Grossly deceived indeed must he have been,
To dream of carpet-bags in this dread scene!

And nearer still the ship's fate now draws near;
That boat was in the sea, and some from fear
Would not embark. Some seamen of the crew
Were in her, and e'en three passengers too,
When John Wilson, a native of Montrouse,
Hickman his friend would save, and urged him close
To join them; and one more sad and trying scene,
Alas! ensued, which ended as foreseen.

"Press me not, Wilson, for I cannot go;
"My wife and children I have promised to
"Stay by,—and— . . . I will do so."
Noble resolve! To share with them their fate
Was Hickman's lot! A faithful, loving mate
To him was life indeed; without her, what?
But a cold blank, with keen, enduring blot!
How could he leave her whose endearing charm
His duty was to shield from ev'ry harm!
"Help me with these dear children, Wilson; see,—
"For here the water rises on this lee
"Side of this saloon; take them over there,
"Where they will at least be dry!" Yes, with care
"Tis done! "Good bye, Jack." Parting words, yet keen,
Soon utter'd. Hickman last was seen
Standing with his four children in a row,
And his poor wife, waiting the final blow!

Humanity shudders at this dread scene,
Yet only one it was 'midst more unseen;
"Room for a lady," cried out from the boat
Made Wilson rush in search, while yet afloat
The ship remain'd, for one that he would save,
But found her not: a girl, if she would brave
The danger, would do as well. "Will you go?"
To one he said, and soon took her to show
The leap she had to make the boat to gain.
"Oh! that I cannot do,—I must remain!"

* * * *

No time was left to use persuasion now;
Another moment, Wilson to the prow
Had sprung, and the laden boat kept out
Clear from the ship's side, as she roll'd about.
"A thousand guineas if you'll take me in!"
A female voice shriek'd out amidst the din
Of winds and waves, and creaking ship, and all
Those noises which such dreadful scenes befall:

Vain offer too, already 'twas too late,
The ship and boat too far were separate.

Could Bohun Martin in that boat be found?
Ah no! forbid the thought. He might be drown'd;
Yet how could he his passengers forsake?
To all these kind entreaties so he spake;
To Greenhill, as he placed him in command:—
“Go, take her in charge; yes, some chance the land
“To make you have;—but none have I:
“And with my passengers I will go down.
“Good bye. . . . I wish you all God speed.”
With these last words the bearings of the land,
And distance too, were given him off-hand.

How near, how close, the last catastrophe
To this farewell, some few too sure could see.
Ah, dreadful scene! for but few moments more
Death was receiving victims by the score!
It is a dreadful and appalling sight
To witness the found'ring of a ship outright!
No ling'ring death an iron ship affords,
Short work she makes,—no saving life on boards,—
Sudden and rapid to the depths below
She sinks, as flies the arrow from the bow;
And warning little had they on board the ship,
Their kerchiefs waving, they perceived no dip:
Yet in that boat, 'tis said, a sudden wind
Came strongly down upon them from behind,—
Indeed from all around; and this so strong,
No voices could be heard, nor aught among
That vent'rous band in consternation there.
See! see! the *London's* bows are in the air!
“No force can then resist, no flight can save,
“All sink alike, the fearful and the brave.”

* * * *

Too true! she's gone! and in that awful whirl
The vessel's stern first sank: the sea would hurl
Its restless waves around that stern, and fill
The void it made; the hull then following still
Soon becomes vertical, uplifts the bow,
And least resistance makes. Where is she now?
Soon would her weight secure her rapid fall,
On Ocean's bed she lies, and with her all
Her pond'rous iron handiwork of man,
Now in oblivion lost with all her clan!

* * * *

The boat was left upon that vortex' brink
 Wherein was seen the *London* soon to sink :
 That vortex narrowly escaping, too,
 With nineteen souls just taken from her crew !
 Aghast, the sad catastrophe to view,
 And at a time when they 'd enough to do ;
 To keep her free amidst the boist'rous seas
 A seaman's care did need : ill at their ease
 Were they, deliver'd from the *London's* fate,
 To them one like it might yet come though late !
 The boat was full, and stern resolves were made,
 That not one more should enter, be his grade
 Whate'er it might, or pressing the demand,
 When at the helm King took the chief command.
 A wise resolve ;—for seamen only know
 The surge to meet, through which that boat must go.
 Yet well they row'd, and well each did his work ;
 Where all those perils of the sea did lurk :
 And not a day were they in their distress,
 When Heaven had crown'd their efforts with success.
 How that was done already hath the Muse
 In former numbers given all her views.

Monitory Reflections.

That floating coffin's sunk beneath the wave,
 And borne too many to untimely grave !
 Yet has it not a lesson left behind,
 And will the British Public still be blind
 To such vile system? Will they yet consent?
 To drown by hundreds are they still content?
 Oh, let Britannia blush that such a stain
 Upon her nautic character should remain !
 She who pretended once to rule the main,
 To lose her children thus does not disdain,
 By hundreds have they gone to depths below,
 By hundreds more each year they still may go !
 Laws she has made, 'twere easy to obey,
 Yet not in spirit ;—broken every day !
 Those harbours, too, that Nature has denied,
 Rather her ships she'll lose than those provide :
 For which, alas, there is too good a cause,
 She has a code of bad insurance laws !

The Muse indignant that the hungry main
 Should thus be feasted that some one may gain
 At Albion's cost—that some more stringent laws
 Should not restrain this grasping impious cause—

This plan of building iron coffin ships;—
 Would thus forewarn those bound on foreign trips:—
 “Take these plain truths enough for you to know,
 “Across the seas who are obliged to go:—
 “Our merchant princes would a railway see
 “To all the world, but cannot on the sea!
 “And then more speed to gain their ships contrived
 “Of iron; no less dangerous than short lived!

“All you who lack experience of the sea,
 “And would avoid the *London's* destiny!
 “For yourselves act not: let some seaman friend,
 “Free from all bias, his clear judgment lend:
 “The largest ships from him you soon will learn
 “Are not the safest: he will soon discern
 “The kind of captain, officers, and crew
 “They'll have; also that they are advertised
 “Of larger tonnage than they are advised
 “By Lloyd's books: then to be proper sized
 “The ship about a thousand tons would do:
 “Where built? American, New Brunswick too,
 “Of handsome form? Their fast'nings all are bad!
 “Which *leaky means, aged* too, all that's sad!
 “Do, if you can, secure a summer's sail
 “From England, and avoid a channel gale,
 “When long dark nights of winter do prevail:
 “Avoid all these, for danger they entail.

Many more points experience will show,
 Your friend must look to; all of which he'll know.
 The most important point is here reserved,
 In order that it may be well observed.

“Let nothing tempt you *now* to make your trip,
 “In what is call'd a “*passenger's fast ship,*”
 “The *London* a crank clipper, hence her fate,
 “*For every foot of breadth her length was eight!*
 “No marvel such ships cannot carry sail,
 “When too deeply laden, 'tis then they fail;
 “The marvel is they live in any gale:
 “And that word “*crank*” translated means to say
 “They'll not bear sail in any kind of way!
 “Of these deep ships beware, and take no heed,
 “They're worse than dangerous in time of need.
 “Avoid them, be not tempted by their speed,
 “Unless you would be drown'd, and lost indeed!

“Remember the *London's* fate, let not yours
 “Another *London's* be, while time endures!”

(To be continued.)

FURTHER REMARKS ON THE GULF STREAM.

It is an acknowledged fact that in every element of the universe there is change and motion. The planets revolve in orbits which are slowly shifting in space, and closer observation shows that the Sun, with all his attendant system, is sweeping towards a certain point in the heavens not far from the star Aldebaran.

If we turn to the records of our globe, and consult the characters displayed alike on mountain and valley, change is visible. But we know not how many thousands of years may have passed in effecting the smallest of such changes. We see fire and the ocean as terrestrial agents of change,—the latter in a greater degree than the former; that winds, evaporation, and currents combine to agitate its restless waters. These, again, are never still; but, like the life-blood coursing through the veins of man, on they will flow until the Almighty stops the great palpitating heart for ever. Up to the present time it has not been my good fortune to find a correct chart of oceanic currents published. Even the limits of the greatest among them, the Gulf Stream, have not yet been satisfactorily mapped out.

When a system has once been adopted, even if erroneous, it is difficult to controvert it without the strongest testimony. For example: Keith Johnston and the founder of ocean research fill the region to the northward of the Antilles and around the Bahamas with the North-east Trade wind, although it seldom blows from that quarter at any season of the year.

In that part, as I have previously remarked, excepting the Northers of the Winter Season, the winds there generally blow from the *South-east*; but it is not uncommon in autumn to find them at *South-west* for days together. Old seamen speak of the falling off of the Trade wind with regret, but modern science can well dispense with it; for ships by the aid of steam cross this once pleasant locality without feeling its loss.

It has long been admitted that the Gulf Stream contracts and expands with the varying seasons of the year. From a series of my observations made on entering it, I am inclined to doubt the accuracy of this statement, being rather induced to believe that the limits of the southern edge over a considerable arc never vary. In summer, owing to the high temperature of the sea-water between the Antilles and the parallel of 39° N., registering the thermometer must be done with the greatest care, or the passage of the ship from the ordinary waters of the ocean into those of the Gulf Stream will not be perceived; as I have seldom found the difference to exceed one degree of Fahrenheit, neither is any line of demarcation visible.

In winter and spring, the reverse of these conditions is found. On a quiet day the rippling along the edge may be distinctly seen from afar, with pieces of drift wood, weed, and flecks of foam on the stream side. The thermometer immediately rises three or four degrees, the air becomes warmer and more humid, and the engineers are aware of

the rise of temperature by the condenser requiring more water to preserve the vacuum.

On the Great Circle track, from the Caicos to Cape Clear, this change takes place a little to the northward of the 39th parallel. There the warm water appears to stand like a liquid wall in the ocean, retaining just within its edge all the *débris* that chance throws on its surface till a southerly wind drives it across the boundary line.

To the southward of the edge of the stream the drain is generally to the south-west, with a varying velocity; occasionally I have found it varying three-quarters of a knot per hour. This counter current is what we might expect; just as the water of a river close to its banks will run in an opposite direction to the middle stream. Through gross inattention to the thermometer ships have often got into this current, and been set back. More than one man has had the folly to publish the statement that the Gulf stream has no existence, because in his ignorance he failed to take advantage of it when blundering along in its neighbourhood.

The Sailing Directions for the West Indies inform us that the warm water is just met with in coming from the southward about 180 miles to the eastward of Bermuda. Theory shows, and observation confirms the fact, that such cannot be the case. A body of water, of a higher temperature than the surrounding ocean flowing through a narrow pass, like that of Bemini, at the rate of 3 miles per hour must long preserve its compactness, and original direction unless deflected by some powerful cause from it. We know of none for the Labrador current, supposing it to possess sufficient force and velocity to turn aside such a stream impinges, on it too far east of this position to have such an effect.

How far east the southern edge remains stationary I am unable to say, as my observations only extend over a small arc. To trace it throughout its course in summer will require the most careful research, owing, as before observed, to the high temperature of the adjacent water. It may be considered presumptuous in me to offer an opinion on what is believed to be an established fact, but I have always thought that the northern edge of the stream keeps within very limited boundaries, carrying off the increased volume of water in summer by running at a higher velocity, rather than by a great extension of its limits. I would remark that this theory is founded on conjecture only as I have never had an opportunity of examining the northern part.

The difference of colour and temperature of the water on the Sainthill Bank* in early spring and autumn is remarkable. During the former, when the current is weak, the bank appears to act like an island in its course, by splitting the stream into two portions. At this season, when entering on the shoal-water, the change of colour can be immediately perceived by the unassisted eye, and detected by the ther-

* The Sainthill Bank owes its name to the report of Lieut. Sainthill, R.N. in the first volume of this work, 1832.

mometer. But in Autumn, when it rolls northward at its highest velocity, this bank appears neither to impede its progress nor to darken the brilliant blue colour which the deep water of the ocean always presents. Neither does the temperature decrease. I found it about 77° right across, while the flying fish and other denizens of the tropical sea would occasionally rise in our track, or the brilliant Portuguese man-of-war float idly by, with its delicate pink and blue crest glistening in the sunlight. Patches of the well-known gulf weed were also passed, mixed with a different species of a hardier race, having broad dark yellow leaves and stem.

Before many centuries have passed, this bank will, in all probability, have emerged from the sea, owing to deposits from the current, aided by the debris which icebergs may occasionally carry to it. The climate will be genial, although subject to fogs and great changes of temperature, owing to the sudden shifting of the wind from south-west to north-west and north.

To the south-west of the Azores I have found a considerable branch of the gulf stream, which surges backwards and forwards over a large area at different seasons of the year. My attention was first called to the fact by the constant yawing of the ship from her course during the summer and autumnal months, to the south-east. For three consecutive years I noticed this circumstance, and found the water on the 29th parallel, one and a half degrees cooler than it was under that of $31\frac{1}{2}^{\circ}$ north, from which I infer that during these months the influence of the stream is felt as far south as the former parallel, but in winter and spring is not perceptible.

From the latitude of 27° north, longitude 52° west, and steering southward, the temperature of the water gradually increased until the standard of the equatorial regions was attained.

The question naturally arises, in what manner is this water forced so far to the southward during these seasons? Is it by the great increase in the volume of the stream which pours through the straits of Bemini, or does it arise from another cause? I am inclined to adopt the latter opinion, and believe it owes its origin to a current* which runs to the south-east, between the coasts of Greenland and Labrador, after the ice has broken up in the northern regions.

As soon as the frosts of winter seal up the arctic seas, the southern edge of this arm gradually recedes northward until it joins the main body, and remains there until another term comes round. Thus it ebbs and flows in its long six monthly tide, on a scale commensurate with the volume of the mighty ocean-river to which it belongs.

After passing the Sainthill Bank the velocity of the current is greatly reduced, and soon becomes imperceptible when the speed of the ship is only measured by the common log. During the prevalence of light winds, sailing vessels would probably notice an easterly set much farther on.

* An *under-current* of warm water could nowhere be found beneath a mass of colder water, such as that about Greenland.

When one thinks of the unrecorded ages which must have passed while some great geological change was taking place, the mind becomes lost in amazement, although the evidence is written in imperishable characters on mountain and plain. So it is with me when I look forward to the future of the Gulf Stream, at a period so distant that the Almighty alone can know, when the coral insects will most assuredly dam up the Strait of Florida, and materially alter the climate of the north of Europe to a degree that no one can comprehend. By such natural means He who made the sea, effects changes which take millions of years to bring about.

Supposed Deviation of the Gulf Stream.—A gentleman of Mus-town has just received a letter, dated Nov. 21, from a friend at Newfoundland, who writes:—"The weather here continues more balmy than what we usually have in June. There is no doubt some unusual influence at work inducing this most extraordinary change in our climate, and I incline to the belief that it arises from a change in the direction of the Gulf Stream, which must have laved our shores this year on the eastward course. I know that the temperature of the water in our southern bays has been unusually high this season, and I have been told that flying fish and dolphins have been seen in our immediate neighbourhood, which would countenance the idea. Moreover, this island seems to be alone visited by this remarkable change, as the weather, both on the Labrador (north of us), and in the British Provinces and United States (west of us), is characterised by its usual severity. A change in the current of the stream would also account in some measure for the numerous catastrophes that have befallen steamships on our coast this year, all of which were much north of the positions which their Commander had assigned them."—*Western Times.* | We have added this extract as an additional remark on the subject.—Ed.]

VOYAGE OF THE PIONEER.—No. 3.

(Continued from page 19.)

As our crew had their little fun when crossing the Line, they proposed having some on passing the Cape, and fixed on the black cook as the scape-grace for their joke.

A device had been adopted by a vessel when rounding the Cape, of tying the ship's name on paper to the leg of a Cape pigeon, which was shortly afterwards caught on shore, and the ship was thus reported in the Cape papers. In due course it was found in the English papers also; and the joke was to make such a story of all this to "Black Sam," that he was led to believe that not only could he send a letter to his sweet-heart (of whom he was always boasting), but more wonderful still, that he could get back an answer. The cook took the bait, and no sooner had he cleared out his coppers than he

set to work at once, and dictated a letter to the fore-castle scribe, an old man-of-wars' man, well up to his work, and was at the bottom of this and most other fun on board.

Of the epistle thus concocted there is no need to record a copy, only remarking, that for oddity of expression and strangeness of spelling, it would rival "Jeames's." The bird which carried it would have been a fine "catch" for any editor of a Cape newspaper; but as nothing was ever heard of it, there is reason to think that it went where so many treasures, literary and others, have gone, i.e., "Davy Jones's Locker." Rather a pity, too, for the people on shore lost a good laugh, and unlike some on board, would not have had to pay for their merriment when the joke was found out.

"Sam," who could neither read nor write, had the letter ended by reminding his "Samarina" of her parting words—to wait for him until his return; and having put one of his woolly locks into the letter, and had himself signed, her "werry belubbed lubber," he carefully watched the sealing, and had the address read over and over again, to be sure of no mistake.

While this was doing, a Cape pigeon had been caught, but what with the size of the paper, with the big seal outside and the wool in, the poor bird couldn't carry it, and an Albatross was caught and sent away with the letter about sunset, and so far favoured the joke as to fly in the direction of the land. The next thing was how to contrive the return post without making Sam suspicious. This was done by the cunning Ben, who had got all the particulars about the "Samarina" when he wrote the letter to her, and so worded the answer as entirely to convince Sam that she had written. Not only did she repeat her promise of waiting for him, but sent him a lock of her red hair as a love-token, which made Sam the happiest creature on the sea.

This occurred three days after the despatch of Sam's letter, just before day-light, when it was said a Cape pigeon flew against the binnacle, and fell on the deck exhausted, with a small roll of paper tied to one of its feet: this was "Samarina's" fond answer. But short was Sam's bliss, and the laugh of the jokers; for as the unhappy red-headed boy happened to be at the galley at breakfast-time, with a message from the steward, the cook noticed a notch in his hair where a lock had been cut away. Alas! this, in an instant aroused his suspicions. He seized hold of the boy, and pulling the letter out of his pocket, compared the love-lock with little Tom's carotid poll, and found it to match exactly. The discovery left Sam no doubt of his having been befooled, and for the moment made him too miserable to wreak his vengeance on the boy, who flew to the fore-castle for protection, and to tell what had happened.

To the surprise of the crew, Sam said nothing about the matter to any one, and the cause of his silence was not known until it was felt late in the day, when there was a general flocking to the head; and then the sailors remembered that the pea-soup at dinner had a strange flavour, and it turned out that Sam had put jalap into the soup to revenge himself, and so turn the joke against the jokers.

Familiarity with danger is the common experience of seamen, and it is remarkable to what a degree this sometimes is carried, so that it would be true to say that, there are occasions in which for days together they stand face to face with death, impending and imminent. This remark applies to those in the *Pioneer*, when running in a S.W. gale, with a very high sea between the meridians of the Cape and Madagascar. No one who could have seen this frail, shallow vessel on the top of a sea, with a great part of her after-keel out of the water, and her rudder in the air, but would expect to see her engulfed immediately.

Seamen who have braved that portion of the ocean know what the waves are in a S.W. gale between these two meridians, and I shall always remember that part of our passage as the most risky forty-eight hours sailing I have known. It was dangerous to attempt to lie to, and it was dangerous to run, both on account of the high sea and the difficulty of steering, as the rudder was so often out of the water.

As sea after sea rose up over our low stern, lifting itself on high, and gathering up its awful form to advance with the sound of thunder, and with the force of an avalanche, it seemed impossible that the vessel could escape, and yet she *did* escape; and from the crest of each tremendous wave she would sweep down the surging slope like a Massoolah boat in an angry surf on the Madras beach. Glad enough were we when the wind hauled to the South and moderated, leaving our craft a little loosened from having been so tossed about, and leaving also on the mind of each seaman who took the wheel during the time, a recollection of the peril, and how it looked as if it would soon be "watch below" for all hands, as the enormous waves rose astern and becalmed the vessel, until they thundered on and bore her upward.

Nothing deserving notice occurred until we neared the islands of St. Paul and Amsterdam, when we witnessed a remarkable phenomenon: the two islands were made to appear like one long, low island, by a very dense cloud which stretched from one island to the other. So dense and compact was this mass of cloud, that it had all the appearance of land, and as we approached, a small opening like a narrow strait was seen ahead, for which we steered. There was a westerly wind blowing at the time, and the only way of escape seemed to be through this narrow strait, for had we hauled to the wind we should have drifted right on to what looked like a lee shore.

No one on board had seen these islands before, and the optical illusion was so perfect, that as we neared the narrow opening I felt very uneasy, for the nearer we approached it the narrower and more crooked appeared this supposed strait, until it was hid from our view altogether, and we appeared to be embayed on a lee shore without the smallest chance of beating off with such a crab of a craft, which always went sideways when not going free. There was no time to be lost, land close ahead was the startling cry from aloft, and just as we were shortening sail and about to get an anchor over the bow, the dense cloud lifted suddenly, and there we were with a clear sea before us,

and the island of St. Paul about three miles off on our star-board bow and the other island far away on our port-beam.

I never witnessed a more complete optical illusion at sea than on this occasion; for, while it often happens that a cloud is taken to be land, here was an instance of cloud and land being so compacted together as to appear one and the same mass, and I was led from this strange sight to account for the many false notions the early navigators had at times of the lands and *no* lands they were reported to have discovered. The day after leaving these islands we saw the prettiest sight of our whole passage. It was a small floating islet of remarkably compact sea-weed, with a number of white birds resting on it, and as it rose and fell with the sea without disturbing its inhabitants, each one appeared as if sitting on a nest. It looked at a distance like a bed of water lillies, and we were sorry when we lost sight of this little oasis in the ocean desert.

The opportunities for fishing-up all kinds of strange things from the sea in so low a craft has been alluded to in a former paper, and I will only mention here, that from the extraordinary variety of organizations I saw during this passage, I am inclined to think that there is reason for the opinion that the sea contains many forms of life corresponding to those on the land. I also have remarked that almost every province of the ocean, if I may use the word, has its own particular and characteristic forms of animal life, and I think this will be found true also of every port not too near another.

Three days after leaving St. Paul and Amsterdam we fell into the heavy gale already described in the *Nautical Magazine*, in which we drifted a hundred miles and more, and, during which, the vessel began to give way amidships and to make it necessary to keep the pumps going. I have only to repeat a remark concerning this gale, in which the *Pioneer* was so nearly going down, and it is this, that a Captain of a ship, in a hard gale with a high sea, cannot be too careful in watching to see what canvass will best suit his ship under the particular circumstances of her build, rig, and trim, for it is impossible to doubt that from neglect of this many a good ship has foundered when lying to, when a little skilful seamanship would have saved the vessel and all hands.

W. C. P.

MARINE LEGISLATION.

The following are extracts of letters we have received on this subject:—

“If Captain Toynbee really desires to increase the risk which always attends an overladen vessel—to increase her liability to destruction by fire—to foster and encourage the dirty habits of some seamen—to increase the chances of sickness in all climates—then let him break up the comfortable topgallant forecastles which many of our fine merchant ships now have, and which, by following out my plans, all might

have. Often when steaming through the tropics during the prevalence of long calms have I gone with some fellow-passengers on the fore-castle to escape the heat, smoke, and ashes which covered the quarter-deck, while Jack lay quietly smoking his pipe and conning over some old newspaper, cool as a cucumber, the current of air produced by the rapid way of the ship through the water."

"I am surprised that Captain Toynbee can advocate that seamen should be below. Apart from the reasons which I have advanced is the serious one that a deeply-laden ship would be endangered by having any opening forward in bad weather. But all evidence will show that a crew ought to live on the upper deck."

Another letter says:—

"Let us hope that something reasonable will be done for seamen, as they cannot in the depressed state of trade expect many expensive alterations. Indeed such are not required. A dry fore-castle, good limejuice (and no sham stuff), and preserved provisions twice a-week, would satisfy them. With respect to pensions, &c., men must help themselves, or Government must establish a compulsory monthly payment."

MERCATOR.

Another correspondent, many years in command of merchant shipping, says:—

"The more interesting and valuable contents of the late numbers of the *Nautical Magazine* are those which bear upon the (to be) improved accommodation for seamen.* For, after all the talk about Sailors' Homes, the fact remains, that the Sailors' Home is his *ship*, and that no reasonable and human effort should be wanting to make his home healthy and comfortable; and allow me to say that I consider you can render no more real service to our seamen than by a persisting advocacy of this greatly-needed improvement.

W. C. P.

A correspondent sends us the following on this important subject. The leading article of our present number also bears upon it most importantly, as to qualification for command.

Whilst Parliament is contemplating legislative intervention between the shipowner and the seaman, *Fraser*, in an article on the subject, states that:—

A revision of the Merchant Shipping Act of 1854 is called for, not alone on the seaman's behalf, and to compress its upwards of 600 Articles into a more compendious form for the reference of seamen, but to remedy some of the grievances of shipowners, who think themselves saddled in some cases with a responsibility which should be borne by their servants. In any such revision which might be usefully made, it seems to us imperatively necessary to add:

1. A compulsory dietary scale, which shall include a given quantity

* See p. 35 January number.

of potatoes, or an equivalent in yams, pumpkins, &c., with suet and dried fruits.

2. An issue of good lime-juice guaranteed from bond, or an inspection of that supplied by the trade.

3. A regulated amount and description of fore-castle accommodation, with the number of persons it will accommodate legibly painted on a conspicuous bulkhead, and a small fine, recoverable before a magistrate, for any infringement of the law.

4. That seamen be paid wages by the shipowner whilst suffering from scurvy, and until medically declared fit to earn their living again.

5. That a fixed portion of the wages should be paid on account before the men are discharged to the shore, and thus save them from the credit system, by which crimps, male and female, live. The rest of the wages, with the papers, being forwarded through the post-office to the seamen's addresses, without compelling them to remain five days penniless and idle in the midst of that sink of iniquity about the Docks. Disputed cases of wages stopped for misconduct might be reported immediately on arrival by the captain, and decided before discharged, without waiting for the final balancing of the accounts. Or, still better, that the seaman should receive wages and provisions, &c., up to and including the day of payment, as in the Royal Navy. Pecuniary interest would soon suggest arrangements by which this could be effected within twenty-four hours of arrival; and the seaman might then be taken at his own expense in an omnibus or van with his traps, to the railway station or his home without the aid of crimps.

6. A medical inspection of each seaman before entry, to test his freedom from acute disease; and an extension of the Contagious Diseases Act to the seaport parishes of mercantile towns.

7. A *volunteer* pension and benevolent fund, managed by the Government shipping-masters, and guaranteed by the Government, which would tie seamen to their own country, and promote provident habits.

8. Married Sailors' Homes should also be established, in which seamen could lodge their wives and families in safety during their long absences, paying a remunerating rent for the accommodation; and ship-owners might be required to comply with the request of husbands and fathers to pay half their growing wages to their families in their absence, provided a month's pay were in hand to meet contingencies.

9. Lastly, a premium to shipowners on each apprentice indentured and carried in their ships without fee.

To this we may ourselves add, that a public prosecution in every case of shipwreck would essentially conduce to the reduction of marine disasters and the loss of life, which now frequently results from culpable negligence, if not actually wilful rascality. In the Royal Navy such a trial always follows the loss of a ship, however obvious may be the cause. Some Chambers of Commerce have petitioned for the appointment of such a public prosecutor.

THE "AMAZON" AND "OSPREY" COLLISION.

Sir,—In the *Times* of the 4th of February, Commander Colomb makes a most unjustifiable remark on the decision of the elder brethren of the Trinity House in the case of the *Amazon* and *Osprey*. In defiance of the evidence of the survivors—in defiance of the decision of a court martial—in defiance of the decision of the Admiralty, who marked their sense of the culpability of the act by confirming the decision of the Court—we are informed in a few flippant words that the representatives of the naval and mercantile marines of England have given an opinion contrary to the rules of the road and the dictates of common sense. Had Commander Colomb clearly and dispassionately reviewed the evidence, his opinion might have commanded attention; now, it will be condemned by professional and non-professional readers alike. I have long thought that the majority of the collisions between sailing and steam vessels take place from the fact of the former trying to get out of the track of the latter, and those between steam vessels from not being able to infer the intentions of each other. To obviate this, I suggest that all steamers should carry on the starboard side a second green light at any reasonable height above the present one. Have an easily worked screen fitted to mask or unmask the light at pleasure. Now, suppose two steamers are approaching each other in opposite directions with their respective green lights about a point on the starboard bow. This is a trying position if one is carrying square sail with a scant wind, and men often hesitate to port and back the sails, still the law is imperative, and at any risk it must be done, or the party failing to do so would be unhesitatingly condemned to pay all damages should a collision occur. In cases of this description unmask the second green light which should signify I will pass on your starboard side.

On many occasions when meeting sailing vessels have I felt the want of some method of informing them that I was perfectly master of the situation, for I have frequently seen them alter the helm three times in as many minutes, while I have kept steadily on, depending on the good steerage of my ship to sheer clear at the proper time, or by porting or starboarding a handful of points ran out of their track. The latter is most annoying when pushing on to save a tide, or when much sail is set; but it is preferable to the risk of collision.

I am aware that all innovations should be introduced with caution, and I only throw this hint to the authorities from the result of my experience. A naval captain has recently published rules of the road, the perusal of which raises a smile of contempt on the faces of our commanders of steam ships.

MERCATOR.

THE LATE G. W. SKYRING, ESQ.

Sir,—Permit me to trouble you with this line "*In memoriam*" of a friend of the "Queen Adelaide Memorial Naval Fund," its late honorary Secretary, G. W. Skyring, Esq., who so diligently and disinterestedly devoted his leisure to the interests of the above-named important national charity.

The *Nautical Magazine* contains an account of its origin in 1849; an origin entirely due to the suggestions and energy of Mrs. Skyring, the honoured but long widowed mother of the lamented departed, and carried out noiselessly, but effectively, by their unwearied and affectionate co-operation, at Somerset House, for the last sixteen years, under the periodical deliberations of two committees, formed respectively of ladies and gentlemen, either connected with the navy by profession, marriage, or deeply interested therein.

It may not be irrelevant at this saddened epoch to remind your readers that the Fund was originated soon after the demise of the widow of our Sailor King, to serve the double purpose of perpetuating the memory of her attachment to the profession of her royal husband, and in some measure to supply the lack of that bounty to the necessitous relatives of officers deceased in their country's service, which that excellent lady, in her lifetime, so liberally distributed.

The Queen Adelaide Naval Fund is employed solely in affording relief to the daughters of naval officers of ward-room rank, who have died leaving such members of their families to struggle with sadly insufficient means in the battle of life for a descent provision. It assists the education of girls, by paying the fees of accepted candidates for admission at the Royal Naval School at Isleworth, and it affords the means of purchasing necessary outfits for young ladies prepared to take the situations of governesses, or it advances a moderate sum to tide over an unusual influx of sickness and suffering. In all such cases the Queen Adelaide Navy Fund has shown its power and its will to succour in real well-ascertained distress and honourable necessity the applicants for its relief; and all those who have experienced its timely aid will bear testimony to the unvarying courtesy and sympathy of the late amiable and lamented Honorary Secretary. Great, indeed, is the loss of him—deep and sincere the regret of all who, like myself, know the length and worth of his labours, beginning as they did quite in early youth; for at his death, in October last, Mr. Skyring was little beyond the age of thirty.

You will, I am persuaded, allow these few lines a place in your important Magazine, in remembrance of departed worth, and also in recommendation of the benevolent object which the lamented friend of the Institution so fully and nobly served.

Believing me to be, Sir,

Yours faithfully,

A MEMBER OF THE LADIES' COMMITTEE.

To the Editor of the Nautical Magazine.

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 31, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 102.)

All bearings are magnetic.

Name.	Place.	Position.	F. or R.	Ht. in Feet.	Dist in Mls.	[Remarks, &c. Bearings Magnetic.]
6. Rockhampton Port	FitzRoy R.	Queensland	F.	44	8	Est. 31st October, 1866. (a.)
Lady Elliot I.	Curtis Chan.	.....	F.	67	9	Est. 10th November, 1866. Temporary.
At Pilot Stations—						
Richmond R.	} Australia	.....	F.	..	..	Est. 1st December, 1866. Red.
Clarence R.		.....	F.	..	..
Manning R.		.....	F.	..	..
7. Dunkerque Roads	North Sea	Adrift	..	..	..	31st January, 1866. Broke adrift.
8. St. John's Harbour	N. Brunswick	Bell buoy a-drift and light discontinued	..	..	..
St. Mark's	Florida	.....	..	..	..	Re-est. 8th January, 1867.
9. Mahone Bay	Nova Scotia	44° 26' 8" N., 64° 4' 5" W.	F.	..	12	Est. 1867. Two lights of equal height, 25 feet apart, on East of Ironbound Island.
Tatamagouche Bay	Ditto	45° 50' 3" N., 63° 10' W.	F.	44	12	Est. recently on Amet Island.
Green Island	Ditto Gut of	.....	..	..	..	Est. 1st October, 1866. The old white light changed for red.
Egg Island of Ship Harbour	.....	.....	..	..	..	Est. 1st Oct. 1866. Lighthouse painted black and white vertical stripes.
10. Genoa Time Signals	.....	.....	..	..	..	See note (b.)
Gibraltar Mole	A temporary	Light Red	F.	..	..	Est. 1st February, 1867. Present red, white and green light discontinued. See note (c.)
11. Stronsa Firth	Auskerry	Orkney Isles	F.	110	16	Est. 1st March, 1867, on South end of island.
Start Point	Sanda Island	Ditto	F.	..	..	Est. 1st March, 1867. White changed to red.
Deer Sound	StronsaForth	Ditto	..	..	..	Buoy red. See note (d.)
12. Tynemouth Castle	England, E. coast	.....	R.	154	17	Revolves once a minute. See note (e.)
Lowestoft Pier	Directions altered	.....	..	..	..	See note (f.)

F. Fixed. Pfl. Fixed and Flashing. R. Revolving. I. Intermitting. Est. Established.

(a). 6.—*Directions*.—Bring the light to bear to the southward of S.S.W. before the two red lights at the pilot station are in one (the light being visible from the Timandra bank), then haul up to round the Timandra bank buoy. After passing Sea hill point, steer so as to go less than a cable East of the light vessel; haul up close round South of her and steer West (Northerly), leaving the black buoy and the black beacon off Raglan point to port, passing about a cable Southward of the large Mangrove island.

Passing thus Southward of the vessel, not less than 15 feet will be found in the channel at L.W. springs.

(b.) 10.—*Time Signals at Genoa.*—The Italian Government have given notice that from the 1st day of January, 1867, the following time signals would be exhibited from the new Observatory in the old Fort of St. George at Genoa:—

1st. A *red* flag will be hoisted on a mast on the eastern corner of the piazza of the Observatory, as a preparatory signal, 15 *minutes* before mean noon.

2nd. The flag will be replaced by a *red* ball with a white horizontal band round the middle at 30 *seconds* before mean noon.

3rd. The ball will drop precisely at *mean noon*, at the Meridian of the Observatory.

The Observatory is in long. $8^{\circ} 35' 21''$ East of Greenwich, in time Oh. 35m. 41.4s.

The Observatory is visible from all parts of the harbour.

(c.) 10.—*Caution.*—A wide berth should be given the extremity of the mole, in consequence of the uncertainty of the set of the tides.

It is dangerous for vessels to attempt to come alongside the mole, or to anchor under its shelter, in dark nights.

(d.) 11.—A seven-foot *red* buoy has been placed on the West end of the Taing of Barn, a shoal that runs West from Tankerness point, in Deer sound, Stronsa firth, Orkney.

The buoy is moored in $2\frac{1}{2}$ fathoms, low water springs, with the following bearings:—

Tankerness manse in line with the North end of Storehouse N.W.b.W.;

Fea hill farmhouse N. $\frac{1}{2}$ W.; and

Tankerness point E.b.N.

Bearings magnetic. Variation $24^{\circ} 40'$ West in 1867.

(e.) 12.—*Castle Yard Light, Tynemouth*, erroneously described in Admiralty List. Chart is correct as stated No. 12 in table.

(f.) 12.—In p. 104, February number, for line 16 to end, read “vessels should open out the red light of the Lowestoftness by keeping to the southward, and when the North pier light opens, run for it until the Low red light changes to white.”

FORMOSA SOUTH AND WEST COASTS; AND JAPAN SOUTH COASTS.— *China Pilot, Notice 1.*

The following remarks on the coasts of Formosa, are by Mr. George Stanley, Master, R.N., in charge of the *Dove*, tender to H.M. surveying vessel *Swallow*, Master Commanding E. Wilds.

All bearings are Magnetic. Variation $0^{\circ} 30'$ W. in 1866.

Formosa Coast between South Cape and Takai-kon.

The South Cape or Nan-sha in lat. $21^{\circ} 54'$ N., long. $120^{\circ} 50'$ E., gradually slopes down from a peculiarly rugged hill, distant 4 miles, and 1,035 feet high. Excepting a few bare, burnt patches, the whole of the cape is thickly wooded, and fringed by coral.

South-west Point bearing W.b.N, 7 miles from South Cape, is the termination of the Gooswa promontory, an almost level ridge 500 to 600 feet high, extending 7 miles in a N.b.W. direction.

Kwa-leang Bay, formed between the South Cape and S.W. point, recedes about two miles on the western side to a white sandy beach, conspicuous from the dark land over it. Eastward, and towards the

South Cape are alternate sandy bays and prominent points. Three bold, conspicuous black rocks, about 10 feet above high water, stand almost equi-distant from each other, half a mile off shore, and are easily seen. On the West side between the points of the bay there are 66 fathoms, $1\frac{1}{2}$ miles from the shore; but on the eastern side at the same distance, there are only 28 fathoms.

Anchorage.—In the N.E. monsoon there is good anchorage anywhere on the N. and N.E. sides of the bay, in 10 or 12 fathoms, about half a mile off shore. The *Dove* anchored at half a mile northward of the South cape, and also half a mile off the middle sandy bay. In anchoring near the South Cape, remember the ebb tide sets 4 knots per hour to seaward, and tide-rips off the point are very heavy.

Caution.—The natives of Kwa-leang bay are hostile to strangers. The *Dove's* boat was attacked, a man wounded, and the surveying party narrowly escaped being cut off: yet it is reported that Europeans have been kindly treated when in distress,

Gooswa Promontory extends N.b.W. 7 miles from S.W. point. The elevation slightly varies, the southern summit being 538 feet high, and the northern 627. The most conspicuous feature is a sand beach in Chim-kong-o bay, a mile north of S.W. point. When approaching the promontory from the northward it appears as an island; the shore is bold, at 2 miles off there are 200 fathoms water, and a quarter of a mile, 50 and 60 fathoms.

Lung-keou Bay is formed between the North extreme of the Gooswa peninsula and a sugar-loaf hill (411 feet high), and is 4 miles in extent; a sandy point projects into the midst of it, with low water rocks 2 cables from it. A small walled town stands at the back of the bay, about a quarter of a mile from the beach.

To the northward of Gooswa promontory the coast is inhabited by Chinese, the natives living in the mountains and seldom visiting it. The two races are at perpetual war; and whilst surveying the coast the travelling parties of Chinese met with were always armed with gingalls and swords.

Anchorage.—There is good anchorage in this bay in 5 to 10 fathoms during the N.E. monsoon, with the sandy point bearing N.E. three quarters of a mile. The holding ground is good, and also midway between the point and the sugar-loaf, in 8 or 9 fathoms.

Le-lieng-sua is the northern termination of the higher mountains of Formosa, and rises to the height of 2,365 feet, an almost level range of 5 miles extent. The highest part of it when seen from the North and West, makes as a pap.

Che-tong-ka extends half a mile from the high land, bearing N.b.W. 13 miles from Gooswa promontory; the coast is bold and steep, the hills continuing nearly to the water's edge. Anchorage anywhere along the coast in 8 or 9 fathoms, is sheltered from winds from North round to S.S.E. Two miles North of Che-tong-ka the bold land terminates at the foot of a hill 1,340 feet high, whence the mountain range trends to the N.N.E. and the low and level shore to the N.W.

Lambay, 2½ miles long in a N.E. direction, is the only island on the West coast of Formosa. Its summit is flat, the highest part being 258 feet, and in lat. 22° 20' 30" N., long. 120° 22' 30" E. It has an average breadth of a mile, the shores fringed with coral; the Northern shore is rugged with a few small sand beaches, the Southern has a sand bay half a mile in extent near the middle. The most conspicuous point is the North-Eastern, round, and composed of fine white sand. Fishermens' houses are scattered over the island. There is no anchorage near this island, for within a quarter of a mile there are 30 and 40 fathoms water.

Tang-kang River entrance is N.N.E. 7 miles from the North point of *Lambay* island; at low water there are only 4 feet on the bar, which shoals suddenly from 20 and 30 fathoms. The entrance can be distinguished by the junks moored on the North bank of the river, as also by a clump of trees seen a little distance to the Eastward and about 2 miles inland. The town, standing on the South side of the river near the entrance, has about 20,000 inhabitants. The principal export is rice, which is carried in small junks. Between *Tang-kang* and *Lambay* is a remarkable depression in the sea-bed, being in some places nearly 200 fathoms in depth. Abreast of this river is the only place between *Ta-kau-kon* and *Lung-keau* bay where a ship *cannot* find good anchorage in the N.E. monsoon.

Hong-pe-taou, a rocky point between *Ta-kau-kon* and *Tang-kang* is the termination of the smooth and slightly-rounded *Hong-swa*, which is 468 feet high. Between the hill and point is a well marked saddle hill 259 feet high; this, seen from the North or South, appears as two chimneys. Towards *Ta-kau-kon* the coast is low and bushy, inhabited by fishermen in scattered houses. The large lagoon terminating the harbour of *Ta-kau-kon* reaches to within 2 miles of *Hong-swa*, leaving a narrow slip of coast.

Ta-kau-kon, the Consular port of *Tai-wanfu*, the only harbour on the West coast of Formosa, admits vessels only of 12 feet draught, the entrance is midway between *Saracen's head* and *Ape hill*, and the fair channel only 200 feet wide. The bar is two cables from the entrance, with 10 and 11 feet at l. w. spring tides. Immediately inside, and facing the entrance, is a sand spit with 7 feet on it at l. w., which narrows the harbour to 200 feet, and ships frequently ground on it.

Directions.—Vessels making for the port will easily distinguish *Ape hill*, with its flat top 1,110 feet high, and large white landslip facing to seaward, seen in clear weather upwards of 30 miles. To the southward is *Saracen's head*, appearing as a detached portion, and the small gap between the two is the entrance to the harbour. If obliged to run for the entrance in bad weather, bring it to bear E.b.S. ¼ S., and run boldly in, keeping the Northern shore close aboard. As the rocks are neared, starboard the helm and round the Northern head close to, shooting into a little sandy bay, where a vessel may touch the ground with her forefoot without sustaining any damage, and afterwards haul into a berth, mooring head and stern. Small vessels drawing 8 and 9 feet can run past the moored shipping, keeping the Northern head on

a West bearing, anchoring in less than 2 fathoms, and veering chain just sufficient to swing clear.

Sugar and rice are the chief exports; barques of 400 tons load to the draught of 12 feet, completing the cargo in the roadstead. The harbour is filled with 14 or 15 vessels. There is a good Chinese pilot, who also supplies catamarans for towing vessels in or out.

Coast between Kakaou and Wanckan Reef.

To the Northward of Fort Zealandia the coast has no distinguishing feature, the highest bushes and huts being but a few feet above the low level land.

Kakaou, an inlet in lat. $23^{\circ} 13' N.$, long. $120^{\circ} 3' E.$, is a temporary fishing village on the North bank of a small and narrow inlet, in the entrance of which there are 8 feet at low water; boats only can enter, and when blowing a strong monsoon this is attended with difficulty, as the sea breaks the whole way across.

Paw-tay-chui, a small inlet, bears from *Ka-kaou* N.N.E $\frac{1}{2}$ E. distant 11 miles. The coast between is a low narrow strip of land, only 4 or 5 feet above high water. The town is a mile from the entrance, and its inhabitants piratical, who often bid defiance to the mandarins. The entrance is from the N.N.W., and also difficult of access when the monsoon has any strength. S.S.W. of the town of *Paw-tay-chui* is the most conspicuous landmark between *Wanckan* and *Kakou*; it is a mound $1\frac{1}{2}$ miles inland, covered with trees and huts; the native name is *Ang-hay-kang*. West of this a spit extends for nearly a mile off shore.

From the entrance of *Paw-tay-chui* the coast stretches in a N. $\frac{1}{2}$ W. direction 6 miles; the trees inland are thicker and more continuous than to the southward, and when seen from that direction the northern extreme appears as a bluff.

Wanckan Reef or *Chin-ne-ya* is the westernmost part of the island of Formosa. The small sandy patch on the South end, on which a hut is erected, is only one or two feet above high water, and is in lat. $23^{\circ} 31' N.$, long. $120^{\circ} 2' E.$ To the southward at low water the reef dries nearly 2 miles and continues in a N. b. E. direction. S.S.W. from the hut, 3 miles, is a patch with only 4 feet on it at low water. The *Wanckan* reef may be considered the great danger in the *Formosa* channel, and the Chinese say that there are many junks and ships lost on it during the year. The navigator from North or South has no land marks to guide him, and strong tides render a ship's position at all times doubtful. Running parallel with the dry part of the reef, and 3 miles from it, is a long patch of from 2 to 3 fathoms, that in the S.W. monsoon breaks with great violence. The *Swallow* and *Dove*, whilst sounding the channel in September, 1864, anchored in 20 fathoms off the reef, and saw nothing but one continuous line of breakers as far as the eye could reach.

Ay-aw Bay, formed by the *Wanckan* reef and the low opposite shore, lies North and South for a distance of 4 miles, and in some places is 2 miles wide. A narrow channel with 10 feet depth of water

can be traced out, which for junks and small vessels affords anchorage and shelter. In the S.W. monsoon entering it would be attended with almost certain destruction, but in the N.E. monsoon good shelter can be obtained outside. Sugar is the principal export, shipped in junks of about 200 tons burthen. This small place has much deteriorated during the last few years.

S.E. 7 miles from the hut on Wanckan reef, and W.N.W. 4 miles from Paw-tay-chui is a sandy patch with 2 fathoms on it at low water, which must break heavily in the S.W. monsoon. The depths on the coast are 8 and 9 fathoms at 3 miles West of Kakou, 9 and 10 fathoms 6 miles off Paw-tay-chui; and 5 miles West of Wanckan reef there are 40 fathoms fine dark sandy bottom.

Tides.—It is high water at F. C. at Wanckan 10h. 10m. and springs rise 5 to 6 feet. The tide turns with high and low water by the shore, the flood running $3\frac{1}{2}$ knots, and setting to the N.N.E., the ebb in an opposite direction, not quite so strong. Between Wanckan and Kakaou the tides do not attain a greater velocity than $1\frac{1}{2}$ to 2 knots, and run parallel to the shore.

Remarks on Formosa Banks.

Considering the limiting edges of the Formosa banks to be a depth of 20 fathoms, their northern edge will be in lat. $23^{\circ} 28' N.$, long. $118^{\circ} 25' E.$, and their eastern side in the parallel of $23^{\circ} N.$ and long. $119^{\circ} 15' E.$ The western edge of the banks can scarcely be delineated, as it stretches from the Lamock islands without any marked irregularity in depth. The shoalest part, 5 fathoms, is in lat. $23^{\circ} 1' N.$, long. $118^{\circ} 29' E.$ The banks are formed of coarse white sand, with patches or mounds with 7 to 10 fathoms water on them; these patches are between the parallels of $22^{\circ} 40'$ and $23^{\circ} 15' N.$ and between the meridians of $118^{\circ} 10'$ and $119^{\circ} E.$ When sailing slowly through the water and sounding, it was frequently found to shoal suddenly from 18 to 8 fathoms, increasing in depth again as rapidly. Heavy overfalls generally indicate these sudden variations in depth. Fish abound in large quantities; immense shoals were seen in the months of April and May. The current during those two months was generally found setting to the N.E. one mile an hour, increasing in strength towards the Formosa coast.

General Remarks.

Vessels trading between Ta-kau-kon and Amoy should endeavour to sight Junk island, the most southernmost of the Pescadores; the course between is N.W., and S.E., which leads 10 miles to the northward of the Formosa banks. If making the passage from Amoy, Ape hill will be visible shortly after Junk island is passed, as it can be seen in fine weather upwards of 30 miles. In thick weather, with the ship's position uncertain, the lead can then be relied on. If abreast of Ta-kau-kon, or to the southward, 100 fathoms and upwards will be obtained; if off Tai-wanfu or Kok-si-kon, 70 and 80 fathoms. The

nature of the bottom can scarcely be depended on, as it varies from mud to fine dark sand and shells.

Vessels leaving Ta-kau-kon for Amoy in the N.E. monsoon will gain most ground by working up the Formosa coast, as they are then enabled to stand through the Rover channel, after which a moderate sailing vessel will be able to fetch Amoy.

Ships making the passage from Hong Kong to Shanghai during the S.W. monsoon should sail through the Pescadores channel, as the current is steady in strength, seldom running more than a mile an hour, and the channel, compared with that of Formosa, free from danger. Vessels from Hong Kong, bound to the northern ports, in the latter part of the N.E. monsoon, with the intention of beating up east of Formosa, will sometimes meet with a south-easterly breeze off the South Cape; should this happen it will be prudent to run up the West coast, taking care, after passing Ta-kau-kon, to sight the Pescadores, which will insure clearing the Wanckan reef.

JAPAN SOUTH COASTS.

The following remarks on the South coast of Japan are by Commander Charles Bullock, R.N., commanding H.M.S. *Serpent*, October 1866.

The bearings are magnetic. Variation 4° W. in 1867.

Kagosima gulf.—A sunken rock called Kami, lies in the mid-entrance of Kagosima gulf, 3 miles off the northern shore. The bearings from it are,—Horner point, N.W.b.W. $\frac{3}{4}$ W.; Horner peak, N.W. $\frac{3}{4}$ W.; Satanomisaki (C. Chichakoff), S. $\frac{1}{4}$ E.; Otosaki, S.S.E. $\frac{1}{2}$ E.; and the East head of Tsiringsima just opening the North and low wooded point of Yama-kawa, N.N.E. $\frac{1}{8}$ E.

This last serves as a leading mark if Tsiringsima be kept well open. The bottom is very uneven off Yama-kawa, a ledge of 3 to 6 fathoms, extending a mile, steep at its edge. The lead shows black volcanic sand, white sand, and clay, with seldom two casts alike. The well known Seven Stones anchorage is the best on the western side of the bay below Kagosima. The remainder of the western shore of the bay to the southward has been partially examined; some banks and steep ledges were found which render the whole shore generally unsafe for anchorage.

Nelly Rock.—Even soundings of 24 fathoms were found all about the position of the Nelly rock, off the S.E. coast of Sikok, as now placed on the chart; the bottom being rotten stone.

Boungo Channel.—Off the South-western part of Sikok, at the entrance of this channel, several reefs and a large island are omitted from the charts, which cannot be specified in a short notice. Caution is therefore requisite.

Nomi, in lat. $33^{\circ} 23' N.$, long. $133^{\circ} 19' E.$ is a secure and spacious harbour with good anchorage in 11 to 7 fathoms, mud. Its entrance is to the westward of an island (Tosima), which appears isolated on

the chart, by the omission of a chain of islands extending eastward from it towards the headland. Reefs extend a mile off this headland, and also the wooded island (Tuft) lying South from it; and a flat isolated reef, 4 feet above water, lies S.b.W. 2 miles from Tuft island, and S.S.E. $\frac{1}{2}$ E. 2 $\frac{1}{2}$ miles from the west point of Tosima. Inside, shallow water extends off some of the points from 1 to 2 $\frac{1}{2}$ cables.

Susaki is also stated to be a fine harbour, but it was not examined.

Ura-no-utsi lies 9 miles East of Nomi; and is barred across the entrance by a sandbank. Some shelter may be obtained in S.W. winds, in 4 to 8 fathoms.

Kotsi Inlet, in lat. $33^{\circ} 30' N.$, long. $133^{\circ} 35' E.$; has a narrow and difficult entrance. Vessels of 15 feet draught may enter at springs. The outer anchorage in 7 fathoms sand cannot be recommended.

Goza Inlet, in lat. $34^{\circ} 17' N.$, long. $136^{\circ} 46' E.$, affords shelter from all but West winds, but has very uneven rocky bottom, and ledges off all the points. It is therefore recommended not to anchor farther up than abreast the first opening on the North, in 5 to 7 fathoms. The wooded headland at its entrance is omitted from the chart.

Rocks off Cape Sima.—Cape Xima or Sima is directly S.E. of Goza inlet. From time to time rocks have been reported off it, and are proved to be of the most dangerous character. Two low and small islands (called Osima), with clumps of large trees on them, stand a mile or two off the coast between Cape Sima and Goza entrance, from which long reefs were seen extending in all directions, and detached sunken rocks cropping up in various places. These generally break, owing to the constant swell caused by the strong tides off the cape. The outer rock which breaks is S.W. $\frac{1}{2}$ W. of Nami-kiri-saki, S.S.E. $\frac{1}{2}$ E. 5 miles from the wooded entrance head of Goza, and S.b.W. 2 miles from the outer Osima. Numerous tide rips occur outside the reefs.

Matoya Harbour lies 5 miles North of Cape Sima, and is open only to the East; half a mile within its entrance is anchorage in 7 fathoms, but beyond this the harbour has not been examined. A cluster of rocks is in the entrance, North of the South head, on which is a Japanese lighthouse.

Hamana.—The entrance of this large inlet was not discerned in passing along the coast, it was therefore concluded to be shallow. An entrance to a river was observed eastward of it, with a breaking bar extending some distance off shore. The water may be seen about here greatly discoloured.

Lady Inglis Rocks.—Omae-saki is a dark wooded bluff 150 feet high, terminating a very sandy shore with high beaches, backed by wooded hills. It may also be recognized by two remarkable white patches, only one of which is visible from East or West. Two miles E.b.S. of its South point are the Lady Inglis rocks separated by a 6 fathoms channel, reefs extending 2 cables from the shore. The Lady Inglis would be probably awash at high tides, but always visible. Except as to position, it answers exactly to the description given in the

China Pilot. It can scarcely be considered a danger. On the charts the coast one is erroneously drawn so as to include this rock with the point. The point may be passed at the distance of a mile in 12 fathoms, and shelter from S.W. winds obtained at the same distance to the northward of it, in 7 fathoms. The bottom is everywhere sand, with shells and stones. There is a lighthouse on the South bluff.

Portsmouth Breakers.—Soundings taken near the reputed position of these showed no indication of any shoal, but on approaching Omaesaki from the S.E.b.E., the depth, which was 71 fathoms at 12 miles distance, and 57 at 9 miles, increased to 129 at $7\frac{1}{2}$ miles, again decreasing to 40 at 5 miles; shelly bottom.

Yedo Bay.—The Yokohama bank, off the bluffs, carries very irregular soundings of 5 to 18 feet over gravel, opposite the Naval Hospital; vessels should therefore not anchor below the canal.

The bank south of Kawa-saki below Yedo extends half a mile eastward of its position as given in the chart; bottom fine black sand and stones.

Cape Nomo.—The mistaking of this cape near Nagasaki for the South point of Kabasima having led to the wreck of the *Satsuma* steamer, notice is given that a large ninepin rock lies 2 cables off the extremity of the cape, which is surrounded by small low detached rocks, most of which cover. Off Kabasima the rocks are compact and shelving, with a single outlying rock awash. There need, therefore, be no difficulty as to identity in the thickest weather.

WEIGHT OF WIRE ROPE.

Mr. Editor,—I send you a formula for calculating the weight of wire rope, that may be useful to your readers.

Let c = circumference,
 l = length of a fathom in inches,

Then $\frac{c^2 \times l}{90}$ = weight of a fathom in lbs.

Proof.

Weight per fathom by scales in lbs.	By formula.
2 inch..... 3 lbs.	3.2 lbs.
3 "..... 7 "	7.2 "
4 "..... 13 "	12.8 "
$4\frac{1}{2}$ "..... 17 "	16.2 "
5 "..... 21 "	20.0 "

N.B.—The slight differences observed here are often reversed by other manufacturers, as a little depends on the closeness of the lay.

MERCATOR.

To the Editor of the Nautical Magazine.

MANNING THE FLEET.

[This is so important a subject that we make room for Captain Dawson's plan, and which we preserve for the consideration of those of our readers whose opinions we have already recorded in our pages. The following appears in the *Hants Telegraph*.]

The problem of expanding the naval force from its peace establishment to meet the manifold requirements of a maritime war is one which has long employed the thoughts of statesmen and sea officers; yet to this day the problem remains unsolved, and very scanty means exist to meet the emergency. Our total reserves on paper do not exceed 27,000 seamen, of whom probably only 20,000 may be found really available when required, and this would not double the number of seamen now employed.

In the following attempt to investigate and solve the problem, the leading principle kept in view has been rather to follow up than to repeal recent regulations,—1st, by making our Continuous Service System the basis of a short pensioners' force, and the retardation or acceleration of the pensioning a means of effecting the expansion or reduction of the fluctuating peace establishment; and 2nd, by extending the operation of the Royal Naval Reserve to seamen less efficient as topmen, and increasing the number of years' connection with the Reserve, which shall entitle them to a retiring pension.

With a view to illustrate these principles certain round numbers are employed, rather to abbreviate language than as absolute and exact figures, though the nearest round number has, it is believed, been generally used.

1.—*Seamen required in War.*

At the close of our last maritime war in 1814—when no hostile flag fit to cope with our fleets had been carried at sea for at least nine years—the Royal Navy yet employed upwards of 147,000 men, all told. In any future struggle for national existence against two or more maritime nations a far larger naval force must be maintained. If it be assumed that 200,000 men, all told, will be required to meet the emergency, and that of these one-third should be provided for by marines and soldiers, and one-third by artificers, stokers, boys, and domestics, &c., then the remaining third should be *bonâ fide* seamen.

Though it is a question whether steps should not be taken to retain artificers and stokers in reserve, it is only to the provision of the latter third, the 66,000 seamen, that this paper addresses itself.

2.—*Seamen employed in Peace.*

Assuming that 20,000 in round numbers represent the establishment of petty officers and seamen employed in the Royal Navy during peace, there will remain at least 46,000 to be provided in case of war. But in any reserve which may be formed to furnish this supply large allowance must be made for those who are unable or unwilling to fulfil

their engagements; and the number to be furnished on paper may be taken as 60,000.

3.—*Short Service Pensioners' Force.*

The most invaluable body of reserves might be formed out of the navy itself, by discharging all seamen, not being first-class petty officers, at the expiration of their ten years' service, with a short-service pension, conditional on their serving in the mercantile marine for at least six months in each of the first ten years, and subject to an increase of pension if they so serve for a further term of ten years; and in case they should be liable to be called out at any period during the twenty years, or until fifty years of age. The first-class petty officers would go to fill up the coastguard when required, and might be also liable to be pensioned off into the short-pensioner force, if necessary for the reduction of the fleet.

To meet this overflow of ten years' men into the Mercantile Marine, a proportional increase of boys under training should be made; and if at any time a temporary increase of the fleet were required, a cessation of discharges would effect it.

Probably 2,000 annual additions to the short-service pensioners serving in the Mercantile Navy would thus be made; and, supposing one-half of these to secede or die before the expiration of their 20 years in the short-pensioner force, their numbers would eventually about equal those serving in the Royal Navy: that is to say, we might by these means obtain a reserve of 20,000 men-of-wars'-men serving in the Mercantile Marine.

4.—*The Royal Naval Reserve.*

To a reserve formed out of the 100,000 British petty-officers and able seamen, who, of all ages and various qualifications, serving in square-rigged ships, fore-and-afters, or steamers, constitute the British portion of our merchant seamen, we must look for at least 30,000 seamen; of these the Royal Naval Reserve now furnishes only 16,000. This force is certainly a splendid body of men, but it seems necessary to lower the standard of requirements on entry, if the numbers are to be doubled; as it is currently reported that seamen, possessing the present requirements, do not exist in the Mercantile Marine in the desired numbers. Such a relaxation of the requirements on entry, as would admit seamen serving in fore-and-aft vessels, would probably bring the force up to the 30,000 required.

It is alleged that the conditions as to the term of service are much too limited, and that the cost is excessive; but both these points seem capable of amendment, without sweeping away so valuable a reserve. It is suggested that the term of connection with the Royal Naval Reserve, entitling to a retiring pension, should be 20 years, of which the first ten should be conditional on, at least, six months' service afloat in each year.

When the pecuniary inducements to enter the Reserve appear to produce an excess of candidates for entry, then the cost per man might be reduced; but it must be remembered that if we are to enjoy an

immunity from conscription, and other forcible but simple methods of manning our fleet, we must expect to pay for our freedom in the form of highly-paid Volunteer forces.

6.—*The Reserves Called Out.*

Neither the short service pensioners nor the Royal Naval Reserve would be called out, except in anticipation of actual war. It would be advisable that their pensions should continue to be paid, in addition to their wages; and that a similar addition be temporarily made to all others serving in the Royal Navy. This would be a proper equivalent to meet the loss of prize money in war, and would secure the good humour and contentment of the fleet.

7.—*Recapitulation.*

Number of seamen employed in peace	20,000
Number of short service pensioners about 2,000 annually, for twenty years, or, allowing for a waste of one-half, about	20,000
Royal Naval Reserve, under the new conditions of qualifica- tion and twenty years' service for pension	30,000
Coastguard, &c., at present	9,000
	79,000
Total seamen	79,000

Thus we have 79,000 seamen on paper, which might be expected to yield fully 66,000 actual men when required.

Number of boys now entered annually	2,200
Number of additional boys to be annually entered to meet the discharge of ten years' men into the Short Service Pen- sioner Force	2,200
	4,400
Boys	4,400

The increase or decrease of the naval establishment during peace would be effected by regulating the overflow of ten years' men into the Mercantile Marine, instead of the Royal Navy being dependent on the state of the merchant shipping market for the supply of the least valuable members of that service.

WILLIAM DAWSON, *Commander, R.N.*

21st February, 1867.

THE LATE SIR WILLIAM SNOW HARRIS, F.R.S.

The important services rendered by the late Sir William Snow Harris to the Royal Navy (as well, indeed, to all other ships), whose plan for protecting them from the effects of lightning first appeared in this Journal, claim for his name that notice on our part which a long acquaintance with him would justify on other grounds. We, therefore, repeat the following memoir of him from the *Western Morning*

News, with those slight additions which our own knowledge enables us to make:—

Sir William Snow Harris, whose death last evening at his residence in Lockyer-street has deprived the upper circle of Plymouth society of one of its brightest ornaments, was not only a man of scientific attainments and practical industry, but also a man of genius; *i.e.*, of a versatile and originative aptitude that would have insured him a position in any profession, and success in almost any pursuit. Even towards art, he had some tendency, as shewn in his early use of the pencil; and there is sufficient evidence to the fluency of his pen in the lighter varieties of his prose and verse. For music he had an enthusiasm. To ordinary hearers he was a clever performer on the pianoforte and harp, and was of considerable service in assisting in the musical instruction of his children. In short, there was that general cleverness in Sir William Harris which would have enabled him rapidly to acquire all the leading accomplishments held in popular estimation. His conversational ability rendered him alike welcome among serious arguers or playful humourists; and he still retained in middle age a buoyancy of spirit and love for mirth which was simply additional proof that he was strong to do, and earnest in the doing, when other than mirth or play was required of him. His gravity was the very opposite of "oracular solemnity;" but nothing offended him more than ill-timed frivolity, unless it might be the inflated pretension which could not condescend to fun and frolic.

Sir William began his manhood's career as a militia surgeon, and subsequently practised the surgical and medical profession at Plymouth; but his curative skill was rather sought by trusting patients than exercised by him with any anxious desire for fame and emolument. The pursuit of electrical science soon became the great object of his mind. His papers on "The Elementary Laws of Electricity" attracted the attention of the Royal Society, which elected him a member in 1831.* In 1835 the Coply medal was awarded him; and in 1839 his "Inquiries concerning the Elementary Laws of Electricity," third series, was printed in the *Philosophical Transactions*, and obtained the prize as the "Bakerian Lecture."

In 1841, Sir William was awarded a pension of £300 a-year from the Civil List for his scientific acquirements, and in 1847 received the honour of knighthood. The Emperor of Russia in 1845 presented him with a vase in acknowledgment of his scientific services. He subsequently made valuable improvements in the construction of the compass, and was the sole inventor and patentee of the lightning conductors for iron ships. On the occasion of the Parliamentary grant of £5,000 to carry out that invention he was warmly complimented by Sir James Graham. His name will ever be popularly associated with the lightning conductor.

* His early papers on protecting ships from lightning commenced in the March number of this work for 1834, and the subject persistently reiterated against high official opinion until his method was adopted, and which is amply described in our pages.—Ed. *N.M.*

To lead from the way of doing harm, so fearful an enemy as the thunder cloud's discharge is indeed a triumph; and it must be understood that Sir William Harris accomplished this under circumstances of difficulty not met before he encountered them. Nor was the labour he had, in overcoming the fears of prejudice and ignorance, less than that of bringing before recipient intelligence the proofs of his justification; for there is, or was, an orthodoxy in science, almost as impedimental as that in religion to the progress of truth.

Sir William Harris resigned a profession by which he might have enriched himself had lucre been his leading object. Even ambition seemed to have no place in his heart; his passion was only to serve himself in the noblest way of self-service, viz., that of serving the cause and promoting the beneficial results of positive science; and it may reasonably be supposed that the maladies and functional deprivations that latterly afflicted him were at least aggravated by the mental efforts and anxieties which had been too tardily relieved. Sir William Harris was wholly careless of mere titular distinction, and would have been content with the substantial reward of substantial services to his country and its Government. Mr. Harris, as he then was, once called on the writer saying, "Have you not a collection of autographs, including that of Lord John Russell?" It was so. He looked at the latter, and then said, "No; it's no hoax: the writing in my note is identical with that in yours." He referred to Lord John's communication of the Queen's desire to knight him. Even then, he consulted his friends as to whether he should accept the honour. He at first suspected that the letter was a forgery.

Sir William was once a soldier (if a militia surgeon may be so called); but his appearance, as we knew him, was more that of a sailor. A naval man once observing a sailing-boat tacking about in the Sound exclaimed, "Egad, the fellow in that boat well knows what he's about." The "fellow" was William Snow Harris, F.R.S. He is still remembered by many in his sailor-like jacket, ample trowsers, and shoes,—the very ideal of that sort of man who, of all in the town, might leave his dignity to take care of itself, under whatever fashion it might appear. Many were his phases; but in one phase we believe he was never seen; he was never beheld on horseback; and it is doubtful if he ever danced—even a hornpipe. We may record the description of him given by the late Captain N. Lockyer, who said, "Harris is like a barrel organ; you may set him to *any* tune."

The memory of Sir William as a man of an extreme tenderness will long be cherished by those on whom, when he had ceased from ordinary medical practice, he still attended; he was friend, doctor, and nurse, as no one but he could have been. His latter sufferings and deprivations must have been severe indeed to one with a mind unimpaired; but they were borne as though the culture of physical science had involved that of moral philosophy, and as if the growth of pious resignation had accompanied the decay of temporal vitality. The departure of Sir William Harris from this life is that of one who has exercised the talents committed to him, and who otherwise lived as a

gentle and Christian-minded man. Sir William Harris was a native of Plymouth, having been born in that town in 1791; he married in 1824 the eldest daughter of Mr. Richard Thorne, of Pilton, North Devon; Lady Harris still lives to mourn her painful bereavement, having with tender care watched the break up of her husband's health, which resulted in his death.

THE "MARY JANE'S" FORECASTLE.—*A Seaman's Experiences.*

The subject of this extract bears so well on the remarks we have made on the Forecastles of Merchant Ships, that we quote it from the *Argosy*.

The *Mary Jane's* fo'castle was as good a one as I ever served in, except in those new clipper-ships that have Yankee deck-houses amidships, which are something like Christian places to live in. It wasn't one of those bathing machines, called topgallant fo'castles, which are in the bows of the ship upon the upper deck, with two large hawse holes for the cables and salt water to run through, giving you all the benefits of a shower-bath without getting out of bed.

The *Mary Jane's* fo'castle was a triangular little space below deck in the eyes of the ship, without any bulls-eyes or ventilators, which got all its air from the hold, required a cat's eyes to pierce the darkness, and could not be scrubbed out, lest it should never dry again. There were eighteen men and boys to use it, though there wasn't clear deck-room for them all to stand in it; yet there were no tables, stools, or other furniture in the way, except the sleeping-bunks in tiers and our clothes boxes. When all came down into it at the same time, some crouched into the bunks, others sat on the boxes, and the rest squatted on the ground with tarpaulin coats under them; for it was as damp and as dark as the grave. When the booby-hatch was drawn over in a breeze or rain, the smell might have been figuratively cut with a knife; and between the steam from our wet beds, wet clothes, and wet deck, and the drippings through the ceiling as the caulking worked out, it was a wonder we didn't all get rheumatism; but they say that salt water doesn't hurt, and we are pretty well used to that sort of thing. I often wished myself a piece of the dry-goods we carried, as the caulking wouldn't have been allowed to work out, and I should have had a dry place to rest in during my watch below. When I made a voyage in a transport, I envied the horses their dry quarters; for when some water did work through, the officer kicked up such a row, that tarpaulins were spread under the deck until the carpenter had mended the caulking. Of course convicts have the best and driest of quarters on shipboard; but that they have everywhere.

The salt-water cure is bad enough, but the fo'castle smells kill me outright. The *Mary Jane's* fo'castle bulkhead wasn't air-tight; neither, for that matter, is any other ship's I know of. We could see through into the hold, and the only way of escape for the foul air from

the cargo to the upper deck was through the fo'castle. Our cargo smell wouldn't have been bad in the open air; but when confined in a close little den, with human bodies and cooked food and dirty clothes that are seldom washed, a general West Indian cargo doesn't give out a wholesome atmosphere. Molasses and brown sugar give out an offensive smell like sewerage, which turns white paint lead colour in a night, and gilt buttons quite black. Ships that carry soldiers are forbidden to carry this cargo, so you may imagine what it was in our little airless fo'castle; why, our very skins were blackened, and it was useless to wash ourselves. Our bilges, too, stank awfully, and when we were all closed up in a breeze and the bilge-water rolled about, it was like living in allotment cabbage-gardens surrounded with little piggeries. The worst smell, though, came from the drinking-water, which was stowed in wooden casks instead of iron tanks, and placed right against the open seams of our fo'castle bulkhead. After we had been five or six weeks at sea, the water smelt quite putrid.

We smoked our pipes as we lay in our bunks to keep away the smells, but they got the better of us when we fell asleep, and then we awoke with a dreadful oppression on the chest, a dryness in the breath, and a restlessness all over. That sort of atmosphere cannot be healthy for long, and that's the reason I think it was that little squeezed-up black hole which made us so lazy and cross, and so discontented and ill-humoured. The only things which kept us lively were the centipedes, and other insects, which came out from the cargo. They're not very pleasant messmates, but they're better than the snakes and scorpions which come out of some cargoes. Indeed, our cargo was far better than many others we might have had,—such as guano, which must be a terrible thing to live with for four or five months. But if the bulkheads abaft for the officers and the passengers are perfectly air-tight, I don't see why ours shouldn't be made tight too.

PORTSMOUTH BAR.

Paignton, February 4th, 1867.

Sir,—I must ask you to insert a few lines in your next number, in order to correct an inaccuracy which by some accident has crept into the chart which accompanies my letter on the subject of the recently discovered "Knolls" in the Portsmouth Harbour Channel.

By the Lithograph Plan it would appear that the depths over the shoals at low water were respectively 18 and 19 feet; whereas by my Tracing it will be seen that, in accordance with the Admiralty Notice, I stated that there was 18 feet water over the North knoll and 22 feet over the South one, with a chequered black and white buoy on the western edge of the southern shoal laid down in 19 feet water.

In the note appended to my letter, I have been misunderstood to say that the buoy had better be on one side or other of it (I suppose the Channel); instead of which, in my opinion, *the buoy need not have been laid down at all*, being much in the way of steamers by night,

and sailing vessels working in and out either by day or night. It appears to me a transit mark at Southsea Castle would have answered every purpose.

The above explanations may appear unnecessary to the general reader; but on a subject of so much importance, I am unwilling that any inaccuracy could justly be attributed to anything said or written by

Your obedient servant,

W. L. SHERINGHAM, *Rear-Admiral.*

To the Editor of the Nautical Magazine.

THE GREAT EASTERN.

The *Great Eastern*, which had been for several weeks beached on a gridiron above New Ferry, on the Cheshire side of the Mersey, was safely removed to her moorings in the Sloyne. While on the gridiron the big ship underwent a complete overhaul so far as the external part of the hull is concerned. Her bottom has been thoroughly cleaned, and her plate lines were as clear and as distinct as the day she left the stocks at Millwall. The deck-houses, fore and aft, are almost completed, and the internal decorations are so far accomplished as to leave little doubt but that the vessel will leave the Mersey for New York on the appointed date, the 20th of March.

We believe the above paragraph to be the only one worthy of confidence regarding the state of the *Great Eastern*. Since reading it, we have received the following:—

“It is said that the M’Innes’ *sulphate of copper* composition was shovelled off with the shelly mass adhering to it from 4 to 9 inches thick, leaving the under coatings of red lead generally intact. There were, I learn, tight coats of red lead over the iron bottom before M’Innes’ was put on, and under the red lead the plates and rivets were *perfect*, but where the red lead had been chafed off, there corrosion had set in and rivets had to be removed. The quantity of mussels, &c., removed has been variously estimated at from 100 to 150 tons weight!—‘*very clean*,’ certainly! However, I hear that, it having been *arranged* with the party who undertook the contract to scrape and repaint to use M’Innes’ again before the bottom was seen, it is again being put on, but *over* several coats of bright varnish and iron ore mixed very thick, so as to form a barrier between the copper composition and the plates and rivets.

“I was at Portsmouth Dockyard last week, and witnessed the examination, after two years, of an experimental plate done with a preparation of mercury direct on the iron; the iron was completely destroyed, besides being covered with a dense coat of all manner of parasitical crustaceæ and algæ several inches thick; so that I hope shortly the attention of the Admiralty will be drawn to the folly of using preparations of copper and mercury, which sooner or later will tell a tale on our *iron fleet!*”

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

APRIL, 1867.

OUR MERCHANT SEAMEN.—*Certificates for Long and Short Voyages.*

While there are thousands of well-educated officers in the British Merchant Service who are an honour to the profession, yet the fact cannot be denied that a large number of our masters and mates are little better than able seamen as regards intelligence and education. As was shown in the March number of this magazine, the qualifications demanded of candidates for certificates of competency for the inferior grades are so very low, that any seaman possessing the merest rudiments of nautical knowledge may pass the examinations. In consequence of this state of things the supply of officers far exceeds the demand, and we have a large number of passed masters and mates in want of employment, who offer their services at low rates and prevent abler men from obtaining situations, which their superior attainments enable them to fill with credit. Were the inferior grades of officers restricted to the smaller class of vessels trading in the Atlantic and the narrow seas, and were the larger class of vessels trading to the East of the Cape of Good Hope and to the West of the Horn, commanded and officered exclusively by men holding first mates' and extra masters' certificates, the service would improve in every respect, for good officers almost invariably make good crews. There are many experienced shipmasters who hold only certificates of service: these remarks are not intended to apply to them, but to the younger members of the profession.

According to the present state of the law, an only mate may be appointed to a ship of the largest size trading to India or China, and, as the name of the grade indicates, a second mate cannot be carried in

the same ship; so that the shipowner gets an inferior officer, who is not qualified to succeed the master in the event of illness or death, and the second mate is compelled to serve *nominally* as boatswain, although *actually* performing second mate's duties. This is not doing justice to the second mate, inasmuch as his name must be on the ship's articles for twelve months as second mate before he can go up to pass as first mate, and his service as boatswain counts for nothing.

The great increase of iron and composite ships, and the difficulties arising from the attraction of iron on the compasses, render it imperative that commanders of these ships should have a special knowledge of magnetism. As long ago as the year 1855 Dr. Scoresby urged the necessity of this, and iron ships have increased largely since that time.

Besides his nautical education, a shipmaster making long voyages ought to have some knowledge of the best means of preserving the health of his crew. It rarely happens that cases of scurvy occur on board of *well-found* ships commanded by intelligent men, but generally on board of ships where cleanliness and ventilation are neglected and bad provisions are served out. There is, however, one cause of scurvy and ill health on board ship, to which Mr. Leach and others who have written on the subject have not attached due weight,—that is, a loathsome disease contracted by the men while in port. A considerable proportion of the scurvy cases which are sent to the hospitals are induced by this disease. At the beginning of almost every voyage there are a number of the men unfit for duty through their own folly and thoughtlessness while in port. A great deal has been done lately to improve our seamen, while our officers have been somewhat neglected. A writer in this magazine observes that "a seaman's home is his ship." Home influences are always most powerful either for good or evil, and any attempts to improve the seaman without improving the officer can hardly succeed.

AN OLD SAILOR.

SHOOTING STARS AND THE WEATHER.

A connection between the phenomena of Shooting Stars and the Weather has been sought for by meteorologists, but with small success. The remarkable phenomena of the month of November would go far towards setting such an opinion aside, when it is considered that it is only on two or three successive anniversaries of that period that they are seen in extraordinary numbers. And on these occasions they are of course beyond our atmosphere; although in the Earth's path, they probably become ignited by it as our planet pursues her course.

We here preserve the last of these observations made at Honolulu (Sandwich Islands) as they are recorded in the weekly periodical of that place. It will be seen that they were quite as numerous there as

at other places where they have been observed. The meteor spoken of by Mr. Monroe seems to be the largest of its kind we have yet any account of.

In conjunction with this notice we have pressed into our pages from the *Athenæum* some very interesting observations on the subject of meteors, which would appear to be connected more nearly with our earth than the foregoing. And after considering the conclusions at which the authors have arrived, we have appended to them a few observations which they have suggested.

We now give the Sandwich Island observations.

Considerable interest was excited by the unusual display of meteors on the night of the 13th of November. The teachers and pupils of Punahou College made special arrangements for the occasion, and the result was very satisfactory. Mr. Robert Andrews furnishes the following list:—

Hours.	Number of Meteors.	Weather.
10 to 11 . . .	22 . . .	Sky clear.
11 to 12 . . .	44 . . .	Cloudy in N.E.
12 to 1 . . .	47 . . .	Sky partly cloudy.
1 to 2 . . .	63 . . .	Clear.
2 to 3 . . .	141 . . .	Clear.

In all 317 meteors were recorded, most of them very small and ordinary, but a few were really beautiful. Two resembled rockets very closely, one exploding in the South over the sea, and the other one West from the college, apparently directly over the harbour. Quite a number left trails like comets. At one time, for a few moments, the sky was literally filled with shooting stars, which made it nearly as light as day. After 3h. a.m. no record was kept, though occasional meteors were seen till daylight. The greatest number were observed from the Eastern point of the compass to the South-west, and very few to the North.

While on the subject of meteors, we may here append a notice of one which fell in September last, near Austin, in Arizona. It occurred about 9h. p.m., and the whole country was lighted up by it for miles around:—

On the instant the light became brilliant and intense, and an immense body, glowing with incandescent heat, moved rapidly through the atmosphere in a southerly direction. Monroe describes it as the grandest spectacle he ever witnessed. As the meteor disappeared, the light gradually paled, and soon faded altogether, leaving only the starlight. In from ten to twenty seconds after the disappearance of the body, the now thoroughly awakened party heard a quick succession of thundering sounds from the southward, resembling vast masses of hurling rocks, which reverberated through the mountains for several seconds. It was undoubtedly an enormous meteor, which had fallen and crushed the summit of a mountain not very far distant from the camp of the party. Mr. Monroe represents the vast body as without any particular shape, and as "large as a church." Even now, in his cooler moments, he

insists that it was as "large as a small house." Meteors are composed generally of masses of stone and native iron; and Dana says, the most remarkable masses of meteoric iron occur in South America, where there is one whose weight is estimated at 30,000 lbs.

February 18th, 1867.

In the *Athenæum* of February 16th, page 219, I find the following remarks:—"While meteors and shooting stars were supposed to be produced by exhalations of sulphur and so forth, it was impossible to disconnect them from atmospheric perturbations. Hence, till a very short time ago, during their apparition, barometers and thermometers were read with as much assiduity as they were by that French prefect whose town was visited by a celestial messenger in the shape of a *leg of mutton* (which it was afterwards known had fallen from Nadar's balloon). If a hurricane will occur on the 10th of August or the 14th of November, we may always prognosticate a running accompaniment of shooting stars; but to reverse this would be as absurd as it is contrary to the facts."

This reasoning is perfectly correct, but it leads to an inference which may be erroneous, if there be any truth in the theory apparently established by M. Coulvier Gravier on the subject; and therefore it may be expedient to lay before the readers of the *Athenæum* a short account of this observer's method of interpreting the appearances and motions of the celestial visitants. The subject is very old; more than two thousand years ago the poet Aratus struck out the theory, for, speaking of shooting stars, he says—

And in the murky night, when stars rush down
Frequent, and leave their flaming tracks behind,
Know, by their course, whence coming wind shall blow.

M. Coulvier Gravier, who has devoted his whole life to the study of falling stars, has come to the conclusion that they are infallible prognostics of the weather—if we only interpret them according to the maxims which he has established by patient observation. I should state that the French Government has furnished this eminent meteorologist with an observatory in the Luxembourg Palace, for the investigation of this his peculiar "specialité." Falling stars (political and dynastic) have been proverbial in France, especially in modern times; and so, perhaps, we should not wonder at the Governmental interest taken in the analogous investigation. Alluding to the popular superstition as to falling stars being an omen of the death of some great personage, the poet Béranger said beautifully—

Encore une étoile qui file,
Qui file, file et disparaît!

Coulvier Gravier has classed falling stars in nine magnitudes, all of them visible to the naked eye. Their apparent size, which is very variable, often depends on the state of the atmospheric strata interposed between them and the earth. Their trains, also, are variously composed, according to the direction of the heavens where they appear.

The variable duration of the apparition of the meteors presents interesting circumstances, and such as may facilitate the discovery of the laws which rule them. Their trajectories, or paths along the sky, are sometimes rectilinear, sometimes curvilinear, and serpentine. They have various aspects: they are sometimes *watery*, sometimes nebulous or cloudy, sometimes *globate*—all which appearances have a very characteristic meteorological significance. "The upshot of all this," says M. Coulvier Gravier, "is, that we have in the skies, marked in traces of fire, the proper indices or signs whereby to know beforehand all meteorological effects."

1. There are meteors which do not run through many degrees of the firmament, or even do not move at all. These are M. Gravier's "*wet meteors*;" they are signs of rain, more or less copious. It is the humidity of the air that opposes their combustion; and a great number of them is always a sure sign of rain. This is reasonable enough: a great degree of humidity in the air is the precursor of rain.

2. Shooting stars are generally white; when they are coloured or globular they indicate winds more or less violent: the colours result from the nature of the atmospheric stratum in which they circulate.

3. M. Gravier deduces important conclusions from the direction of the flight of meteors. In cold years, the general resultant of their flight, although in the morning as near as possible to West, is acted upon, during the night, by a force situated in the North, which sometimes makes it approach very near that region; then it descends again, mounts, and again descends. When this is the case, and especially when the disturbing force progresses nearly always in the same direction, the years in which this coincidence occurs must be generally cold. In years in which the resultant of the motion of the meteors chiefly affects the region E.S.E. and S., the weather must be very hot, and it will always be so if the disturbing force more frequently oscillates from S. to E.N.E. in passing through E.S.E. If the oscillation be from W. to S.S.E., passing through S.W., the period will be very stormy and rainy.

4. The velocity of the meteors furnishes valuable signs. If they are very slow, this shows there is a great calm in the upper regions of the atmosphere, and this calm will be extended to the surface of the earth. If, then, at the moment of observation the lower regions of the air be calm, the calm will continue; if not, then calm will soon ensue. The contrary takes place when the meteors have an excessive velocity. The upper regions being very much agitated, the lower regions must soon become so; and therefore, if at the moment of observation the air be calm, we may be sure that there will be soon an end of it.

5. In all this it is evident that the meteors are patients, not agents, in atmospheric phenomena. Perturbation is the most important phenomenon in meteorology, and it seems to be so in the career of the shooting stars. Otherwise, according to our author, the mere determination of the resultant of meteors would suffice to indicate with certainty all the fluctuations of the atmosphere. But this is not the

case, as for instance—The force, or rather the air-currents, which set in motion these meteors, may be from the *South*. If there were no obstacle, the meteors would always take this direction of the atmospheric layers. But during an observation we may witness the following results: a meteor starts from the *South*, and, after running a few degrees, suddenly returns, and proceeds just as though it came from the *North*; another comes from *S.E.*, and, after running some degrees, ends as though it came from *N.E.*

This state of things shows the resistance of a greater force in the *North* tending towards the *South*; and, on the *third or fourth day after*, the clouds and the wind will correspond with the northern direction, as indicated by the return of the meteors. Take another example. Suppose for some time the resultant of the meteoric directions be *N.E.*, with fine weather and very high barometer. Suddenly a meteor starts from *N.N.E.* This meteor, instead of describing a regular trajectory, vacillates and serpentines in its course. A second meteor, coming from *N.*, ends as though coming from *S.W.* A third, coming from *E.*, ends as though coming from *S.W.* If the reader will draw a rough sketch of the paths described on a sheet of paper, divided into the quadrants by lines headed *N.*, *S.*, *E.*, *W.*, he will probably recognize what he may have observed in the skies with regard to the flights of meteors.

Now, in this case, the meteor which has *serpented* in its course, and the others ending in *S.W.*, show that the disturbing force is, at the moment, between *S.* and *S.W.* The barometer, *thirty-six hours* after the apparition of these signs, will begin to fall very slowly, and when, on the *third or fourth day*, the barometer shall have reached its maximum fall of about three-tenths, there will be rain. The clouds and the wind will then be in that part of the heavens indicated beforehand by the disturbing force—that is, between *S.* and *S.W.*

These examples may suffice to give some idea of the connection between shooting stars and the weather. Their path is obstructed by a current which is stronger than the force which impels them, and the former will, sooner or later, be felt on the earth beneath. Every one must have frequently seen such gyrations; and if Gravier's explanation be not the right one, it is difficult to imagine a better. It must be caused by the resistance and reaction of a stratum of atmosphere having a greater density or a greater velocity, or both together.

One of M. Gravier's most important conclusions is that by which it seems that we may know beforehand the general aspect of the entire year's weather. His axiom is as follows: "The resultant of the meteoric phenomena of the first four months of the year is the same as that of the entire year." Thus, if the resultant obtained by means of observations from *January* to *May* approach the *North*, then the year will be *dry and cold*; if it approach the *South and South-west*, then the year will be *wet*, in accordance with the above explanation.

Whenever the resultants of the meteoric flights are not altered by perturbations, they will be followed by results corresponding with their directions. The cause of all meteoric effects is in the higher regions

of the atmosphere. Consequently, it is only by an attentive and persevering examination of those regions, by the study of such phenomena, that we shall be able to enlarge and improve the discoveries already made in meteorology.

I may remark, that M. Gravier is supported by another observer in the important meteorological supposition that changes of weather originate, in general, in the higher regions of the atmosphere, and thence descend to the surface of the earth. M. A. Poey, of Havannah, in a recent paper "On the Azimuthal Rotation of Clouds," maintains that the winds ordinarily begin to blow at the altitude of the clouds before they agitate the surface.

With respect to the great meteoric display of November 14th, 1833, it is on record that very bad weather followed; and certainly the wind and weather following the meteoric shower of last November was quite in accordance with M. Gravier's theory. Two days after, on the 16th, a furious gale from the northward and eastward swept the eastern coasts, followed by reactionary gales from the southward and westward on the southern coasts, with copious rainfall and disastrous floods in various parts of the country.

The observation of shooting stars would be a valuable aid in prognosticating the weather. Scarcely a night passes without such phenomena taking place; unfortunately clear nights are too rare in our climate to admit of the regular observation of these "signs in the firmament."

I may take this opportunity for answering two questions asked in the article to which I refer. First, as to the reason why "flat-bottomed clouds" show fine weather. The clouds alluded to are the *cumulus* variety, and the shape mentioned is the result of the strong horizontal current of air which is brushing *beneath them* (thus flattening their bottoms), whilst wafting them from the places where they were formed to others where they are to be dissolved or be deposited in rain. Of course as long as they have that appearance they are going away, and therefore the weather will remain fine.

With respect to "a mackerel sky," I may state that it is *not* a sign of fair weather, but the reverse:—

Mackerels' scales and mares' tails
Make lofty ships carry low sails.

The foul weather consequent results from the accumulation in denser masses of the clouds which make it, namely, the *cirrus*, or *icy cloud*, forming the *cirro-stratus*, which is Howard's name for the *mackerels' scales*. Condensation of vapour must be the result of the lowering of temperature; hence the storm of wind and rain that follows, with electric manifestations connected with the same perturbation of temperature caused by the prevalence of the *icy cloud*.

Mr. Harrison's discovery (alluded to in the article) of the *higher temperature* always prevailing in the first half of every lunation, seems to be attributable to the prevalence of the *warmer winds* during that period. Mr. C. Fullbrook has sent me the result of an examination

of the winds through one revolution of the point of apogee, which occupies 8 years and 10 months, comprising 118 courses, and it appears that the maximum of S.W. wind on the eighth day after new moon is 9 per cent.; of W. wind at the full, 6 per cent.; of N.W. wind, fourth day after full, 6 per cent.; of N. wind, four days before, and three days after new moon, $4\frac{1}{2}$ per cent.; of N.E. wind, ninth day after full, $6\frac{1}{2}$ per cent.; of E. wind, same time, $4\frac{1}{2}$ per cent. But, indeed, Horsburgh (*Sailing Directory*) gives the old sailor's experience,—namely, that “changes of the moon, in most parts of the globe, are more likely to be accompanied by stormy weather than the full; and blowing weather prevails more in dark nights than when much of the moon's disc is illuminated;” and it appears from Mr. Fullbrook's results, that 12 or 13 per cent. of all winds are due to the moon's varying distance. Assuredly, the whole doctrine of periodic phenomena is very little understood, and yet it is “the part of Hamlet” in the play of the elements.

ANDREW STEINMETZ.

Prestwich, February 25th, 1867.

In your number for February 23rd we are indebted to Mr. Steinmetz for a *résumé* of conclusions arrived at by M. Coulvier Gravier, of Paris, regarding the importance of shooting stars as indices in prognostication of the weather. After the great and real progress achieved during the last few years in meteoric astronomy, it is hardly credible that M. Coulvier Gravier should continue to adopt the views he formerly entertained, and ride his hobby so blindly.

I shall here endeavour briefly to give some fundamental reasons against the probability, or rather possibility, that shooting stars can afford those signs and indications pointed out by M. Gravier.

1. It does not clearly appear, at least in Mr. Steinmetz's *résumé*, what are M. Gravier's real views as to the nature and origin of the meteors themselves, whether they are purely atmospheric,—*i. e.* gaseous or electrical emanations, or cosmical; in either case, to a certain extent, they might be affected by the atmosphere, and so afford, to some extent, indications of its actual condition at the moment; certainly the apparent brightness, size and degree of twinkling of the fixed stars often vary, according to the amount of moisture in the air. It would, however, appear most probable that M. Gravier considers, not only that shooting stars and meteors, in their motions and appearances, are valuable as indices towards a correct forecasting of the weather, but that they are themselves also entirely of atmospheric origin. Howsoever or wheresoever they originally spring, it would, at all events, appear that M. Gravier considers they are more or less at the mercy of drifting atmospheric currents, whose existence and direction the very meteors themselves indicate or prove by their own movements and directions.

2. Now, if there is one thing more than another which has been satisfactorily ascertained by proper scientific observation and calculation, it is that the *visibility* of shooting stars is all but limited to an altitude of from forty to ninety miles, and that they have an initial or

proper *velocity* of some twenty to forty miles a second. These two facts appear to be ignored by M. Coulvier Gravier; else, if admitted, his meteors would indeed become, as perhaps he considers they are, veritable *ignes fatui*. Is it likely that the atmosphere at a height of sixty miles can exhibit the requisite air-currents, drifting about with a velocity of some thirty miles per second? On the contrary, the opinion is gaining ground that at that height there is probably a nearly stable atmosphere, having a tension peculiar to itself, and of the utmost possible tenuity.

3. Another matter, also apparently overlooked by M. Gravier, is, that these meteors are themselves not only of cosmical origin, but consist of solid (probably stony) matter. The recent observations and discoveries of Mr. A. S. Herschel and Mr. Browning prove that at least they consist of solid matter in an incandescent state, the metal sodium having certainly been detected as one ingredient. The *colour*, then, of meteors—a point of much importance with M. Gravier—becomes, as one might suppose, chiefly dependent on the nature or number of the chemical substances exposed to fusion during meteoric incandescence. Optically there often also appears to exist among observers considerable difference of colour for one and the same meteor, especially in the larger one, seen over a distance of one or two hundred miles, and it may not always be desirable to lay too much stress on this point.

Now, if we admit, as we believe we have abundant proof, that shooting stars are of cosmical origin, and consist of smaller or larger stony fragments, often no larger than a hazel-nut, and that the great majority (probably 90 per cent. at least, as Professor Heis, Mr. A. S. Herschel and myself have, I believe, succeeded in showing) of shooting stars seen in northern latitudes between 6h. p.m. and midnight belong to a limited number (about fifty) of fixed and independent rings or groups of meteors, moving in regular orbits round our sun, having known radiant points, and recurring at the same date with considerable regularity every year, it will follow that many of the atmospheric phenomena attending the occurrence of meteors, claimed by M. Coulvier Gravier as important indices in forecasting the weather, are really, if indices at all, very fallacious ones.

4. M. Coulvier Gravier considers of much importance also the *trajectories* and directions of meteors. Meteors with short paths or stationary indicate rain or moisture; the fact really being, that meteors with short paths are simply perceived foreshortened by M. Gravier at his observatory at Paris, whereas at Rouen or Lyons the same identical meteor might present a path of 20° or 30° . But it is evident that M. Gravier quite ignores the real velocities, real heights and distances of his meteors, and only considers their *apparent* positions and velocities with respect to himself as observer. He consequently lays far too much stress at the very outset on the directions and positions of meteors, whether they be seen, say, in the northern or eastern skies; the *real* position and path of any shooting star can only (except perhaps in cases where the meteor crosses the zenith of the observer) be ascertained, as

a result of the combined observations of two or more observers at considerable distances apart; and half-a-dozen shooting stars might be seen by M. Gravier at Paris in the southern sky, going *apparently* East to West (from which, of course, he would deduce certain weather-wise conclusions), while the same meteors would necessarily be seen by an observer at Lyons in the northern sky, moving perhaps N.E. to S.W., or even S.E. to N.W. When seen against the celestial vault, and much foreshortened, it is not always possible to decide whether a meteor is coming towards or from the observer, *e. g.* whether moving in a South or North direction. How, then, it is possible to combine meteor-direction with a certain state of the barometer is marvellous, especially when the real path of the meteor itself is doubtful or unknown.

5. The *velocity* of meteors is another important item among M. Coulvier Gravier's indications; but even the *apparent* velocity of meteors must depend upon several conditions, *e. g.* their distance, the amount of foreshortening, and on their initial or cosmical velocity, as well as direction compared with the earth in her orbit. But it does not appear that any of these matters are considered in M. Gravier's philosophy—(see section 7).

6. Then, as to the motions or *trajectories*; some are serpentine, some zigzag, or even retrograde, as compared with their original course; the latter are of such extremely rare occurrence as to be of no practical importance, and under no theory of very easy explanation; but it is easy to understand, I think, how a meteor may, in the course of its path, present or obtain an oscillating or even curved trajectory, if we admit that its nucleus consists of solid matter, with a very irregular shape, offering facilities for *unequal* superficial combustion and atmospheric resistance. M. Gravier's explanation, of course, would be that there are layers or strata of air of different densities moving in different directions.

7. It appears, from very recent investigations, that the earth is throughout the year, and at all points of her orbit, passing through at least four or five (but probably, in reality, at least double that number) meteoric rings or groups (somewhat analogous to those of the 10th of August and the 14th of November, but not so dense or narrow). Now each meteor-ring furnishes a regular radiant point, and we may witness (where the observations are properly recorded) at one time several or even a number of these radiants, representing, doubtless, so many distinct rings or groups of meteors. Now the *number* of meteors (also an important element, I believe, in M. Gravier's system of observation), whether *horary* or *monthly*, will depend greatly on the position of the radiant point at the time of observation; the nearer the radiant is to the observer's zenith, the more favourable the time for seeing *maximum* numbers; and secondly, on the number of meteor-rings that the earth at the time is passing through, and the degree of richness of those rings in individual meteors. The meteor-rings undoubtedly vary in their average richness, and not only so, there are doubtless epochs of *maxima* and *minima* for each ring. The time

taken by the earth to pass through these different rings or zones of meteors may also vary from two days to two months. On the whole, the number of meteors seen on any one night, taken, say, at random, with another for the same hour, does not vary greatly, leaving out a few of the most remarkable or special showers; there is, however, a general tendency for the numbers seen on any given night to increase from before midnight until 4h. or 5h. a.m.; and this has been explained by Mr. Bompas (see *Brit. Assoc. Reports for Dublin*, p. 144), on the supposition, however, that meteors are equally distributed in space; as also why we should expect to see more meteors in the eastern than in any other quarter of the sky; but I am not quite sure if this is really the case, though stated by M. Gravier to be a fact. It may also be remarked that the velocity of the meteors of different or distinct rings or groups must necessarily more or less vary. I have certainly noticed that most of the meteors seen in March move decidedly slow; and meteors coming from the same radiant point will every year present more or less similar appearances, whether as to trains, colour, or velocity. This regularity is opposed to such indications as are required to meet the notorious and almost fanciful variations in the weather, or to sustain M. Gravier's theories.

8. If, however, our weather in England and France is constantly changing, as we know too well it does, we should certainly expect, on M. Gravier's own showing, that meteors with curved, serpentine, and crooked paths would be of far more frequent occurrence than they are; and what would become of his theory and meteoric signs and indications in a country like that of Egypt, where for weeks and months there is often no change in the weather? and yet in such a climate meteors present precisely the same appearances that they do in some climates. Such remarkable showers as those of the 14th of November, 1799, 1833, and 1866, were seen over half the globe, and, no doubt, under every condition of weather. How does M. Coulvier Gravier explain this? And, before concluding, I may just allude to Mr. Steinmetz's own observation (confirmatory of M. Coulvier Gravier?) as to the bad weather which followed the appearance of the late remarkable display last November, and state that, to the best of my recollection, the weather in Lancashire was equally bad previously.

R. P. GREY.

In reference, first, to meteors and their effects. Let us take their position: are they without the earth's atmosphere?—those of November and August evidently are. Then, are they cosmical, or not?—some we know to be so, and it would not be very violent to assume that all are. Are they in a state of ignition before being encountered by our atmosphere?—this is of little consequence, as they evidently would be so afterwards. Then it follows that whatever effect they may have can only be on these occasions; and the question is, whether they produce those effects stated on our weather afterwards? The answers are both ways; and certainly that in the affirmative to a partial degree appears likely. We have recorded in this journal instances of their

fall in an ignited condition;—one in particular we remember at the Cape.

In reference to the moon's effect on the weather, we do not believe that she has any whatever, excepting through the influence of the tides. When the moon's influence is in accordance with that of the sun, as at new and full, we have then her greatest effects on the tides, which at her quarters are comparatively but little. And that the stream of the tide influences the weather every sailor knows. The waterman along the coasts of this country will occasionally look for "more dirt" on the flood, as naturally resulting from his own observations. A change of weather even, from a long prevalence of one kind, will be foretold to come with the next springs; and the next springs in most cases bring it; not the moon, but the springs, which are mainly produced by the moon. Not but that the tides are always, as the sailor says, either "taking up," or "going off," i.e. getting "neaped;"—the first as the moon approaches her full or change, and the last as she recedes from those conditions.

There are no doubt also occasions on which even the springs do not affect a continued series of weather; and this is, perhaps, mostly the case with us when our wind is East, as at the present full moon, defying the approach of the Westerly wind, although it cannot affect much the more material nature of the tide. Still, in our opinion, the moon has nothing to do with weather.

COLLISIONS OF STEAM VESSELS,—*Arrangement of Lights.*

Forest Gate, Essex, March 7th, 1867.

Sir,—The subject of Collisions by Steamers and their causes have of late been so frequently placed before the public, showing their terrible results, that I am therefore induced to ask you to publish my plan for the preventing them, in order to court the opinion of those of your readers who, of all others, must be considered the most competent to give one on a subject of such vital importance.

The question as to the best position for lights to be placed in ocean or river steamers is not new to me, my opinion on this subject being already recorded in one of the Singapore papers in the year 1851, shortly after the collision of the steamers *Erin* and *Pacha*, belonging to the Peninsular and Oriental Steam Navigation Company, and which resulted in the loss of the latter vessel. It also appeared in *Mitchell's Maritime Register* in Oct. 1859, since which time I have had ample opportunity for carefully examining the subject in all its various bearings, and from every conceivable point of view which a long practical experience could suggest. I can only arrive, however, at the conclusion, that the side lights as now placed must and will always tend to disastrous results; for I question if it is possible to instantaneously and definitely know the relative positions of two steam vessels on

seeing one of each other's lights, when the hull is not discernible from the effects of a cloudy atmosphere or other influences; *and it is on this one point that hangs all the mystery which shrouds the causes of collisions.*

It may be urged that the rule of the road, by which all commanders of British steamships are supposed to be governed, points to a remedy, viz., the necessity for porting the helm. That there should be some well-defined rule on this very important subject I readily concede; but is the existing rule applicable to all the relative positions in which two (or more) steam vessels may be placed? **ASSUREDLY NOT**; and I have reason to believe that it often hastens a collision, and places lives in jeopardy, which otherwise might have been avoided. There are so many positions of difficulty in which a commander of a steamer must of necessity be placed from the deterrent nature of the existing rules, and which in themselves are very imperfect (because they are so indefinite on extreme points), that he (the commander) cannot be considered as being free to act in cases of emergency, without the probability of subjecting his conduct to an inquiry instituted by the Board of Trade, attended with the possible suspension of his certificate, whereby this burthen becomes all but oppressive. It is therefore with the view to lessen, if not entirely remove, the causes of collision between steamers, that I now submit my plan, which is as follows.

I propose to displace the existing side lights (green and red) from their present position, and place them forward both before the foremast, in a direct fore and aft line with the keel; the red light to be the foremost one of the two (shaded on the after part only), and fixed at an elevation of from 8 to 14 feet above the level of the fore-castle deck, according to whether the steamer has a bowsprit or not; the after or green light to be placed at least 20 feet abaft the red one, and a few feet higher, *on the foremast, or as may be arranged.*

The lights thus placed form of themselves an unerring guide to those who come within their limits of observation, and they will at the first glance point out the relative positions of each vessel. But in order to more clearly define the exact positions of the respective steam vessels from various points of observation, I propose that a red light should be always ready for exhibiting at the stern of the steamer in case of need, *to show the extremes of the hull (or danger)*, and from which three lights, thus shown, an immediate and correct position would be ascertained.

The plan of itself is so simple that any further illustration appears almost unnecessary; suffice it to say, steamers meeting and both seeing the green light well open to the right, or starboard, of the red one, places each other on their port bow, or *vice versâ*.

I have no doubt there are some who will even argue that my plan cannot answer, because there may be a probability of the lights being hidden from view by the head sails, or the green light obstructed by the square foresail. But from the great majority of your nautical readers I can anticipate a far wider and keener development of their judgment on a subject in which they must feel so deep and special an

interest. I wish, therefore, to remind those who would offer any opposition to my plan, that it is only during a portion of the twenty-four hours that lights *are needed*, and that the head sails or square foresail (*where fitted*) are and can only be used occasionally as an assisting propelling power, although in itself a very feeble auxiliary (which could be entirely dispensed with during the night), and that their arguments would weigh but lightly in the scale against all that can be said in favour of lights placed free from any and every permanent obstruction, and which I submit my plan is capable of; whereas lights as now placed are liable to be obscured from such a variety of causes, that it would be a mere waste of time to dwell on them, and under the existing state of things they must at times tend to aid and accelerate the danger.

Lights placed as proposed by me, and at the suggested elevation, would be conspicuous at a great distance. They have also the advantage of the improbability of being obstructed by any local cause, and could be seen under every ordinary circumstance so long as distance would admit. Having thus (and I trust conclusively) shown the advantages to be derived from the plan thus submitted, it only remains for me to add that the rule of the road can be made, not only perfectly explicit, but definite, as regards steamer meeting steamer, carrying lights as herein set forth; and I do not think that any alteration in the present side lights of sailing vessels is necessary, as every commander of such vessel would (with the lights as placed by my plan, *on board of steam vessels only*), be enabled at first sight to judge his exact position of the danger, to which his vessel might otherwise be exposed, and could then act promptly and decisively.

Yours faithfully,

N. HECKFORD.

To the Editor of the Nautical Magazine.

SEXTANT COLLIMATION,—and Defects of Manufacture.

Sir,—In the volume for 1865, page 388, there is a communication from Mr. Edmund Johnson, on a *new* method for ascertaining the error of Collimation of the Sextant.

I think it can be shown that such a method is impracticable, or at least has a very limited value, so much so as to render it worthless.

For example:—With the sun at any distance from the meridian, it will vary in altitude. Therefore, when you place the two suns in contact on one wire, in the artificial horizon, and then move to the other, a *portion of time* will have elapsed; and however practised and expert an observer may be, he will scarcely venture to assign the proportion of error due to the movement in altitude of the sun and that due to the error of collimation while he was ascertaining the error.

Hence the value of this method is only when the sun is on the meridian, when there is no motion in altitude, and of course that can be in those latitudes only where double the meridian altitude is within the limits of the sextant; and even then there would always be an empirical value attached, which certainly renders it far inferior to the old method, however troublesome that may be.

With your permission, I will take this opportunity of saying a few words on the sextant, especially with reference to its construction at the present day as made in England; with continental sextants I am not familiar.

Now then, to begin boldly, I say that the mechanism of the sextant is a disgrace to the makers of this country. In this age of gigantic strides of improvement in the manufacture of engines, machines, tools, instruments of all sorts and kinds,—an improvement which is truly marvellous,—will any one venture to say the sextant has kept pace with, or even followed in the rear of, this advance? I think not; and I dare say, Mr. Editor, you can confirm this. Possibly as a “youngster” you may remember having seen sextants as good, nay, most of them better, than the instruments made at the present day. Indeed, it will be extremely difficult for any one to prove an improvement, worthy of the name, during these last forty years.

Now to details. First, with regard to weight. I think it will be conceded by all professional men that lightness is an immense advantage. Who has been taking a series of lunars or altitudes in artificial horizon, especially surveying officers, and has not towards the end felt a sensation in his wrist as if it was rather unsteady, and echoed a thought—“I wish my sextant were a little lighter?” Thousands of men can corroborate this assertion, and yet we *cannot* get them made any lighter. However, I say it is possible to make the sextant two-thirds less in weight than those made at the present day. The instrument would be then more effective, useful, and elegant.

Suppose we were to ask Dr. William Fairbairn, or other eminent authority on the strength of metals, &c., his opinion of the sextant as a machine, and of the strength and weight of metal used in its construction, and whether it could not be made infinitely lighter and more elegant and equally strong for the work it had to perform, I have no hesitation in saying he would preface his answer by the remark that “the engineer who constructed this instrument ought to be ashamed of himself;” and doubtless the opinion would be to the effect that it could be better made with *a third* of the material employed. I only wish, Mr. Editor, he would try his hand at one, or show some of our London opticians how to make it, giving them at the same time a few hints on the “strength of metals, &c.; and then possibly we should get a respectable instrument.

As an instance of the unnecessary weight of metal used take my own sextant for example, which is doubtless a fair sample of those used generally. Here is its “story.” It was purchased new thirteen years ago from a maker *East* of the Post-Office (London), cost £12, and during my experience of handling an instrument, say twenty years, I

have not seen a better, imperfect as it is; and if you will excuse the egotism, I have taken a fair amount of lunars, and yet this instrument is sadly mutilated, which came about thus. When purchased it had of course the usual superabundance of material in its construction, and weighed with inverting telescope 3 lbs. 6½ oz. So one voyage we had an intelligent ship joiner—one of those fellows termed a “handy man”—and I set him to work to get rid of some of the extra brass, &c., and with a saw (used for cutting wire rope) he actually cut up that sextant into one, two, three—yes, positively *twenty-eight*—pieces, and yet there was the complete instrument remaining. What between sawing, filing, and chipping, he managed to take away 10½ ounces of metal, and yet a skilful optician might have taken away easily another 8 ounces. If such an operation can be done at sea with rude tools and unskilled labour, and yet improve the instrument, there must be something sadly defective in our sextant makers, some want of skill, attention, or perhaps an apathetic indifference to our wants, which continues this state of things.

Now, as the press is the grand monitor to waken up people to a sense of their defects, and the *Nautical Magazine* is essentially our press, with your kind permission I would desire these few words to be the germ of something from other hands more effective and stirring, so as to bring out the fact of there being an optician in Britain fit to make a really good sextant light and elegant, and fit to take its place as a sample of mechanical skill.

Perhaps a few words on some of its defects may not be out of place, and may be the means of suggesting a remedy.

First. There is the weight of it as a whole. Why should it not be made of steel? It would dilate less in changes of temperature, being consequently more accurate; and in these days it could be bronzed or electro-plated at a trifling cost to prevent rust.

Second. The frame is in all sextants—not excepting the best reputed makers, Troughton, Dollond, Carey, &c.—much too massive and heavy.

Third. The index bar is too massive, and a great quantity of superfluous metal at its axis and head of no use whatever. The index glass is in most cases set in a case of metal sufficient to supply all the fittings to the sextant, and it is also unscientifically connected to the index bar. The glass may be smaller.

Fourth. The horizon glass partakes of the like defects.

Fifth. The shades are, to say the least, barbarous. Imagine a pair connected, and used over the optician's nose as spectacle shades. I fancy the nose would soon want sticking-plaster, and a remedy might then be found to make them lighter. Why can't we have them fitted as our ordinary steel spectacles, than which nothing can be more light and elegant; and it is so suggestive, that I wonder how it has never been done, instead of being placed in a mass of metal fit enough to serve for the frame of a gridiron.

Sixth. The parallelism of the sides of the glasses is defective in almost every instrument; and I believe this to be the largest source of

error in all observations. I have examined a tolerable number of sextants, among which I had the honour of inspecting those of one of her Majesty's surveying ships; and although they were certainly the best constructed, yet they did not by any means come up to my idea of what they ought to be, and there also the same error of shades existed; indeed, I am of opinion it exists to an incredible extent. Surely it cannot be so difficult to procure good shades as seems to be from my experience; I would rather set it down to carelessness on the part of the makers. The errors of the dark shades, or two or more light ones combined, you may obtain by the sun; but it frequently happens you want a single light shade to cover the moon during a star or planet lunar, and its error is most difficult to get. The best method, so far as I know, is by the moon when at full, holding the sextant at right angles to moon's path and then making the contacts, thereby obviating the chance of getting a badly defined edge. This error might be nearly done away with by having *all* the shades of precisely the same *shade of colour*, to be so compensated that the four together would equal the brightest sun. Now, as it so happens that our sun lunars and sights in the artificial horizon are obtained generally on bright days, we should use all four shades, or at least three, and the chances are good that their errors would be neutralized and a good result obtained. I maintain that this source of error is equal to all others combined.

Seventh. The vernier ought to be double the length, and it is so made by a few makers. It is so much easier to distinguish the point of coincidence when the vernier cuts only at every alternate line on the arc.

Eighth. The surfaces of the vernier and graduated arc ought to be on the *same* plane, instead of being placed at an angle to each other as at present. This for two reasons. The first, to obviate parallax; because, unless your eye when looking through the microscope is directly perpendicular to the two lines in coincidence, you will see them form a very obtuse angle; hence a parallax. The second and most particular is to get the light thrown equally on the vernier and arc, especially at night, when taking star or planet lunars. There is much difficulty in this, and you find your head getting into all manner of positions in order to read off. At last it is effected and noted, and off you go for another sight, and have altered the tangent screw (which ensures an independent observation), when it suddenly occurs to you that, in your anxiety to get the light properly on the vernier, your eye was (unconsciously) not perpendicular to line of coincidence, hence a parallax; and you are not satisfied with the distance just noted, so cause it to be rubbed out. Now, I contend that these and similar annoyances would cease to exist if the vernier was *sunk* until its surface was on the same plane and parallel to the surface of the arc. The light would bear on both alike, and a set of distances would be obtained in half the time that it now takes.

Ninth. The mechanical principle of clamping the vernier to the arc is not good, but I cannot well explain my improvement.

Tenth. The telescope tubes *ought* to be made of steel as thin as the paper on which I write.

Last, but not least. The "feet" ought to be placed on the face of the instrument, to obviate the necessity of using both hands to place it down. The present arrangement is senseless; and I once saw its disadvantages most prominently in the case of a young naval officer surveying a harbour, where he was taking angles as fast as they could be read off and transferred to his field-book. But at every angle both hands were used to place the sextant down; whereas, if the feet had been placed on the face of the instrument, it could have been at once placed beside him, and the field-book always retained in the left hand.

After suggesting these improvements, it will probably occur to most people to ask if I have a sextant made to order? I may say No, for several reasons. Some may not be told. At first I was not so exacting as to the quality of an instrument, and deferred purchasing until I found a first-rate maker. It is needless to say I have *not* found him. Latterly I had some idea of getting a sextant made, for which I would take out a patent. The Patent Office is a formidable place, and not to be encountered easily; and a greater difficulty is to find an optician who would thoroughly enter into my plans and views. Him also have I not found; so, Mr. Editor, my intentions seem to have gone as an additional mite to the pavement of those regions, &c. Still I am as eager as ever to get a good sextant. My latest idea is to post a notice in the "Jerusalem," requesting subscriptions up to £200 or £300, for a prize to an optician who could produce a superior instrument possessing certain requisites; say, for instance, weight not to exceed 1 lb. including inverting telescope, and price moderate, within reach of all. These might be fixed upon by committee. I am sanguine enough to think this would be responded to by very many, and especially by naval officers, if a similar notice was circulated in Portsmouth, &c., and doubtless we should get something worth our money.

I hope, Mr. Editor, I have shown sufficient reasons for requesting your aid in this matter; for, unless the press takes up a grievance, it generally gets shelved, but if written and commented upon, it takes more or less effect. In this case our sextant makers may bestir themselves, and some good result to the navigator.

As professional men, sailors are badly treated; we are forced to put up with what our nautical opticians and booksellers choose to sell us. With the exception of the charts which the Hydrographic Office supply, in all else connected with our profession as a science we have not kept pace with other professional men. Take engineering, for example, and look at the numerous inventions and improvements which have been made. Daily some new tool or machine is invented. Its merits are immediately discussed in their many professional journals and magazines, and forthwith it becomes known. Indeed, scientific men on shore are almost pestered with improvements in instruments and machines appertaining to their professions or studies; but, alas! poor "Webfoot" has to put up with his old things, however antiquated.

His very existence and desire to be tolerated as a scientific man is quietly ignored, and he is not even allowed to put his foot on the lowest step of the ladder of science.

But I have said enough. Perhaps at some other time I may say something about our compasses, which are in a worse state than our sextant.

I remain, sir, your obedient servant,

“QUOD VERUM TUTUM.”

To the Editor of the Nautical Magazine.

[Our correspondent's complaints (old as they are) are most just, and the maker who attends to them and removes the objections he points out shall have our good word of patronage. The use of steel (bronzed) would go far towards removing the evil of weight. One of the largest instruments at the Royal Observatory is of steel, quite on account of doing away weight in a *fixed* instrument, while *strength* is preserved. How much more, then, is such necessary when it has to be held by the hand, and sometimes in a trying position. We say again, the maker who shall produce lightness in the sextant and correctness in all its fittings, especially the centering of the telescope lenses, shall have our good words.—ED.]

THE AMERICAN IRON-CLAD MONITOR “MIANTONOMAH,”—
Her Passage to the Baltic.

The following account of the performances of the iron-clad *Miantonomah* in the German Ocean on her passage to the Baltic may be of service hereafter, when the sea performance of these vessels becomes an important question. We therefore preserve it for future reference.

We took our departure from the English coast at 7h. p.m., after we had discharged our pilot, and headed for the North end of Denmark, to make the Handsholm Light, at the mouth of the Skaggerack, the channel leading from the North Sea or German Ocean to the Cattegat and Sound, and thence to the Baltic. The passage up was boisterous, and the heavy short seas we encountered ahead were a serious obstacle to the rapid progress of the *Miantonomah*. They came down before the strong gale from the North-east with tremendous force, and in the shoal waters of the North Sea, where varied currents meet and create great disturbance, they were piled up in wild confusion, testing the buoyancy of any vessel.

The *Augusta*,* with lively motion, pitched in them, but with her extraordinary sea qualities she laid her course right on through them with some exertion.

The *Miantonomah* found it hard work to drive ahead against the

* United States sloop of war, which accompanied her from New York.

heavy seas, and her speed was materially diminished. One day we made less than 115 miles.

It was an interesting yet a fearful sight to watch the motions of the iron-clad as she plunged through the swiftly-moving masses of water. In a long rolling sea a ship has time to rise from a pitch over one sea so that she may easily meet the following, and ride over it; but with a short chopping sea, such as we meet in the German Ocean, a vessel must be exceeding lively to carry a dry deck. The *Miantonomah* encountered the worst seas she has ever seen, and she came out of them finely. Driving ahead, the huge mass of iron and wood, wonderfully buoyant for the weight carried, she would rise slowly to the coming sea, which, crested with a white mass of foam, bore swiftly and with terrible force upon her, threatening to submerge and bury her for ever, and, lifting her wedge-like bow high in the air, showed the reddish line of her plating, and below the gleam of her copper, she would ride over the sea, and then plunge down to meet the following wave. And here she experienced trouble. The space between the waves was so short, that with her immense length she could not rise quickly enough to pass over it, and so she went through it. It would sweep in rolling and seething along, divide on her sharp bow, and roll in solid green water 12 feet thick up to her forward turret, and then break against that tower of iron in wild, frightful and confused masses, the white spray flying 40 feet above the top of the turret, drenching the officers and men there, and not sparing any one on the hurricane deck. Other seas rolling in this frightful manner would break and draw cold water to the very grating of the hurricane deck, and descend in miniature Niagaras upon the head of the watch.

The scene was exceedingly wild and not without elements of fear; but the ponderous bow would rise again from under this mountain of water and roll it off in gleaming and flashing cascades that swept from the water cut to abaft the turret, looking like a small Triton. The following sea she would almost escape, but the next would go crashing and rushing over her. So it went on for hours,—all wild, fearful and threatening, as seen from the turret, but below in the cabin and ward room, out of sight of those frightful seas, a summer passage, with an almost imperceptible roll and a gentle pitch, without jerking or sudden motions. The quiet breathing of the passive engines as they forced ahead the ponderous hull was all the sound heard there. No howl of wind and no sound of seething waters entered in that quiet retreat, as the wonderful ship ploughed her course through the angry waters of the North Sea, under a wild, gloomy, chilling sky, and into a sharp, strong, northerly gale.

A Brooklyn ferry-boat occasions more uneasiness at times by her motion than was experienced under the shot-proof decks of the *Miantonomah*. No better test of her surprising strength and solidity, combined with wonderful sea-going qualities, could be desired than that afforded by the rough usage she had experienced and came out of it unscathed in the North Sea and the Skaggerack.

The weight of a solid wave 10 or 12 feet may be easily calculated.

It is something immense, and one that no wooden vessel would care to receive on her decks.

Of course the *Augusta* was always above water, and the test was not so severe upon her; but the result to her of a blow such as the *Miantonomah* repeatedly received I do not care to speculate upon, especially as I have some thousand miles to voyage in her yet.

The English pilot of the iron-clad made his first voyage in one of that class to this point, and it is not saying too much to assert that he was thoroughly frightened when he gazed upon those tremendous seas coming aboard as he stood upon the forward turret. He was exceedingly troubled lest the deck should give way and be crushed in under the superincumbent water; but gradually regained confidence and courage as he observed how little effect the waves had on the ship. There was no shock of collision and no shivering and trembling, such as he had before experienced in like circumstances; but the ship pursued her own way, easily and comfortably, throwing off the furious green seas as a lion would toss a rain-drop from his shaggy coat. And when he went below and was shut out from the physical exhibition of the elements his wonder grew, and he now pronounces the vessel the most admirable and wonderful ship that ever floated. In that he but re-echoes the verdict of all who have ever seen her.

An account of her visit to Spithead will be found in our last volume.

VOYAGE OF THE "PIONEER"—No. 4.

(Continued from page 147.)

From the time of our sighting Gough Island, March 31st, until we encountered the heavy gale four days after passing St. Paul's and Amsterdam, May 6th, we had been thirty-six days running down East longitude; our highest latitude was $42^{\circ} 30'$ S., and our best day's run 210 miles. In reference to Great Circle sailing on this part of the passage to India or the Colonies, I would remark that it should not be attempted in any ship not thoroughly well found and manned; for not only are stronger winds and rougher seas to be expected, but it is also to be noted that, in the case of a ship getting disabled in the higher latitudes, she is there far from any port of refuge.

On the night of April 22nd we had a very fine view of the Aurora Australis. Shortly after midnight the officer of the watch came down to my cabin, and reported that a red cloud was coming down on us from the S.W., "red as blood," and that he did not know what to make of it. On reaching the deck, I was struck with the appearance of the heavens in the southern quarter, and remarked that this phenomenon differed from what is usually seen of the Aurora Borealis both in colour and in motion. There were no flashes of light, so often seen in the northern hemisphere, nor any brilliancy, but a gradual

expansion and approach of a deep red luminous radiance, until it reached its maximum, when it waned and disappeared about an hour after it was first seen. The day following was the coldest we had while in the southern hemisphere, though 3 degrees less to the South than we had been; and I thought it probable that this lowered temperature was in some way connected with the southern light of the night before.

Among the flying-fish which were often found on the decks at morning would be a squid or two; and I think of all the strange creatures in the sea this is one of the strangest, whether we regard its form, beauty of some of its colours, or its marking. They are said to be the whale's food, and must be very abundant in this tract, where we also saw a number of whales. It is also said that the back-bone of this fish is generally found in the whale's intestines, causing stoppages and distressing the animal and in cases of advanced life contributing to its death.

During this time we were never without a good attendance of birds of various kinds, from the albatross (one of which we caught), with its 9-foot stretch of wing by our own measurement, down to a little "Carey," scarcely bigger than a sparrow; and I am inclined to think that some of the birds which flew off to the vessel from Gough Island remained with us all the time until we had passed to the eastward of St. Paul's.

I noticed one night what appeared to be an electrical fish, which emitted sudden flashes of light, and as there was no phosphorescent appearance in the sea, this fish must have been self-luminous: I don't remember noticing another instance of the kind.

In one of the intervals of calm during this part of our voyage we saw a number of very young flying-fish, not bigger than dragon-flies, and it was a very pretty sight to see them skimming about on the smooth surface of a calm sea in a most frolicsome way, like any other young creatures which have nothing to do but enjoy themselves.

I have already mentioned in a former paper, that among the strange things we fished up out of the sea, the most remarkable was a little creature with a head and trunk exactly like an elephant's, and which would have been preserved had there been any possible means of doing so.

From what I observed during this voyage, of the immense variety and multitude of animal forms in the sea, I am led to think, that as on land different countries and provinces according to their climates have animals and plants suitable to such climates, so in the ocean there is a distribution of animal life of a similar character; and I have little doubt that there is not a port in the inter-tropical seas separated from any other port (say a distance of a hundred miles) in which will not be found some kind of fish or marine animal peculiar to that port, and not to be found in any other.

Near the meridian of the Mauritius we saw the rare phenomenon of a lunar rainbow, and it seems strange how long one may be at sea without seeing this beautiful sight.

From the rig and build of the *Pioneer*, we could never press her with too much sail, which we could always carry as long as nothing gave way. This can be said of few sea-going vessels; and when it is considered that every sail has a twofold action—one propelling, and the other depressing, and that, when the wind has reached a certain strength, the latter action is of greater force than the former, it is easy to see how it is that a ship in a stiff breeze has her speed increased by taking in the topgallant sails; and I have known the case of a ship in ballast after the loss of her topmasts going as fast under her courses only as she was ever known to have gone under a full press of sail. Both these cases admit of an easy explanation: in the first, what with the strength of the wind and the height of the sails, their depressing (or, as the Germans would say in a single word, their bow-plunging,) exceeded their propelling force, and so the ship would go faster without them; in the second case, it is to be noted that the ship was in ballast trim, and so did not require the amount of sail of a loaded ship, and that the courses lying so low have much less depressing power than the upper sails, and so can be carried much longer with advantage to the speed of the vessel.

The problem may be a difficult one to solve, but not, I think, beyond an approximate solution. Given the force of the wind, the height of the sail above the centre of gravity, rate of sailing, and trim of the yards, &c., to find out the proportion of these two forces operating upon the rate of sailing at any given time. Perhaps among the able and experienced contributors to the *Nautical Magazine* may be one who will exercise his intelligence on this problem, and suggest a formula for its solution, for I think the question at issue is not one simply curious, but would be found useful and practical.

On the 11th of May we re-entered the S.E. Trade, and on the 30th crossed the Equator again, steering to make the East coast of Ceylon, and looked forward to completing a speedy passage up the Bay of Bengal with the first of the S.W. monsoon. Little did we expect to find the bad weather we had there, or that our passage was to have the perilous ending that befel us. On account of the wind hanging so much from the West, and sometimes North of West, we could not get within 100 miles of Ceylon; yet at that distance the scent of the land reached us, as the wind blew right off the island, and no one will be surprised at this who knows how strong are the odours of tropical vegetation, especially in the early morning and in the evening. I don't say that the fragrance of cinnamon reached us, about which such stories are told by nautical Munchausens and other voyagers, but the smell of the land was certain, and it occurs to me that many discoveries of the early navigators may be owing to the fact that you may often smell land when it is entirely out of sight below the horizon; and who can doubt that many a vessel running into danger has been saved from wreck by a whiff of land breeze?

Speaking of shipwreck, does it not appear surprising how much the lead is neglected in our merchant service? A seaman, however skilful and experienced, ought never to forget that carefulness is the first

element of success, as it is the first requisite of safety; and I would say that there is no more valuable motto for a commander than one we have from Shakespeare. Indeed, for practical purposes, it is worth more to a seaman than all the rest of Shakespeare together, if only he will give it a thought, and see what it means. It is this:

“Omission to do what is necessary
Leaves a commission blank to danger.”

Let me illustrate this golden rule by an incident in my own experience. The weather had been unsettled all day, with a falling barometer, and at eight bells in the evening the captain, instead of taking in a reef, took in only the light sails, and after telling the chief officer to keep a look-out, went to his cabin and turned in as usual. Within an hour after this the wind had increased so much as to distress the vessel, and while two of the watch were aloft furling the maintop-gallant sail, and all hands were being called to shorten sail, away went the topmasts over the side. Now here was a case, on the part of the captain, of “omission to do what was necessary,” and so when he left the deck he left “a commission blank to danger,” which was filled up by a rough North-wester, with loss of masts, disabled seamen, hard work night and day for all hands, and a ruined passage,—all of which might have been spared had he come down a reef when the watch was called. It was in this vessel where the case is alluded to of going as fast under courses as under a spread of sail.

W. C. P.

(*To be continued.*)

The conclusion of our “Homeward Bound” is deferred to another number, that we may make room (with the addition of an extra half sheet) for this “Review,” to which our early attention (it is said) will add some interest.—Ed.

REVIEW OF THE YEAR 1866.

DISASTROUS year of ill-starr'd, cruel fame,
Let dire Disorganization be thy name!
Thy plagues of cattle, cholera, and fire,
Of war and pestilence, awake the Lyre,—
Explosions, inundations, and the wreck,
And heavy slaughter which those mines bedeck,—
Sad year of trouble! such works bid thee go;
Forget thy name in Lethean streams below;—
Haste thee away, and in oblivion's lake
Be lost to memory, for memory's sake!

Scarce had thy first few fretful days gone by,
When storm and tempest raged most pitilessly
O'er Britain's land! Fierce gales of fitful blast
Lash'd ev'ry coast, and dire destruction cast

On British ships, transporting trading store;—
 Rend'ring the safety of the weather shore,
 (Condition known to seaman's nautic lore,)
 By sudden change of wind, secure no more;
 Strewing with wreck each strand of open bay,
 Where ship on ship in shatter'd fragments lay!
 Oh! how the storm-fiend revell'd in his work,
 Where cruel death in divers form did lurk,
 Brixham can well remember; while Torbay
 Open to the fury of the sea doth lay!

How sweet, Torbay, to range thy beauteous shore,
 Enrich'd with gifts from Nature's bounteous store,—
 To see thy craft their daily task pursue,
 Dotting thy bosom of ethereal blue;
 Whose peaceful waves, when Western breezes blow,
 Nor huge proportions nor wild tumult know!
 Alas! how changed when Eastern gales prevail,
 Their furious seas thy peaceful shores assail:
 'Tis then the barque, at sea that cannot live,
 Would seek that shelter which thou canst not give:
 Down to thy shore she comes before the wind;
 Refuge she wants; alas! what does she find?
 No screen from sea or wind of any kind!
 What are to her thy Lilliputian ports?
 What, too, thy harbours of mere tidal sorts?
 As useless as thy despicable forts!
 No spacious pier extends along thy coast;
 No Portland Dyke, indeed, hast thou to boast;
 Thy bay lies open and exposed to seas,
 Open to billows raised by Eastern breeze:
 Ships at their anchors founder in thy waves,
 Or on thy rocks are marks of seamen's graves!
 Devonians hereafter will wonder there
 That nought but *tide-traps** could thy people spare.
 Short-sighted mortals, they seem not to know
 The real treasures roomy ports bestow!
 England, it would be well that thou didst see
 The truth that lies in this philosophy:—
 Ships, Colonies and Commerce are thy pride!
 True to the first art thou? THEN PORTS PROVIDE.
 Many another site upon thy shore,
 Made into harbour would increase thy store,
 And save thy hardy seamen by the score!

* A sarcastic epithet for *dry* harbours, well known on the eastern coast of England.

Yet let the Muse now tell of Sixty-six ;
 Sad year, on which she has sad tales to fix :
 First we to Ocean turn :—destruction there
 The merchant ships of Britain does not spare !
 Th' unhappy *London's* crew first claims her note,
 From wat'ry grave some few were saved by boat.
 Th' *Amalia* found'ring better fortune had,
 Her people saved, yet both ships just as bad
 Were overloaded, and by far too deep
 Themselves on ocean's surface safe to keep.
 Yet what avails t' enumerate a list
 Of those ships that unhappily are miss'd
 From the long register of Lloyd's List ?
 And shall the wrecks that sully thy fair fame
 Ever remain a blot upon thy name ;
 Number'd they are by hundreds in a year ?
 England ! there's something strange in thy career,
 Thy merchant craft are lost, yet soon replaced ;
 Where are their hapless crews ? Can they be traced ?
 Yes ; gone to their doom,—their unhappy fate
 Was poor return for them t' anticipate.
 Boast as thou mayst, thy numerous merchant fleet
 One-third 's but thine, the rest are all deceit :
 Foreign indeed are they, a motley crew,
 Whom thou generously teach thyself t' undo,—
 A course which may thou not hereafter rue !
 Seamen can well be made in British ships,
 As well as other craft that make their trips
 On ocean's wide domain : they quickly learn
 Their duty there at ev'ry end and turn,
 From good experience, how their course to shape
 On this or that side of the Southern Cape.

Again, thy lawgivers t' increase thy trade
 Sad havoc with thy *seamen* seem t' have made !
 Two foreigners to one seems hardly fair,
 Yet so it is :—so does thy law* declare !
 And bad th' effect ; for thus they introduce
 To all thy ships disorganization loose !

* By the Merchant Seaman's Act the crews of British ships may be composed of *two thirds foreigners* and one third British—seamen or not seamen ! It appears by an excellent article in *Fraser's Magazine*, that one twentieth of our 190,000 British officers, seamen, and apprentices, are being *annually replaced by 9,500 foreigners* or landsmen."

* * " And it is not so much a question of high wages elsewhere as *bad treatment at sea.*" Surely all this must be stopped.

It is not fair they should be allow'd to spoil
 Thy sailors' comforts with their foreign broil ;
 It is not fair Jack's mess should be destroy'd,—
 Of his own people it should be so void :
 Who has he now upon his right and left,
 Since of his countrymen he is bereft?
 Foreigners forsooth : d' you suppose he likes
 To have them rather than his friend Bill Sykes,
 Or any other of his countrymen,
 In that confined and miserable den,
 The fore-castle* that's call'd, in which he lives ?
 'Tis bad enough, and little comfort gives ;—
 But now companionship no longer charms,
 No friends has he with whom to spin his yarns :
 Instead of these he has on either hand
 Those foreigners he cannot understand !
 And think you that he thanks you for this change ?
 No ! believe it not ; rather he would range
 Far o'er the world, and seek a better fate,
 Than with such messmates THERE to congregate !
 In fact, he's gone ; regain him if you can,—
 But you will find that he's a disgusted man.
 " Disgusted, why ? " you'll say : the Muse replies,
 Severe ill treatment in his story lies.
 Depend, John Bull, a great mistake you made
 With foreigners to man your ships of trade :
 Your British ships were British seamen's boast,
 Until you turn'd them out for foreign host.
 England must have her trade with all the world :
 And why not ? Why not with her flag unfurl'd ?
 Why not her ships on ev'ry coast be found,
 With civilizing trade to spread around
 The world itself ? Yet let them all be hers ;
 Mann'd by her own, and not by foreigners !
 Her merchant ships are British ships no more,
 Such as they used to be in days of yore ;
 When foreign seamen here and there were seen,
 " Like angels' visits, few and far between ! "

* The abominable housing of seamen afloat, the bad provisions and water, the utter indifference of the *owners* to the decency or health of their crews, the absence of all responsible relations between the ship-owner and the seaman, the low rate of freights arising out of a glut of shipping, to which the parsimony in fitting and sailing ships may be ascribed, the excess in marine insurances effected by the smaller owners, and the consequent recklessness and indifference all round, are more than enough to account for the abandonment of our merchant navy by the better sort of British seamen.—*Daily News*, February, 1867.

ENGLAND! and art thou still content to man
 Thy trading vessels with a foreign clan?
 Thou that art held a first-rate *naval* power?
 SHAME ON THEE! Surely this in some dark hour
 Thy senators decreed! 'Twere wiser far
 To make of each thy sons a British Tar,
 That is inclined for sea: numbers there are
 Amidst thy plenteous throng! Then thou wouldst make
 Good sailors of thine own, who for thy sake
 Would by thee stay; aye, ready to defend
 Thy cause from foes! But, madness without end,
 Foreigners thou must have, and seamen make
 To crush thee by and by! Why nurse the snake?
 Rather thy seamen nurse,—they'll make return
 Right good when danger threatens in its turn:
 Apprentices restore, like those of old,
 To form the nucleus of thy seamen's fold;
 For merchants, if they wish their ships to man,
 Must be content to pay th' apprentice clan:
 When scurvy's banish'd from thy merchants' fleet,
 And juice of limes supplied without *deceit*:—
 When all thy ships are mann'd with British crews,
 When berths are dry and comfort can diffuse,
 And foreign hands no longer in them found;
 No dirty and no filthy stench abound,
 Good treatment* with good fellowship is crown'd;—
 Then will thy seaman's policy be sound;
 No longer will he seek another strand,
 But gladly turn unto his native land;
 He'll love his craft, will execute thy will,
 And British ships will British ships be still:
 For treatment past those terms will make amends,
 And are conditions which thy muse commends
 To senators, who are their country's friends.
 Now to her task she turns, to tell those tricks
 That have been play'd by naughty sixty-six.

If storm and inundation mark its course,
 Does not explosive subterranean force,
 And plague, and pestilence, the same endorse?
 Foul war itself has devastation spread
 O'er the fair ground that Europeans tread:
 War has its evils, and perhaps its charms,
 For those who reckon on the chance of arms.
 'Tis now three years since Prussia sily cast
 A longing eye on Denmark! country fast

* See preceding notes.

Lock'd in old-fashion'd European ways,
 Not skill'd in war, nor could she ever raise
 A force, that could successfully oppose
 The numerous columns of her Prussian foes.
 Denmark had valour; this did not suffice
 Against those Prussian hordes and science nice,
 With 'vantage gain'd them by their needle gun!
 For soon did Prussia find her object won.
 What object? Let Schleswig Holstein say,
 Annex'd to Prussia in the present day.
 Prussia fail'd seaboard, which her Baltic shore
 Could not afford. But further West lay more:
 How easily annex'd, were reason found,
 Or could be furnish'd on politic ground!
 Ah, well! another claimant for the spoil,
 Austria interposed, and in the broil
 Advanced her right to Schleswig Holstein too,
 Whatever Prussia might pretend to do!
 Enough! These powers had recourse to arms:
 Again was Europe rack'd with war's alarms:
 But sev'n weeks only served to turn the scale,
 And leave lone Austria beaten in detail!
 For Austria had another war to wage;
 Venice was Italy's in bygone age,
 And claims now made against th' Austrian rule
 Were well maintain'd by that Italian school.
 Venice indeed was torn from Austrian claws,
 And Italy rejoiced she'd gain'd her cause.
 The moment favour'd her, she knew full well,
 When timely it was struck, the blow would tell.
 Thus has the map of Europe changed its face,—
 Hanover and Hesse Cassel take their place,
 Nassau and Frankfort Prussia's crown to grace:
 This warlike power having thus obtain'd
 The seaboard which the first had long retain'd;
 Venetia, too, by Italy's regain'd.

Doubtless that German union thus has made
 A stronger power than could each parade;
 Each smaller state of so much lower grade.
 The river Elbe will passage freely give
 Seaward for Prussian shipping that would live
 In naval annals: they already run
 To distant countries, where the needle gun
 Serves to excite the wonders late begun
 On Europe's field! Can England show the same?
 As justly would become her naval fame;
 Or does she wait t' incur the usual blame

That a new weapon does not bear her name
 In those warships she sends upon the main?
 Still Prussia's navy has but poor resort,
 If she can find no other fairer port
 Than those afforded by her stinted coast,
 Beset with sandy flats and shoals to boast:
 Still let her have the credit she deserves,
 In fitting her warships without reserves.

And what says Rome about Italian change?
 Ill does it brook what threatens to derange
 Ecclesiastic rule; to reconcile
 Itself to heretics,—Protestants vile!
 Hard must it be. Can absolute control
 Its power yield e'en o'er a single soul
 Without ill grace?

Here let the Muse approach
 A subject grave, whereon she would not encroach
 With her opinion; but by common sense
 She's authorized and may some words dispense.
 O restless man! perpetually inclined
 Some wicked fiend to harbour in thy mind!
 Italian change, indeed!—it would be strange
 That an all-grasping rule could bear that change.
 The "Holy See" *government* claims to reach;
 When did the SAVIOUR such a doctrine teach?
 A leader spiritual as a temp'ral king!
 The world is far too old for such a thing!
 Politics with religion ill combine,—
 A study each for love to intertwine.
 Ill grace indeed: How greedy of command
 Is mortal man! more, more he would demand,—
 Nothing could he resign;—the world itself
 Is not enormous for rapacious self!
 If in the East he meets with fallen crest,
 Why not renew exertions in the West,
 The souls and bodies of mankind t' enslave,
 And hold them fast from cradle to the grave?
 For such the Popish doctrine does require,
 'Tis said, to guard them from eternal fire!
 And thus among us is a schism raised
 'Bout ritual, by some few clergy praised,
 Who thus a firebrand do throw
 'Midst church affairs, because *they* please it so!

These purblind mortals do not seem to know
 The Laity's* the Church, and they say No;—

* See letters of a vicar of the diocese of Norwich in the *Daily News* of December last.

They will not have their ceremonial hash
 Of dress, of crosses, candlesticks and trash ;—
 All Popish relics of another age,
 Just rummaged out of some damp musty page,
 In which those clergy do delight t' engage !
 Yes ; truly are they Romanists at heart,
 Well are they acting all the Papist's part :
 Send them to Rome, with their supporters too,
 Fools to believe the Church they can undo !
 England has pass'd through her religious test,
 And well she knows the serpent in her breast !
 In churches where that serpent's work is done
 By clergy, all the laity as one
 Should quit the church whene'er it is begun,
 Leaving the Papist parson, if he choose,
 To play his tricks and preach to empty pews.
 Then let him take himself to Rome ;
 He's better there than in our church at home.
 Since he's well fitted for the Holy See !
 Such treatment would a wholesome protest be,
 Better than appeal to Bishop* with his key.

* We quote the following on this subject, on which there are many more of the same kind, but which would take us far beyond our limits to introduce here.

" **THE BISHOP OF SALISBURY AND THE ANTI-RITUALISTS.**—The following 'protest' against the supposed ritualistic tendencies of the Bishop of Salisbury has just been presented to his Lordship, signed by 500 of the 'clergy, magistrates, gentlemen, yeomen, and others of the diocese:'—'To the Right Reverend the Lord Bishop of Salisbury,—We, the undersigned, having read with the greatest regret the answer of your Lordship to Lord S. G. Osborne's letter, in which you state that clergymen of the Established Church have had committed to them the same powers which the priests of the rest of the Catholic Church, both in the East and West, have ever claimed as their inheritance; and feeling that such views essentially tend to the Romish practice of confession and absolution, and false doctrine; and considering the efforts which are now making by a certain party in our Church to bring back the ceremonial and ritualistic rites of the Romish Church into our Reformed Protestant Church,—do hereby solemnly protest against such views, from whatever quarter they may arise, and do signify our determination, by the help of God, to stand firm against any opinions or practices which are too evidently leading to Romanism, and entirely subverting the great doctrines of the Established Church, as defined in her Thirty-nine Articles, and deduced from the Word of God.'"—*Daily News*, Jan. 29.

"The Dean of Carlisle is stated to have said, in a recent lecture in St. James's Hall, London, 'That the modern Anglican High Church ritualism was only a copy of the Romanist, under the specious name of Anglicanism; but

These puny efforts of the Popish tool
 Are too contemptuous England to befool !
 They 'll find their doom ; well-regulated mind
 Will brook no slavery of Popish kind !
 Thus there 's another of those dirty tricks
 Of Eighteen hundred and sixty-six !

The Muse left Prussia with her added states,—
 A novelty created by the Fates,
 Unknown in Europe of old-fashion'd dates.
 But union now seems likely to abide,
 And France with Germany may yet provide
 Th' European countries to divide.
 Conflict and much transition mark the year,
 For both are found in either hemisphere :
 While Europe in the North has been the field,
 In South America war its troubles yield ;
 In fact, old settlements have been disturb'd,—
 Grudges paid off, with rancour little curb'd !

Of pestilence and famine, too, the Muse must sing
 In mournful numbers, which such tales will bring :
 That restless evil, cholera design'd,
 Pursues insidious course to scourge mankind !
 Do we ascribe to ways of Providence
 This visitation ? Surely common sense
 Would quickly teach us, that our own neglect,
 And for due cleanliness, a due respect
 Forgotten, aggravates each case :—at home,
 Indeed we have not very far to roam,
 It sorely tried our people in the East
 Of London city. Why ? They were the least
 Aware of what has been its baneful cause ;
 Those people had infringed the common laws
 Of health, and used the waters of the Lea
 As fit and wholesome, while their chastity
 Was gone ; for at some places on their banks,
 The sewage they received, from towns and tanks
 Of filthy ordure, poison'd in their course
 Those streams to which the people had recourse !
 'Tis manifest, indeed, the fault was theirs,
 For all those people used it unawares ;
 Still, such was not the work of Providence,—
 To say the least, 'twas all man's negligence.
 This great fact shows how careful we should be
 Of cleanliness and utmost purity

equally destructive of the saving doctrines of the Reformation.'"—*Daily News*, Feb. 21.

Of diet. Others, too, might be produced,
 In which all cleanliness has been abused,—
 Where habits, feeding, residence, and air,
 Are foul and fetid, and good water rare;
 In such conditions, then for death prepare!

And famine, yet, in England scarcely known,
 In British India misery has sown;
 Where failing crops required providing care;—
 Too late it came, Orissa* can declare,
 And British rule condemn in sad despair!
 But does not British rule evince elsewhere
 Effects which demonstrate the little care
 Or thought bestow'd on natives' little wants,
 Their humble dwellings or their fav'rite haunts?
 Where idle rulers no protection show,
 Justice deny, and treat them as a foe
 They have to banish from the very soil
 Which long they've planted with industrious toil.
 Jamaica! let thy blood-stain'd ground reply!
 England has heard thy murder'd natives' cry
 Of cruel treatment of thy negro race,—
 She's heard their 'plaint; yet with ill-omen'd grace
 Has turn'd her back on those she should befriend,
 And left them with the law their case t' amend!
 Their day will come. But still 'tis strange to leave
 The country's work for others† to achieve;
 "Together met, a voluntary throng,
 "I'll avenge a public and a private wrong."
 To teach a world of despots not so wise,
 That martial law on *all* to exercise,
 The law of England does not authorize.
 Beautiful Jamaica,—misgovern'd place,—
 Could not find justice for her negro race.
 Yet now, since changed is her chief reigning power,
 Fair hopes she has of some more prosperous hour:
 And hopes there are, when those things are redress'd,
 The grandeur of the Law will stand confess'd.

What mean those dire explosions; and that cry
 Where labour delves in darkness, to supply

* The famine is said to have been occasioned by the American civil war,—the merchants endeavouring to supply cotton from Orissa, neglecting rice. As many as 7,500 are said to have perished in a week at one station only.

† The Jamaica Committee and its friends.

‡ The explosions and burnings of coal mines in North Staffordshire and Yorkshire, which occasioned the loss of about 300 lives.

The daily fuel we consume, too fast
 For future generations long to last?
 They mean, alas! that we do not attend
 To Nature's laws; in fact, we do not lend
 Attention due, with care to ventilate
 Those gloomy passages, where damps create
 Danger to those poor mortals who engage,
 In subterranean caverns, to outrage
 Their very lives, and blessings to forego,—
 Daylight exchanging, as they daily grow,
 For daily sustenance and goodly show!

Sad fate it is, to quit the light of day
 For toil in darkness, where no cheering ray
 Lights up the sad and melancholy way;—
 When left is early childhood's simple play,
 To grub and grovel for the collier's bay!
 Yet sadder still when fire takes away
 The little atmosphere they have beneath,
 And leaves them lifeless without air to breathe.

• • • • •
 Yet so it is:—and thus have been destroy'd
 Some hundred lives of people so employ'd!
 'Tis sad this little of the world to see
 Before one's call'd into eternity!
 And here, again, mismanagement of man
 The fault must claim,—for he's without a plan;
 In science compensating all he can
 For what he takes!—he thinks but of his greed;
 Plunders from Nature riches at his need,
 And takes her treasures as he would a weed.
 Yet Nature is content to serve him still,
 And yield her treasures always at his will;—
 Until in cases when her common laws
 He's careless to obey,—she then finds cause
 To visit him with punishment severe,—
 As she has done in this disastrous year.
 How easy to supply, by common shaft,
 The air demanded for a wholesome draught;
 Yet was this neglected,—the reason why,
 The Muse would leave for others to supply.

Another feature of this case remains,
 And much the character of England stains:
 The Muse yet looks for laws to rectify
 That which, 'tis said, the Blue Books testify:
 In those dread caverns which the fuel yield,
 Immersed in darkness is the child reveal'd!

And who, with naught but automatic skill,
 From day to day, sole duty to fulfil,
 Performs one action at its parent's will!
 Is this a fit employment for the mind?
 That ark of reason by kind Heaven design'd
 To ornament and signalize mankind
 From brute creation? There they are bereft
 (Those hapless children, even where they are left,)
 Of all the kindly influence of their play,
 Their little minds t' expand in artful way,
 With blithe companions of the cheerful day;—
 Fellows in play, in learning, and in care,
 Their little trifles they delight to share.
 Is that not task for animal to plod,
 Rather than for "the noblest work of God"?
 Such employment, and in such a place,
 Reflects on England's name but little grace;
 Rather does it become another land,
 Where slavery triumphs rank on either hand.

How shall the timid Muse dare spread her sail
 On that rude sea where politics prevail?
 Where quicksands of opinion, rocks of hue
 Ministerial, are likely to undo
 Th' unwary barque, without a compass sound,
 Free from all deviation's error found:
 Wherein misleading currents range afar
 The ship to wreck beneath malignant star!
 Questions there are which form a huge array,
 That must be treated on from day to day;
 Sufficient too the wisest heads to fill,
 On which to learn what is the nation's will?

That all-engrossing subject of Reform,
 Which took possession of Hyde Park by storm,
 And from its office drove the ruling power,
 Is yet, it seems, the question of the hour:
 Still at the head of a long list it stands,
 And of all others preference commands
 For earliest settlement:—too long deferr'd,
 Since 'tis agreed Reformers should be heard
 In that arena which, we have been told,
 Collective wisdom of the land doth hold,—
 Where the important scenes of politics
 Oft show progressive Leaders in a fix;—
 Where, too, political economist,
 With parliament'ry eloquence can twist
 Arguments, the combative can't resist;—

Where furious, temperate, and sedate,
 Meet in the difficulties of debate;—
 Where slashing leaders of Adullamites*
 Encounter parties, which set them to rights;—
 Where compliments vituperative lend
 Charms to the arguments with which they blend;—
 Though vituperation in compliment,
 Perhaps, is just as seriously meant;
 Where the Useful and Ornamental join,
 With the Oratorical Leader's coin!
 Where Liberal with Conservative may meet,
 And politically enjoy a treat;—
 The nation's general business to discuss,
 Free from all disturbances, or a fuss.
 Yes, 'tis a place, where shine upon the whole
 The feast of reason and the flow of soul!
 Yet with all this what has the Muse to do!
 In this rough sea of ever changing hue;
 Does not Eighteen hundred and Sixty Six,
 Yield subjects more in which she has to mix?
 Another sea there is, on which to sail,
 Where ships contend or run before the gale;
 That sea whereon Neptune is wont to rule,
 That sea on which Britannia went to school.

Of England's navy oft the Muse has sung;
 In glowing numbers oft her deeds have rung.
 In days of yore, how oft her wooden walls,
 Have added gladness to her festive halls!
 Have banish'd from her shore, the invading foe;
 All which, the olden world doth right well know:
 How oft her fleets have been with victory crown'd,
 Let hist'ry say, whose pages yet abound
 With gallant deeds, which to their worth redound.

With "heart of oak" the British navy form'd,
 Through ages past, is now to be deform'd!
 Those wooden walls, which once were England's pride,
 By iron now, are to be cast aside!
 Iron, the British navy has derang'd.
 Those heavy guns in even line arrang'd,
 Tier upon tier in terrible array;
 The pride of England in her proudest day,
 Those noble ships, now, all must pass away!

* Adullamites:—said to be a party created in 1866; also called "The Cave." For the origin of this name, see Samuel, book i., chap. xxii., vers. 1, 2.

Yes! wooden walls,* alas, must all go by,
 And iron now must place of wood supply!
 To Artists' pictures, Britons now must look
 For forms fast disappearing from the book
 Of life! There's Schetky,† Beechey,‡ will assist
 Those wooden walls to guard against the mist
 Of years? and thus "the tooth of Time" resist!

Nor does interminable change stop here,
 At least the change of this eventful year:
 Th' armaments of those fleets no longer serve
 Themselves, nor yet their country, to preserve
 From hostile nations, who can cross the seas,
 And sink our wooden walls whene'er they please:
 Shot that would promptly deal with any wood,
 To strive with iron are no longer good!
 And thus are great guns of the British fleet,
 Nought but popguns, an enemy to meet!
 Momentous change, fraught with effects unheard,
 Invulnerability is now the word!

* Lord H. Lennox, in bringing forward the navy estimates (14th March), stated that there were no less than *fifty-five old wooden line of battle ships*, which had cost the country £8, 250,000. These the Admiralty had determined to dispose of, and thirteen had been sold by auction for £85,000 already. *Sic transit, &c.*

† We repeat the following from a notice which this veteran Artist has lately distributed:—Mr. J. C. Shetky,* Her Majesty's Marine Painter in Ordinary, proposes to publish in a compact form, a series of PHOTOGRAPHS from his professional works, including his recent Pen and Ink Drawings;—as a memento of England's "Wooden Walls," "now changing to iron, and altering in form." We are glad to find that the views expressed by our Muse are so soon to be realized,—and more so still to learn that HER MAJESTY THE QUEEN has graciously accepted the Dedication of this very choice work.

‡ Captain Richard B. Beechey, R.N., well known as one of our most celebrated marine painters.

To be concluded in our next.

ROYAL NATIONAL LIFEBOAT INSTITUTION.

The Prince of Wales and the Lifeboat Service.

Much more than the usual interest which attaches to the annual meetings of the Royal National Lifeboat Institution was felt in the gathering of the 28th of February, from the fact that his Royal Highness the Prince of Wales had graciously consented to take the chair

* Of 11, Kent Terrace, Regent's Park, London.

on the occasion. Every circumstance connected with the annual meeting held on that day contributed to render its result highly satisfactory to the friends and supporters of the institution. The chair was occupied by the Prince of Wales, whose illustrious father had been a warm patron of the institution. The meeting took place in the noble Egyptian Hall of the Mansion House (by the kind permission of the Lord Mayor), which was filled to repletion with ladies and gentlemen. The report of the committee told a tale of uninterrupted success, increased public support, enlarged areas of action for the saving of precious life, and the actual preservation of numerous lives during the past year; and there were, besides, the unusual and wholly unexpected incidents of some munificent sums of money being handed from the body of the meeting to the royal chairman.

At a few minutes before 2h. p.m., the hour fixed for the commencement of the proceedings, his Royal Highness the Prince of Wales arrived at the Mansion House, attended by General Knollys, and was received at the grand portico by the Right Honourable the Lord Mayor, attired in his state robes, and accompanied by the sword-bearer and mace-bearer, Mr. Alderman and Sheriff Waterlow and Mr. Sheriff Lycett, Earl Percy, president of the Royal National Lifeboat Institution, and several noblemen and gentlemen connected with the institution. After Mr. Richard Lewis, barrister-at-law and secretary of the institution, had introduced to his Royal Highness some members of its committee, the Prince was conducted to the dais in the Egyptian Hall, on which, amid the warm and respectful greetings of the goodly company, he took his seat in the Lord Mayor's chair of state, high on the back of which were emblazoned the City arms. On a table in front of his Royal Highness were placed the sword and mace, and a little to the right was a beautiful model of a lifeboat under a glass shade, which, as will be learned below, was presented by the institution to his Royal Highness. And here it may be mentioned that the affability and marked attention of his Royal Highness to Mr. Lewis, who sat on his left, were amongst the most pleasing and instructive characteristics of this important meeting.

His Royal Highness, in opening the proceedings, said:—

“My lord mayor, my lords, ladies, and gentlemen, it affords me very great pleasure to occupy the chair to-day upon so interesting an occasion as the present. Among the many benevolent and charitable institutions of this country, there are, I think, few which demand our sympathy and support, and in which we can feel more interest, than the National Lifeboat Institution. An institution of this kind is an absolute necessity in a great maritime country like ours. It is wholly different in one respect to many other institutions, because, although lives are to be saved, they can in those cases in which this society operates only be saved at the risk of the loss of other lives.

“I am happy to be able to congratulate the institution upon its high state of efficiency at the present moment, and on the fact that by its means very nearly 1000 lives have been saved in the course of the past year. Lifeboats have been given by many benevolent individuals;

some as thankofferings from the friends of those whose lives have been saved, and others in memory of those who are now unhappily no more. I am happy also to be able to say that lifeboats exist not only upon our coasts, but our brave example in this matter has been emulated by many foreign maritime countries, and they have chosen to model their institutions upon our own.

“ I beg upon this occasion to tender, in the name of the institution, our warmest thanks for the kindness and courtesy of the Lord Mayor for allowing us to hold our meeting in this hall. It is, indeed, a peculiarly fitting place in which to hold it, from the intimate connection which must necessarily exist between the City of London and the institution. Half a century ago it originated in this city. In 1852 the late Duke of Northumberland became its president. My lamented father was also the vice-patron, and took the warmest interest in its prosperity. I am happy to say that the respected secretary, Mr. Lewis, occupied that position in 1850, and indeed long before that time. He has held it ever since, and much of the success of the institution is owing to his long experience, and the energetic manner in which he has directed its working has raised the institution to its present high state of efficiency. I should also mention that Mr. Thos. Chapman, Sir Edward Perrott, Bart., Capt. J. R. Ward, R.N., the inspector of lifeboats to the institution, and many other gentlemen, have rendered and do render to the institution most important services. I may say that there are 174 lifeboats afloat, and that in the course of the past year many have been called into existence, at a cost of no less than £17,000, the whole of which has been defrayed by benevolent individuals.

“ Before concluding the brief remarks which I have addressed to you, however imperfectly, on this occasion, I call upon you once more to offer your support to so excellent an institution. I am certain that you must be convinced that it is one which is really a necessity for a great maritime nation like this. I congratulate you that it has arrived at so excellent a state, and I feel quite sure that you would be the last to wish it to decay for the want of support to its funds.”

We will now proceed to recapitulate briefly the great work which has been accomplished during the past year by the National Lifeboat Institution, and to which the Royal Chairman referred in his able speech.

The committee of the institution, with feelings of gratitude and satisfaction, tender their thanks for the generous co-operation of their countrymen in having happily relieved them from all anxiety for the present efficiency of the lifeboat service, so far as the same is dependent on pecuniary aid, and for the confidence that is reposed in them, alike by the public and by the hardy boatmen of our coasts, with whose help they are enabled to effect the benevolent object for which the society was instituted, affords them every encouragement in the prosecution of it.

The institution has, during the past twelve months, continued to receive the noble assistance of inland towns and private individuals,

by the presentation of the entire cost of lifeboats, so that an increasing number of these towns are now represented in this way by their own boats on the coast. By deciding to plant and sustain lifeboats on the coast, they say in effect to our hardy boatmen and fishermen, "By this lifeboat, for the sake of the perishing, we provide you with the means for their rescue, and to your stout hearts and strong hands, under Providence, we leave the rest."

In France, a lifeboat service, founded on the same principles as our own, possesses now no less than 32 lifeboat establishments. These boats are all built in France, on the self-righting plan of this institution.

On a former occasion it was stated that this institution proposed to build and place, at selected stations, a few improved fishing-boats, *provided with safety fittings*, hoping thereby to gradually introduce such improvements in the smaller class of coast fishing-boats as might lead to a considerable diminution in the loss of life, which so frequently occurs from their being overtaken by gales of wind when at a distance from the land. Two of these boats are now completed, and in the hands of trustworthy fishermen on the coast of Scotland, and three more will shortly be ready.

Thirty-three new lifeboats have been built; of these, thirteen have been provided for new stations, and the remainder to replace worn-out or inferior boats. They are stationed as follows:—

ENGLAND.		WALES.	
<i>Northumberland</i> .	Boulmer. Blyth.	<i>Glamorganshire</i> .	Swansea.
<i>Yorkshire</i> . . .	Redcar.	<i>Merionethshire</i> .	Barmouth.
<i>Norfolk</i>	Mundesley. Sheringham.	<i>Carnarvonshire</i> .	Portmadoc.
<i>Suffolk</i>	Gorleston. Southwold.	<i>Anglesey</i>	Llanddwyn.
<i>Kent</i>	Margate.	<i>Cheshire</i>	New Brighton.
<i>Sussex</i>	Winchelsea. Brighton.		
	West Wittering.	SCOTLAND.	
<i>Dorset</i>	Chapman's Pool. Lyme Regis.	<i>Orkney Islands</i> .	Stromness.
<i>Devonshire</i> . .	Brixham.	<i>Elginshire</i> . . .	Lossiemouth.
<i>Cornwall</i> . . .	Braunton. Looe. Fowey. Falmouth. St. Ives.	IRELAND.	
<i>Somerset</i> . . .	Burnham.	<i>Co. Down</i>	Tyrella.
		<i>Dublin</i>	Poolbeg. Skerries.
		<i>Cork</i>	Ballycotton. Queenstown. Courtmacsherry.

Carriages have also been provided for most of the above boats, and boat-houses erected at all the new stations.

The lifeboats of the institution now number one hundred and seventy-four. They have been the means of saving *four hundred and twenty-six* lives during the past twelve months—nearly the whole of them under circumstances when no other description of boat could with safety have been employed in such a service.

Disasters at sea during the past year have been very numerous, and many of them were of a most distressing nature. It is only necessary to refer to the awful catastrophe to the Australian screw steamer *London*, on the 11th of January, 1866,—to the lamentable scenes about the same period in Torbay, and on other parts of the coast,—to awaken sad remembrance of the peculiarly fatal character of these visitations.

No one who has witnessed a storm on our coasts, when the waves are mountains high, can have failed to be impressed with the terrific character of the scene, nor to think with feelings of the liveliest pity on those who are exposed to its fury. While every human effort to render aid is often baffled by the violence of the tempest, the mind is penetrated with a sense of the mighty power of Him who "holdeth the waters in the hollow of His hand," and can say to the tossing billows "Peace, be still!"

The Wreck Register of the Board of Trade informs us that the number of shipwrecks during the past year was 1,787, accompanied by the loss of 602 lives.

Great efforts continue to be made to render every possible assistance to shipwrecked crews.* And this assistance is by no means limited

* The lifeboats of the institution were instrumental in saving, in 1866, the crews of the following wrecked vessels:—

Steamer <i>Bessie</i> , of Hayle	9	Ship <i>Amsterdam</i> , of Sunderland	14
Barque <i>Victorine</i> , of Ostend	1	Brig <i>Mazurka</i> , of Dundee	10
Brig <i>Osep</i> , of Fuime	7	Brig <i>Claudia</i> , of Belfast—saved	
Schooner <i>Black Agnes</i> , of Shields	3	vessel and crew	7
Brigantine <i>Fremad</i> , of Bergen	7	Brig <i>Vesta</i> , of Whitby	7
Schooner <i>Laurel</i> , of Goole	3	Schooner <i>Leader</i> —assisted to save	
Brig <i>Tartar</i> , of Sunderland—		vessel and crew	6
saved vessel and crew	8	Billy-boy <i>Gipsy</i> , of Wisbeach	4
Schooner <i>George</i> , of Goole—saved		Barque <i>Julia</i> , of Liverpool	9
vessel and crew	6	Schooner <i>Peerless</i> , of Aberystwith	5
Ship <i>Thoughtful</i> , of Sunderland	8	Smack <i>Elizabeth</i> , of Cardigan	6
Brig <i>Jessie</i> , of London	8	Smack <i>Jenny Jones</i> , of Barmouth	5
Brig <i>Cheshire Witch</i> , of London	3	Brigantine <i>Pearl</i> , of Montrose—	
Schooner <i>Zephyr</i> , of Banff	6	saved vessel	
Barque <i>Lymon Cann</i> , of St. John's	1	Schooner <i>Ann</i> , of Torquay	3
Ship <i>Iron Crown</i> , of Liverpool—		Ship <i>Alarm</i> , of Belfast	11
rendered assistance		Brig <i>Providentia</i> , of Svelvig	8
Brigantine <i>Isabella</i> , of Water-		Smack <i>Shamrock</i> , of Wexford	6
ford—assisted to save vessel and		<i>Mary and Elizabeth</i> , of Whitby	11
crew	5	Schooner <i>Treaty</i> , of Goole—saved	
Brig <i>Pero</i> , of Whitby	7	vessel and crew	4
Barque <i>Reliance</i> , of Whitby	9	Steamer <i>Carlton</i> , of Newcastle—	
Smack <i>Lily</i> , of Wexford	6	saved vessel and crew	12
Schooner <i>Sarah Ann</i> , of Jersey—		Yacht <i>Dagmar</i> , of Middlesboro'	2
saved vessel and crew	6	Ship <i>Mary Roe</i> , of Quebec	7
Steamer <i>Lady Beatrix</i> , of Sunder-		Lugger <i>Betsy Ann</i> , of Port Gor-	
land—saved vessel		don	6
Brig <i>Altivo</i> , of Lisbon	10	Brigantine <i>Jeune Francois</i> —	
Flat <i>Morning Star</i> , of Carnarvon	3	assisted to save vessel and crew	6
Galliot <i>Johanna</i> , of Soon, Norway	7	Brig <i>Nicholas Harvey</i> , of Hayle	8

to the efforts of our hardy lifeboat men. Men of all ranks come forward, not only to lend a helping hand, but also freely to risk their own lives to save the life of the drowning mariner.

As illustrative of this gratifying fact, the committee have much satisfaction in referring to the noble exertions of the Rev. Chas. Cobb, of Dymchurch, Kent, in rescuing from the rigging, on Sunday morning, the 6th of January last, one of the crew of the French lugger *Courrier de Dieppe*, which was wrecked off Dymchurch in a strong gale of wind and heavy sea. The gold medallion of the institution has been voted to Mr. Cobb, in testimony of his heroic exertions, and the silver medal to John Batist, the coastguard-man, who bravely helped Mr. Cobb on that eventful occasion.

The committee would also refer to the exertions, on the same day and at about the same hour, of the Rev. P. Vyvyan Robinson, of Llandwednack, who, while proceeding to church, heard of a fearful

Brigantine <i>Columbia</i> , of Carnarvon	5	Barque <i>Caroline Elizabeth</i> , of London	13
Pilot Coble of Blakeney—saved coble and crew	3	Norwegian Barque <i>Inga</i>	13
Fishing Smack <i>Favourite</i> , of Peel, Isle of Man	8	Ship <i>Himalaya</i> , of Liverpool—rendered assistance.	2
Barque <i>Voluna</i> , of Liverpool—saved vessel	5	Smack <i>Cymro</i> , of Almwch	2
Barque <i>Coriven</i> , of Londonderry—rendered assistance.	5	Lugger <i>William and Mary</i> , of Yarmouth	1
Schooner <i>Margaret Caldwell</i> , of Portrush	6	Brigantine <i>Zillah</i> —saved vessel and crew	8
Sloop <i>Pomona</i> , of Ipswich	2	Barque <i>Indus</i> , of Maitland, N.S.	2
Sloop <i>Superior</i> , of Goole	2	Brig <i>George</i> , of Lowestoft	6
Sloop <i>Queen</i> , of Goole	3	Shore Boat, of Wexford	9
Sloop <i>Cupid</i> , of Goole	4	Schooner <i>Lion</i> , of Goole	5
Schooner <i>Anaconda</i> , of Lerwick	5	Brig <i>Kalpie</i> , of London—saved vessel and crew	8
Schooner <i>Swann</i> , of Goole	4	Total Lives saved in 1866 by Lifeboats	426
Steamer <i>Buda</i> , of Leith—assisted to save vessel and crew.	4	During the same period the Institution has granted Rewards for saving Lives by Fishing and other Boats	495
Schooner <i>Coronation</i> , of London	4	Grand Total	921
Schooner <i>Tay</i> , of Dundee	5		
Barque <i>Salmi</i> —assisted to save vessel and crew	16		
Barque <i>Margaret and Jane</i> , of Shields	8		

General Summary for 1866.

Number of lives rescued by lifeboats, in addition to 17 vessels saved by them . . . . .	..	421	..	
Number of lives saved by shoreboats, &c. . . . .	..	495	..	
Amount of pecuniary rewards for saving life during the year . . . . .	..	..	£2,173	2 3
Honorary rewards: Silver medals	16	..	..
Votes of thanks on vellum and parchment	25	..	..
Total	41	921	£2,173	2 3

shipwreck at Mullion Cove, six miles from the Lizard lifeboat station. He immediately ordered the lifeboat out, and proceeded overland with it; but unfortunately it arrived too late, the whole of the crew having, sad to say, unfortunately previously perished.

The committee have decided to establish forthwith a lifeboat station at Mullion Cove. The Wesleyan Methodists having collected the cost of a lifeboat, in memory of the late Rev. D. J. Draper, an able and zealous minister of that connection in Australia, who unhappily perished in the ship *London*, in the Bay of Biscay, last year, and who was a native of Cornwall, the *Draper* lifeboat will be placed at Mullion Cove.

In addition to the large number of 426 lives and 17 vessels saved exclusively by the lifeboats of the institution, 495 lives were rescued last year by fishing-boats and other means,—a result arising from the encouragement given by the institution in rewarding all who are instrumental in saving life from shipwreck on our coasts.

This large number of 921 lives is independent of 350 lives saved by the rocket apparatus, worked by the coastguard, and which is provided by the Board of Trade, by which apparatus 123 lives were saved in a single instance, on the 3rd of December last, from the wreck of the Swedish man-of-war *Oradd*. That department continues to co-operate cordially with the National Lifeboat Institution in carrying out the great and national work it has undertaken to perform, and which has hitherto proved so successful.

The total number of lives saved during the forty-three years from the establishment of the institution in 1824 to the end of the year 1866, either by its lifeboats or by special exertions for which it has granted rewards, is as follows:—

In the Year	No. of Lives Saved.	In the Year	No. of Lives Saved.	In the Year	No. of Lives Saved.
1824	124	1839	279	1854	355
1825	218	1840	353	1855	406
1826	175	1841	128	1856	473
1827	163	1842	276	1857	374
1828	301	1843	236	1858	427
1829	463	1844	193	1859	499
1830	372	1845	235	1860	455
1831	287	1846	134	1861	424
1832	310	1847	157	1862	574
1833	449	1848	123	1863	714
1834	214	1849	209	1864	698
1835	364	1850	470	1865	714
1836	225	1851	230	1866	921
1837	272	1852	773		
1838	456	1853	678	Total	15,901

The committee wish to express their thankfulness for this glorious harvest of human lives saved from a watery grave.

In the presence of facts like these, the Lifeboat Institution need have no misgiving in respect to a continuance of that pecuniary support which has hitherto enabled it to pursue with unabated vigour and

success the great and benevolent objects for the promotion of which it was established more than forty-three years ago.

During the past year, 16 silver medals, 25 votes of thanks inscribed on vellum and parchment, and £2,173 have been granted by the institution for saving the lives of 921 persons by lifeboats, shore and fishing boats, and other means, on the coasts and outlying banks of the United Kingdom.

Since the formation of the institution it has expended on lifeboat establishments £165,700, and has voted 83 gold and 772 silver medals for saving life, and pecuniary rewards to the amount of £24,450.

The committee acknowledge the continued kind co-operation of the local branch committees, which constitute so important a portion of the machinery for the supervision of the several lifeboat establishments of the institution. The Board of Trade and the coastguard also help the institution in every possible way.

The total amount of receipts during the year 1866 has been £41,718 1s. 4d.; and the committee are grateful to be able again to announce, that of this sum no less than £16,974 12s. 4d. were special gifts to defray the cost of 35 lifeboats. Such munificence is perhaps unparalleled in the history of a benevolent society.

Liberal legacies have also been bequeathed to the institution during the past twelve months.

During the past year £18,744 12s. 2d. were expended on additional lifeboats, transporting carriages, boat houses, and necessary gear; £7,081 13s. 3d. on the expenses of repairs, painting, refitting, &c.; and £6,022 13s. 10d. in rewards for services to shipwrecked crews, coxswains' salaries, and quarterly practice of the boats' crews; £1,072 18s. for five safety fishing boats and their gear; making altogether, including liabilities amounting to £7,472 9s. for lifeboat stations now in course of formation, and other expenses, a total expenditure of £42,344 15s. 10d.

For a considerable saving in the item of transport to their stations of new lifeboats and carriages, the committee have again to express their thanks to the several railway and steampacket companies, who have most liberally conveyed them to all parts of the United Kingdom, free of charge.

The items of receipts and expenditure are minutely detailed in the financial statement annexed to the report, audited, as usual, by a public accountant.

The institution has now under its charge 174 boats, and it is only reasonable to expect, that in such a fleet frequent damages will take place, in addition to the fact that boats will decay every year from natural causes.

The operations of the institution extend all over the British Isles, and it pledges, with the continued blessing of Almighty God and the sympathy and support of the British public, to leave no effort untried that can assist in any way in lessening the annual loss of life on our shores.

Various resolutions, expressive of sympathy and support on behalf

of the institution, were afterwards moved and seconded by the following noblemen and gentlemen:—The Right Hon. Sir John Pakington, Bart., G.C.B., M.P., V.P., First Lord of the Admiralty; Admiral the Earl of Hardwicke, V.P.; the Right Hon. Sir Stafford Northcote, Bart., C.B., President of the Board of Trade; Lord Alfred Paget; the Right Hon. G. J. Goschen, M.P.; Sir Edward Perrott, Bart., V.P.; Vice-Admiral Sir Alexander Milne, K.C.B., a Lord Commissioner of the Admiralty; General Knollys, K.H.; his Grace the Duke of St. Alban's; T. B. Potter, Esq., M.P., V.P.; the Right Hon. Earl Percy, P.C., President of the Institution; and Thomas Baring, Esq., M.P., F.R.S., V.P. We append the last resolution, and the response of his Royal Highness thereto.

Earl Percy moved,—“That the loyal and respectful thanks of this meeting be given to his Royal Highness the Prince of Wales, K.G., for so graciously and ably presiding over the forty-third annual meeting of the Royal National Lifeboat Institution; and thus, by his countenance and support, rendering to the philanthropic cause in which it is so actively engaged the greatest service.” The noble lord asked his Royal Highness to accept the model of a lifeboat which had been contributed for by the City of Manchester, and was placed on the shore of his (Earl Percy's) native county at Berwick-upon-Tweed. It had already been instrumental in saving between thirty and forty lives.

Mr. T. Baring, M.P., seconded the resolution, which was carried amid loud cheering.

His Royal Highness: My lord mayor, my lords, ladies, and gentlemen, I tender you my warmest thanks for the very kind manner in which the noble lord has moved his resolution, and for that in which it has been seconded by Mr. Baring. I beg also to thank you all for the great kindness with which you have supported me on this occasion. So much has been said, so many able speeches have been made, and so much time has already been occupied by the proceedings of the meeting, that I will not trouble you with any further remarks. But I have not only to thank you, my lord (Earl Percy), and the other members of this institution, for your kindness in presenting me with this model, but also to accept it with peculiar pleasure as it is named after my eldest son. And I hope that in time, when he grows up, he will recollect that in his infancy a lifeboat was named after him, and that in the three years after his birth it was instrumental in saving from thirty to forty lives.

His Royal Highness was then conducted from the chair by the Lord Mayor and left the hall, the entire company standing and cheering him as he went out; and the proceedings terminated.

LIGHTS ON BOARD OCEAN STEAMERS.

The following, which we find in a Cape paper, is the letter alluded to by our correspondent in this number,—whose plan is well worthy of attention.—ED. *N. M.*

Oct. 8th, 1859.

Sir,—My object in addressing you is to revive the subject as to the best positions for lights on board of ocean steamvessels, first urged by me in the pages of the *Singapore Straits Times*, shortly after the collision of the steamers *Erin* and *Pacha* in the Straits of Malacca, resulting in the total loss of the latter, with a portion of her crew and a large amount of treasure. It would be superfluous for me to attempt to enumerate the enormous losses that have taken place from the defective position of lights; suffice it to say, that they have all more or less originated in the impossibility of steamers knowing each other's direct course when nearing from nearly opposite points; and this will be the case so long as steamers can see each other's lights as now placed at the sides, either from the paddle-boxes or otherwise. I maintain that a steamer's (both sides) lights can be seen at the same time one and a half point from either bow, the masthead light being of little use to show the true position; and from this cause the danger arises.

To prevent this, I beg to submit the following (and which must be considered as particularly applicable to the *Great Eastern*, in order not to interfere at present with the arrangements for lights as now fixed on board ocean steamvessels:—The *Great Eastern* should have) a powerful plain light fixed on the foremast, and a powerful (blue tinged) light fixed on her second mast in the most prominent place, and at a good elevation, nearly horizontal. By this simple but valuable guide, a ship's position with respect to the *Great Eastern* would be at once known, and any danger averted, even allowing a ship to be in her direct track, as the lights in one would immediately show her the danger, whilst with the lights open she would be beyond her dangerous influence, the masthead light materially assisting the judgment; whereas with the present paddlebox lights a steam or sailing vessel may be steering across the course of the *Great Eastern*, with the risk of collision, from the fact of not knowing on which bow she may be, the masthead light being of little or no service until one of the side lights is hid from view.

From the above I maintain that the *Great Eastern* must be considered dangerous to mercantile interests, without lights are placed, as pointed out by me, to warn other ships of a perilous position. I need scarcely add, that the effect of a collision which would utterly destroy a large ship would not be felt by those on board the *Great Eastern*, and to these I feel confident we may look forward, without the remedy I have pointed out is effectually applied, before she attempts to cross the Atlantic. I consider the subject of such importance that I am

induced to lay it before you, in the hope that its merits will dawn on the eye of the public through the columns of your valuable and influential journal.

I am, sir, your obedient servant,

N. HECKFORD.

To the Editor of the Shipping and Mercantile Gazette.

THE PERILS OF SPONGE-DIVING.

In his recent work on Crete,* Captain Spratt gives the following account of Sponge-diving. We considered that the Pearl Fishery of Ceylon was about as perilous an operation as need be, but the great depth (30 fathoms) of the choice sponges seems to put the powers of the diver to a greater test than that:—

“The mode of operation preparatory to a dive is very peculiar and interesting. The diver whose turn it is takes his seat on the deck of the vessel, at either the bow or the stern, and, placing by his side a large flat slab of marble weighing about 25 lb., to which is attached a rope of the proper length and thickness ($1\frac{1}{2}$ inch), he then strips and is left by his companions to prepare himself. This seems to consist in devoting a certain time to clearing the passages of his lungs by expectoration, and highly inflating them afterwards, thus oxydizing his blood very highly by a repetition of deep inspirations. The operation lasts from five to ten minutes or more, according to the depth; and during it the operator is never interfered with by his companions, and seldom speaks or is spoken to; he is simply watched by two of them, but at a little distance, and they never venture to urge him or to distract him in any way during the process. It seems to a spectator as if the diver were going through a sort of mysterious ceremony or incantation. When, from some sensation known only to himself after these repeated long-drawn and heavy inspirations, he deems the fitting moment to have arrived, he seizes the slab of marble, and, after crossing himself and uttering a prayer, plunges with it like a returning dolphin into the sea and rapidly descends. The stone is always held during the descent directly in front of the head, at arm's length, and so as to offer as little resistance as possible; and by varying its inclination, it acts likewise as a rudder, causing the descent to be more or less vertical, as desired by the diver. As soon as he reaches the bottom, he places the stone under his arm to keep himself down, and then walks about upon the rock, or crawls under its ledges, stuffing the sponges into a netted-bag with a hooped mouth, which is strung round his neck to receive them; but he holds firmly to the stone or rope all the while, as his safeguard for returning and for making the known signal at the time he desires it. Now let us notice the proceedings of his

* *Travels and Researches in Crete.* By Captain T. A. B. Spratt, R.N. 2 vols. (Van Voorst.)

companions in the boat floating some 20 or 30 fathoms above him. The two men who were nearest to him previously to his making the dive, but who systematically seem to place themselves so as to prevent him from conceiving the idea of being impatiently watched by them whilst undergoing the preparation, spring to their feet as soon as he disappears, and rush to the rope, which one of them then holds in his hand, veering it out or shortening it in as the diver moves about upon the bottom ; and as soon as the signal indicative of his wish to return is felt, they commence hauling up the rope with great energy and earnestness, and in a way calculated to ensure the greatest expedition of ascent, since the overstay of a few seconds may be a point of life or death to the diver.

“The hauling up is thus effected :—The assistant who has hold of the rope, awaiting the signal, first reaches down with both hands as low as he can, and, there grasping the rope, with a great bodily effort raises it up to nearly arm’s length over his head ; the second assistant is then prepared to make his grasp as low down as he can reach, and does the same, and so on the two alternately, and by a fathom or more at a time and with great rapidity, bring the anxious diver to the surface. A heavy blow from his nostrils, to expel the water and exhausted air, indicates to his comrades that he is conscious and breathes. A word or two is then spoken by one of his companions to encourage him, if he seems much distressed, as is often the case ; and the hearing of the voice is said by them to be a great support at the moment of their greatest state of exhaustion. A few seconds’ rest at the surface, and then the diver returns into the boat to recover, generally putting on an under garment or jacket, to assist the restoration of the animal heat he has lost, and to prevent the loss of more by the too rapid evaporation of the water from his body. Such is the trying life of a Levantine sponge-diver ; and doubtless there are very few of us who have any idea of what a fellow-creature has suffered in procuring that little article which has become a necessity of our toilet-table, and the luxury of our morning ablutions.”

A WAIF FROM THE PACIFIC.

Are you a traveller ? Perhaps you are. You are perhaps a great traveller. You have, perhaps, boiled eggs in the bason of the great Geyser, and held your nose (if it should happen that this conspicuous and useful ornament of the human face divine is of conspicuous proportions), within the grasp of your hand, to keep it from freezing. Perhaps you have bathed in the briny waves of the Dead Sea, pickling yourself down for your own especial preservation, *a la* Captain Lynch. You have travelled perhaps through the Rocky Mountains, smoking yourself in wigwams to preserve your lungs against asthma and con-

sumption. You have travelled perhaps in those "palaces propelled by steam" on the "busum" of the "father of rivers," where you imbibed iced juleps sitting on explosive boiler decks, with your feet hanging over the railing and your head reclining at an angle of 45, listening to instructive discourses on the game of seven up, dreaming nightly sweet dreams of being blown sky-high and landing in the most uncomfortable and most unimaginable places, or having your body perforated in the most shocking manner by Arkansas toothpicks. If so, you are undeniably a great traveller. Perhaps you imagine that you have tested all the delights of travel? What presumption!

There is a species of travel yet left for your experience and for your "store-house of pleasant memories" unknown to you. My advice is to enter immediately upon a course of these most delightful of all travels—inter-island travel. You have travelled in the old world and in the new world, and will very likely some of these days take a notion to travel to unknown worlds and worlds to come, but by all means travel first in the Hawaiian world. Hawaiian world! Why not have a world of our own? We are certainly entitled to it by neither belonging to the old world nor the new world, nor the world to come, nor any other kind of world, with perhaps the exception of the Insect World. And there is such a charm and such a delight in travelling over one's own world, from shore to shore, from star to star, that it is well worth to preserve a photograph of it for the sake of the future historian in the chronicles of the *Commercial Advertiser*. My own experiences are so very limited that I would by no means attempt to give a sketch of the pleasures of travel, but our mutual friend Pheelinks, who only lately entered upon what he calls "the pursuit of knowledge under difficulties," which means inter-island travel, is perfectly able to give a vivid description; but having, had a "serious accident" to his what he calls scribbling finger, by wounding the said digit with a mullet bone while eating poi and raw fish with "ye natyves" in experimenting on the digestive powers, has engaged me as amanuensis to set down in "black and white" (his own words) his experiences. I write under the dictation of Pheelinks himself. You know Pheelinks so well from his numerous writings, that a further introduction is unnecessary.

"You know, my boy," says Pheelinks, (P. always calls me his boy when animated), "my philanthropic ambition, my search after knowledge. I concluded to visit continent after continent of our world, exploring the continents of Kauai, Maui, Hayaii, Niihau and Lanai. I am in search of information, bound to make new discoveries for the benefit of mankind and the inhabitants of this world of ours in especial. I am hammering at rocks, I am picking up all sorts of pebbles, dig holes into mountain sides, and have commenced washing the dirt of the rivers till yet, without any other results than making dirty water, but I hope yet to discover veins of the precious ore, perhaps diamonds. Why not, I ask you. I am correct in my philanthropic views, do you assent? (Of course I scented.) I am anxious to develop the agricultural resources to the utmost extent. I shall yet succeed in raising

self-baking beans, in making sugar from the tops and leaves of the cane, by which process more than 215 per cent. will be added to the productive power of our glorious common country, and I am now engaged to invent apparatus by which sugar can be manufactured without fuel or fire, by gas alone. I propose to you to take a 'plid' on the success of this most glorious enterprise." We phidded.

"I engaged a passage," P. continued, his features all aglow from the warmth of his noble feelings after the cooling phid, "in Honolulu, the metropolis, the centre of our world, on board of one of those magnificent packets, called coasters. I stipulated simply a cabin passage, being, as you know, my boy, very modest in my pretensions. The hour of departure was 4 o'clock, precisely 4 o'clock. I was most anxiously engaged in preparations for this interesting voyage on the tremendous depths of the ocean. I packed my trunk in the most scientific manner, putting the most needed articles of apparel below and a mosquito netting on top to have it handy during cool nights. I shook hands with everybody whom I met in the streets and on "the corner." I smiled with many friends sentimentally, smiles meditative on the future. At half-past eight I kissed an aged individual of the native female persuasion by mistake, and begged pardon in hurried but respectful terms. I am happy to say it was granted. I hastened to the wharf in a dreadful state of perspiration and was ready to leap on board the packet, when a stern mariner in a flaming red shirt stopped me with the tremendous ejaculation, '*Apopo! hora eiva!*'—Nine o'clock! I retired. My sentimental feelings had been worked up to the highest pitch by so many leave takings and "fare the wells." My sleep that night was disturbed. My dreams were but a repetition of partings. On awakening I found actually a small table-spoonful of mosquitoes on my cheeks, drowned in my tears, that I had shed while dreaming. Was it not affecting? (I said yes; P. was satisfied.) At precisely fifteen minutes to nine I found myself once more on the wharf in a very perspiring condition. Many leavetakings had of course been renewed during the past hours, smiles had been resumed, I was much affected. There was a great effort at noise and business on board the packet. I sat down on a hot stone in the broiling sun to cool myself. The departure was announced to be *mamuli*. I was patient, very, and recalling the many incidents of the last few hours, time flew fast. At 10 o'clock the departure was postponed till 12 o'clock without fail. I retired again. Leavetakings were gone through for the third time, smiles became more sentimental and affecting. My feelings were tremendous,

"At 12 o'clock precisely I once more repaired to the wharf in a highly feverish and nervous state of mind. I sat down near the gangway. The packet was really going to start *mamuli*, directly, by and by. I was satisfied. A large crowd assembled near the vessel and I began to consider it dangerous to put to sea with such a number of passengers, but as a constant stream was going on board and as many going off board, it was a difficult task to make a correct estimate. Numerous females of 'ye natyves' were frequently leaving the vessel

in haste, squat down for a moment on the wharf, to press once more the friendly shore and return as quickly. I was much affected at this sign of their love of country. Is it not beautiful? (I said very!) An individual with a very dirty face brought two beef-steaks on board. On inquiry I learned that he was the steward, providing provisions for the foreign passengers. A very large number of fish of the species mullet were conveyed on board by a number of 'ye natyves' calabashes of all dimensions, called *poi pots*, travelled constantly back and forward. Boxes, lumber, bags of potatoes, bundles of shingles, began to lumber the deck.

"At 3 o'clock the hour of departure drew nigh. The crowd increased. Faces came in frequent contact with faces, noses butted noses, and rebutted until noses multiplied to such an extent, that it was hard to believe that each face claimed only one as its original birthright. Tears began to flow. A wail arose here and there, going through the whole scale from *c* to *fis*, and from *moll* into *dur*. I became nervous and much affected. My eyes filled with tears at witnessing those expressive scenes of grief. The order was given to cast off the fastenings. Gymnastic exercises in jumping commenced at a fearful rate, crowds jumping on board and off board, till I became dizzy. The vessel began to swing slowly from the wharf. I heard some loud screaming. Three young female natives jumped under strong excitement on the wharf, squatted once more on the "sacred soil" and jumped back. I leaped on board. The foreign passengers followed. They were a gentleman very red in the face and very weak apparently in his legs; another gentleman and lady, lovely lady, who,——but, my boy, I am at last on board, let us phid on a pleasant voyage."

Of course we phidded. P. shut his eyes, I sat patiently waiting, thinking that his great mind was revelling in pleasant memories. Alas! P. was fast asleep, I knew from the tremendous snores which issued from his splendid proboscis. As soon as he awakes I shall send you the continuance of his travels.

THE SCUTTLE OF THE SEVERN.

The extraordinary circumstances connected with the loss of the ship *Severn*, and the conviction of the four prisoners Webb, Holdsworth, Berwick and Dean, of having been guilty of wilfully scuttling that vessel, will be fresh in the recollection of the public, and since the conviction of these prisoners some facts have come to light which will doubtless be read with interest. It appears that before the removal of the prisoners from Newgate to undergo the sentences of penal servitude, Webb, who, it will be remembered, was charged with being the principal in the transaction, sent for Captain Drummond, the gentleman who conducted the prosecution on behalf of Lloyds' Salvage Association, and he at once obtained an order from the magistrates at the Mansion-house to visit the prisoner. Webb then,

without any inducement or promise being made to him, entered into a long statement in relation to the crime of which he had been convicted, the effect of which was to amount to a full confession of his guilt. He states that he was perfectly well aware that it was intended to destroy the vessel, and that he and his fellow-prisoners were in constant communication with each other upon the subject, and as to the best mode of carrying out their object. He states that he was led to believe that the transaction would never be suspected, and that they were sure to succeed.

It will be remembered that, according to the evidence adduced at the trial, the loss of the vessel was actually occasioned by the three large holes that were bored in the stern of the *Severn*, and, although an attempt was made in cross-examination to create some doubt as to whether these holes really existed, it is satisfactory to be enabled to state that the prisoner admits that the evidence of the witnesses with regard to this matter was the truth, and that he bored the three holes almost immediately after the vessel got to sea, and that he placed plugs in them which he could remove and replace again at his pleasure. In this way the water was let into the vessel, and the leak was increased or diminished, until a fitting opportunity occurred to carry out the full object. The crime, it appears, was not intended to be committed at so early a period as it was, if one of the plugs, as was stated at the trial, had not been accidentally broken by the prisoner in the inner skin of the vessel, and, as he could not stop this hole, he pulled out the other two plugs, and the fate of the vessel was soon sealed.

It will be also recollected that it was suggested at the trial, that the prisoner Webb had been the means of casting away a vessel called the *Jane Brown*, upon which vessel a large sum of money was received from the underwriters; and the prisoner, in the course of his interview with Captain Drummond, admitted the truth of the charge that was made against him in reference to this vessel, and made an extraordinary statement as to the mode in which the crime was committed. The *Jane Brown*, it appeared, was chartered to convey a freight of coal from Glasgow to the Havannah, and it appears that while the vessel was lying at Glasgow, a carpenter was employed to erect an artificial bulk-head in the aft part of the hold, which was directly under the mate's cabin, and thus a clear space was left in the hold. Soon after the *Jane Brown* sailed a hole was cut through the floor of the cabin, and ropes were fitted by which a man could descend into the space in the hold which had been made vacant by the bulk-head, and when the proper time arrived holes were actually bored through the bottom of the vessel, and she was consigned to summary destruction. The prisoner expresses his deep regret for his conduct, but it is not expected that any statement he may make will have the effect of inducing the authorities to mitigate the sentence passed upon him, namely, ten years' penal servitude. The whole of the prisoners have been removed to the Model Prison at Pentonville to undergo the sentences respectively passed upon them.

AZIMUTH TABLE.

H.M.S. Britannia, Dartmouth, March 19th.

Dear Sir,—If you think the enclosed little Azimuth Table worth insertion in your Magazine, perhaps you will kindly make room for it, as it may be found useful by some of your nautical readers.

I remain, &c.,

A. C. JOHNSON.

To the Editor of the Nautical Magazine.

Arguments:—Apparent Time from Noon, and Altitude.

Dist.			Alt			Dist.			Alt			Dist.			Alt			Dist.			Alt		
h.	m.	°	h.	m.	°	h.	m.	°	h.	m.	°	h.	m.	°	h.	m.	°	h.	m.	°	h.	m.	°
0	0	0	1	12	77	2	24	146	3	36	4	48	202	3	36	4	48	237	8	18			
	4	4	16	81	4	28	150	5	40	204	8	52	239	1	17								
	8	8	20	85	5	32	153	9	44	207	3	56	240	3	16								
	12	13	24	89	6	36	157	3	48	209	7	5	241	5	15								
	16	17	28	93	7	40	160	7	52	212	0	4	242	6	14								
	20	21	32	97	7	44	164	0	56	214	3	8	243	6	13								
	24	26	36	101	7	48	167	3	0	216	5	12	244	5	12								
	28	30	40	105	7	52	170	5	4	218	7	16	245	4	11								
	32	34	44	109	6	56	173	7	8	220	7	20	246	2	10								
	36	39	48	113	5	0	176	8	12	222	8	24	246	9	9								
	40	43	52	117	4	4	179	8	16	224	7	28	247	6	8								
	44	47	56	121	2	8	182	8	20	226	6	32	248	1	7								
	48	52	0	125	0	12	185	8	24	228	4	36	248	6	6								
	52	56	4	128	8	16	188	7	28	230	1	40	249	0	5								
	56	60	8	132	5	20	191	5	32	231	8	44	249	4	4								
1	0	64	12	136	2	24	194	3	36	233	4	48	249	7	3								
	4	68	16	139	8	28	197	0	40	234	9	52	249	8	2								
	8	73	20	143	4	32	199	7	44	236	4	56	249	8	1								
												6	0	250	0								

Explanation.

I.—For the apparent time from Noon, take out N.

II.—With N. as dist. and co-declin. as course, find dep. (trav. table.)

III.—For the altitude take out the dist. The course corresponding to this dist. and the above dep. will be the Azimuth. Mark it N. or S. according as the sun is N. or S. of the prime vertical, and E. or W. according as the time is A.M. or P.M.

Example:—Given, app. time from Noon, 2h. 32m.; Sun's alt., 20°; Dec. 10°; (Sun East of meridian, and South of the prime vertical.)

(1) For 2h. 32m. N. is 153·9 or 154.

(2) 154 as dist. and co-declin. 80° (as course) in trav. tab. give 151·7 dep.

(3) For alt. 20° in the foregoing table, the dist. is 234·9 or 235. Then dist. 235, and dep. 151·7 in trav. tab. make the course 40°.

Therefore the Azimuth is S. 40° E.

If the Amplitude be required:—for the app. time of sunrise or sunset, and alt. 0° , find the Azimuth as above; its complement will be the Amplitude.

Note.—The sun rises and sets N. or S. of the prime vertical, according as the declination is N. or S., and continues on the same side of it while above the horizon, except only when the latitude is greater than the declination (both being of the *same* name) in which case the table found in all treatises on nautical astronomy will show at what time he passes the prime vertical.

This Azimuth table gives results sufficiently near for determining the variation or deviation at sea.

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 31, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 152.)

All bearings are magnetic.

Name.	Place.	Position.	F. or R.	Ht. in Feet	Dist in Mls.	[Remarks, &c. Bearings Magnetic.]
13. Port Louis	Mauritius	Lightvessel	F.	..	9	Est. 24th May, 1867. (a.)
14. Peter Port, S. entrance	Guernsey	East end of Castle breakwater	F.	46	9	Est. 1st March, 1867. (b.)
15. San Francisco River, North P. of entrance	Brasil	$10^{\circ} 27' S.$, $36^{\circ} 21' W.$	F.	69	11	Est. 1st February, 1867.
16. Pekalongan	Java Island, North coast	$6^{\circ} 54' S.$, $109^{\circ} 48' E.$	F.	26	8	Est. 27th September, 1866. For position of roadstead.

F. Fixed. Fd. Fixed and Flashing. R. Revolving. I. Intermitting. Est. Established.

(a.) 13.—The vessel is painted white, and will be moored in 15 fathoms water a little to the N.W. of the present well known Bell buoy, with the following bearings:—Extr. of land to north, N.E.b.N.; Extr. of land to west, W.S.W.; Flagstaff on Fort George, S.E. $\frac{1}{2}$ S.

The light being flashing at short intervals, will distinguish it from the rev. on Flat island.

Directions.—From the northward, after rounding Cannonier point, be careful not to bring that light to the westward of Flat I. light till the floating light near the Bell buoy is seen; then steer for the latter on a S.S.W. $\frac{1}{4}$ W. bearing, and anchor on that bearing from half a mile to a mile from the light.

From westward steer for floating light on an E.b.N. $\frac{1}{4}$ N. bearing, and either anchor half a mile from her on that bearing or further northward as convenient.

Caution.—The mooring chain of the lightvessel runs about 160 fathoms in a N.N.W. direction; be careful not to hook it.

The depths at the anchorage vary from 12 to 20 fathoms.

Variation $9^{\circ} 1'$ Westerly in 1867.

(b.) 14.—It shows as a bright light bearing from North, round by East, to South, and as a dim light, landward, from South, round by West, to North.

The light is 203 yards from Castle Cornet, and from it,—St. Martin's point bears S.W.b.S. $\frac{1}{4}$ S., distant 2 miles; Vale Castle bears N.E. $\frac{1}{4}$ N., nearly 2 miles; Windmill on Sark bears S.E.b.E., $6\frac{1}{2}$ miles; Old Harbour light bears N.W.b.W. $\frac{3}{4}$ W., 4 cables; Lower heads buoy bears S.E.b.S., $2\frac{1}{2}$ miles; Brehon bears E.b.N. $\frac{1}{4}$ N., $1\frac{1}{2}$ miles.

Also, from the 1st day of March 1867 the old light at the entrance of the inner harbour will be coloured *red*.

Variation $21^{\circ} 20'$ Westerly in 1867.

The *Dépôt des Cartes et Plans* of Paris has given the following notices.

SOURABAYA ROADS.—The minister of marine in Holland has received notice from the Indian Government that on the 21st September 1866 the North channel of Sourabaya has been marked by Herbert's buoys, to the number of twelve: they are several feet high and in the following positions:—

- No. I. White. In the place of the outer black buoy on Jansen's plan of the channel of Sourabaya.
- No. II. White. Two miles due South of No. I.
- No. III. White. To S. $\frac{1}{2}$ W. of No. II., about same distance.
- No. IV. White. S. 17° W. of No. III., and at same distance.
- No. V. White. To S. $\frac{1}{2}$ E. of No. IV., about same distance, nearly due East of Fort Erfrins, where the above chart shows a black buoy.
- No. VI. White. On the Pisangs.
- No. VII. Black. To E. $19^{\circ} 35'$ S. of No. I., about two miles.
- No. VIII. Black. S.S.W. from No. VII., and two good miles.
- No. IX. Black. S.b.W. from No. VIII., rather over two miles.
- No. X. Black. S. 4° E. from No. IX., same distance.
- No. XI. Black. Near Tandjongan, S. 40° W., about half a mile from that point.
- No. XII. Red. On the Drievadem Bank of 3 fathoms, between Tanjong Ajer and Tandjongan.

Besides the abovenamed buoys mariners will remember that there is a buoy in the channel on the wreck of the barque *Asuttanie*.

Hitherto the outer buoy of the North channel on its western side was *black*, in the form of an anchor buoy: now it is a *white* Herbert buoy, and to be left to starboard on entering.

It is also stated in another notice, that since Herbert's buoys have been used in the Eastern archipelago, they only are beacon buoys carrying a ball: and on entering a roadstead the white buoys must be left to port and black buoys to starboard.

RIVER GUAYAQUIL.—The Captain of the Port at Valparaiso has reported under date of 14th May 1866, that the light of Santa Clara at the entrance of that river has not been lighted for a long time, and that the two buoys which marked the extremes of the bank at the entrance of the river have disappeared, and are not likely to be replaced.

PACIFIC NAVIGATION.

(Concluded from p. 46.)

In a recent number of a Honolulu paper we find the following continuation of points in the Pacific Ocean. The following complete the Pomatou Group, from corrected data by Capt. D. Smith, who is well acquainted with the Pacific.

	Lat. S.	Long. W. of Gr.
Obiti Islands (centre)	16 50	144 15
Tapoutou Islands (centre)	16 42	144 6
Toumako Islands (centre)	16 40	144 8
Moakimoa, E.S.E. and W.N.W. atol and lagoon, 36 miles, S.E. point islet	16 40	143 24
Ditto, N.W. islet	16 26	143 53
Holt's Island, atol and lagoon, S.E. point	16 24	142 59
" " " N.W. point	16 19	143 12
" " " S. point reef surrounding	16 27	143 8
Touena Islands, atol and lagoon, N.E. point	16 48	144 42
" " " S.W. point	16 52	144 52
Milaradowitch or Faiti Island, atol and lagoon, S.E. point	16 50	145 2
Dito, N.W. point	16 43	145 16
Atice Island (centre)	16 30	144 56
Katiou Islands, atol and lagoon, S.E. point	16 33	144 8
" " " N.W. point	16 26	144 18
Faarawa Group, atol and lagoon, Islet, N. point	16 3	145 33
" " " S. point	16 32	145 20
" " " Westernmost islet	16 9	145 43
Raraka Group, atol and lagoon, Islet, E. point	16 10	144 42
" " " W. point	16 6	144 55
Ditto, South extremity reef surrounding	16 14	144 49
Kaouehi Group, atol and lagoon, North Islet	15 44	145 4
Ditto, South Islet	15 57	145 5
Ditto, East Islet	15 53	145 1
Ditto, West Point Islet	15 51	145 12
King's Island (centre)	15 42	144 38
Aratica or Kotzebue group, atol and lagoon, N.E. point	15 27	145 16
Ditto, W. point	15 32	145 34
Ditto, S. point	15 40	145 26
Toaou or Elizabeth Island, atol and lagoon, S.E. point	16 1	145 48
Ditto, N.W. point	15 49	116 1
Ditto, W. point	15 53	146 7
Hiaou or Greig's Island, lagoon and atol, E.N.E. and W.S.W., 8 miles, largest islet	16 14	146 15

	Lat. S.	Long. W.
Auura Islands, atol and lagoon, E. point Islet	15 45	146 28
Ditto, W. point Islet	15 40	146 50
Ditto, S. point Islet	15 48	146 35
Apataki Islands, atol and lagoon, S.E. point islet	15 34	146 17
Ditto, N.W. point Islet	15 15	146 37
Ditto, N.E. point Islet	15 16	146 15
Rurick Islands, atol and lagoon, S. point Islet	15 27	146 51
Ditto, N. point islet	15 11	146 48
Ditto, W. point islet	15 16	146 52
Waterland Island, atol and lagoon, N.E. point islet	14 28	146 17
Ditto, S.W. point islet	14 34	146 27
Ditto, N. point islet	14 25	146 22
Manihi, atol and lagoon, N.E. point islet	14 22	145 55
Ditto, S.W. point islet	14 27	146 7
Ditto, S.E. point islet	14 28	145 58
Taapouta, atol and lagoon, S. point islet	14 38	145 12
Ditto, N. point islet	14 30	145 8
Tarao or King George's Island, N.E. point islet	14 22	144 50
Ditto, S.W. point islet	14 30	145 2
Tikai or Romanzoff Island, N.E. point islet	14 53	144 34
Atol, no lagoon, S.W. point islet	14 57	144 38
Disappointment Island or Otooho, centre	14 2	141 21
Wytoohie Island, atol and lagoon, S.E. end islet	14 10	141 5
Ditto, N.W. end islet	14 8	141 18
Henden or Henuake Island	14 50	138 40
Vliegen, Rairoa or Fly Island, atol and lagoon, S.E. point islet	15 16	147 12
Ditto, N.W. point islet	14 54	147 50
Ditto, W. point islet	15 6	147 56
Krnsenstein or Tikehou Island, atol and lagoon, N.E. point islet	14 55	148 3
Ditto, S.W. point islet	15 8	148 14
Lazareff Island, centre	14 55	148 36
Matia Island, centre, (doubtful)	15 50	148 12
Maitea Island, (1,597 feet high,) centre	17 53	148 5
Heretoua Island, centre	20 27	143 29
Tekou Island, centre	20 40	143 16
Noukoutipipi Island, centre	20 44	143 4

JAPAN, WEST COAST OF KIUSU.—Inside of Wilson Island, Commander Charles Bullock, of H.M.S. *Serpent*, reports:—The *Serpent* Rock, with 9 to 12 feet on it, as being three-quarters of a mile from the shore of the island; with the N.E. point of it N.N.W., the South point W.S.W., and North point of Koko-sima E.N.E. The *Serpent* grazed it, having 6 fathoms regular soundings in both chains.

THE ROYAL SOCIETY.

To the numerous visitors who accepted General Sabine's invitation on Saturday, March 2, the *Conversazione* held at Burlington House will be memorable for its scientific character and the brilliance of its demonstrations. Some few, who remarked that the upper rooms "looked thin," found, on descending to the Lower Library, a great concourse, attracted thither by the wonderful display of electricity which Mr. H. Wilde, of Manchester, had prepared for them. There was something imposing in the sight of the apparatus itself:—a huge electro-magnetic machine, with coils four feet high and ten inches thick, containing fourteen hundred weight of copper wire, between them an armature made to rotate 1,500 times in a minute by a 15-horse power steam-engine standing just outside one of the windows. Round and round flew the wheels, every rotation sending two fresh streams of electricity into the coils, until on a sudden the intense current was conducted to the lamp placed in a reflector at one end of the room, and an intensely brilliant electric light flashed in the eyes of all beholders, dazzling them severely as the noon-day sun, illuminating the nooks and corners of the spacious apartment with a clearness beyond that of sunshine, and deadening the vivid flame of the sun-burner in the centre of the ceiling until it appeared of a dull brown. Gas is but a poor thing by the side of this new, vehement electric light. When tried once, at Wilde's factory, in Manchester, it threw the flames of the street-lamps into the shadow at a quarter-mile distance. Dazzling though it was the light, fascinated all within its influence, and they who had provided themselves with coloured glasses gazed on it with wonder and admiration. Some, placing a lens in the path of the ray, burned holes through sheets of paper; others held out their hands to intercept the heat, which could be distinctly felt at a distance of fifty yards. Then the lamp was turned off, and the light blazed for a while in the middle of the experiment-stand, more dazzling than before; then a long loop of wire was screwed into the terminals, and held up on a hook by an attendant; in a few seconds it smoked, assumed a dull red colour, which brightened to a glowing white, under which the wire melted and fell in glittering fragments to the floor. Short lengths of thick iron rod were similarly fused; but the crowning experiment was the melting of a rod of platinum lent for the occasion by Mr. Matthey. To those who know what is meant by the fusing of this very refractory metal this experiment will be the most convincing of all of the enormous power of the machine.

It was interesting to watch the behaviour of the steam-engine during these experiments, for in every instance it slackened speed when the wires or rods were growing hot. The resistance is then great, and becomes greater as the metal increases in heat; and it was only by constant care on the part of the driver that a uniform rate of motion was maintained.

When such men as Stokes, Miller, of Cambridge, Sabine, P.R.S., Tyndall and Wheatstone were excited to enthusiasm by a grand scientific phenomenon, the effect on ordinary observers may be imagined. Their sense of wonder was abundantly gratified. But by-and-by arose the question, what practical use can be made of this surpassing light? To which the answer was: It can be used instead of oil for lighthouses; the Commissioners of Northern lights have had a small machine made to be tried at one of the lighthouses under their charge; a French company have bought the right to use it in France, intending to apply it first at the lighthouse on Cape Grisnez, whence, as it declared, the light will be seen across the whole breadth of the Channel. The cost of the light, as computed by a competent authority, will not be more than 6*d.* or 8*d.* an hour, including coal, carbon-rods for the lamps, expense of maintenance, and interest on the price of the machine. This must be considered cheap for a light which makes the sun look pale.

The light was exhibited at times during the evening from the top of Burlington House, and sent its streaming rays far across the neighbourhood, and filled the court-yard with its blaze. But the effect seemed to us less satisfactory than indoors; there being a deficiency of penetration and diffusibility. These are defects which may, perhaps, be overcome by a modification of the reflector.

Besides the production of light, the machine is susceptible of mechanical and chemical applications. A well-known electro-plating firm in Birmingham are about to use it instead of a battery for the deposition of copper; the cost will be less than that of the zinc and acid of the galvanic battery at present employed in the process. And a firm in Whitechapel are setting up one of the machines for the production of ozone in large quantities, to be applied in the bleaching of sugar. With such a promising commencement, we may be sure that many other useful applications of Wilde's machine will be discovered.

There was a large collection of other scientific apparatus and instruments exhibited in the rooms, but our remarks thereon must necessarily be brief. Prof. Wheatstone and Mr. Siemens showed the machines for converting at once dynamic into electric force, and Mr. Siemens explained that he could send the current generated by his machine through a submarine cable to light up with flashes a buoy or beacon at a distance from the shore. We hear that the Commissioners of Northern Lights will give him opportunity to put his method into operation in the beacons on the coast of Scotland.

Prof. Wheatstone's telegraph thermometer, by which an observer at the bottom of a house or of a mountain can read the temperature of the top, is an ingenious instrument, which in many circumstances would be very useful. Mr. Browning's large star-spectroscope, which is to be used in the Earl of Rosse's great reflector at Parsonstown, was a triumph of optical workmanship, and we may expect to hear in the next observing-season that its analysis of the constitution of stellar bodies is as satisfactory as the great telescope's resolution of the nebulae.

Perfection of workmanship was shown also in the zenith sector (Troughton and Sims), and transit instrument (Cooke and Sons); exhibited by Col. Strange. Every instrument now made by the best makers combine improvements on all that precede. The Secretary of State for India very properly refused to allow these two instruments to be sent to the Paris Exhibition, as they are much wanted in the great triangulation now carrying on at the foot of the Himalayas. But how is it that, while thus zealous for this branch of astronomy, he has stopped the astronomical observatories in India?—Prof. Abel showed what he calls “a portable, easily-extemporized battery,” for field use, of which the excitants are salt and vinegar, with discs of zinc and copper. It will explode a mine or fire a gun through a hundred miles of wire. An iron plate was exhibited by Mr. F. N. Gisborne, which had lain for twelve months at the bottom of the sea, coated with a paint which prevents fouling. It was quite clean, for the paint is a mercurial composition which produces an electrical action that prevents attachment of the organic matters so detrimental to the speed of ships. Mr. Gisborne’s process has been adopted by the Admiralty.

SCURVY IN OUR MERCHANT SHIPS.

The increasing prevalence of scurvy in our merchant ships is an unerring gauge of gross mismanagement or of cruel thrift. Ships are finer; passages are quicker; provisions and water are better. In all the *materiel* of a seafaring life enormous progress has been made. But the sanitary condition of the crew has in many vessels reverted to what it used to be a hundred years ago. The lessons learned at so much cost, which were inculcated by Lind, Blane, and others, and thankfully carried out by illustrious sailors like Cook and Nelson, are forgotten. Old-established truths have to be revived and insisted on for a new generation, on whom, through perverseness or ignorance, the experience of the past has been thrown away. It has been wisely said that if scurvy can be kept out of the cabin, it can be kept out of the fore-castle.

In the smaller vessels, we are told, the difference in diet is not great. Yet it is enough to preserve the officers in health and vigour. A few tins of preserved meats and vegetables, pickles, and seasonings, with an occasional glass of bitter ale, secure for them immunity from the scourge that prostrates and slowly kills their unhappy shipmates. We should rejoice to find that, in addition to the time-honoured salt pork, beef, and biscuit, flour, and peas, that now form by mutual agreement the staple of all ships’ diet, our merchant seamen had a *legal allowance* of preserved potatoes, onions, and carrots, pickles, mustard, and molasses, with currants, and some of those cheap dried fruits so commonly used in America. We know from practical experience that most savoury

and varied messes can be concocted from such ingredients. Jack would be well satisfied with the occasional change from junk and its heavier accompaniments. The cost of these articles is inconsiderable, and his improvement in health and temper would be cheaply purchased.

Spirits, we believe, are no longer issued daily as part of the dietary of the mercantile marine, but are given in most vessels at times at the discretion of the captain. This system is said to work well, and any alteration would be inexpedient. If an occasional issue of wine or beer could be afforded, their antiscorbutic virtue renders them desirable beverages for seamen. In the ships of southern nations, wine is the ordinary drink, and fresh-made bread the staple article of food; and scorbutic disease is of rare occurrence. It is well known that in the last century the great fleets of France were free from scurvy, while ours were suffering dreadfully from the disease, and on some occasions this inferiority told greatly against us. Sir Gilbert Blane was so impressed with this fact that he strove hard to introduce wine in lieu of spirits. Soon after, however, the use of lime-juice became general in the royal navy, and, from its wonderful prophylactic power—even when provisions and water were bad, and other sanitary conditions were low—it was at once declared, and has ever since been most justly accounted, the *facile princeps* of all antiscorbutics.

But, to be efficient, lime-juice must be of good quality, and taken daily in regular and sufficient quantity. It is chiefly in these points that the *ménage* of our merchant vessels is so defective. Through a vile system of adulteration, and a faulty method of preserving it even when genuine, all faith in lime-juice has been weakened. Its issue is considered by many as a vain form, and its consumption as a nauseous and repulsive task. Such is the erroneous estimate of what ought to be, and is, a most agreeable and refreshing beverage, which for nearly a century has given health and solace to thousands of our gallant tars on every sea and in every variety of climate.

In any legislative enactment special care should be taken to secure by examination the absolute purity and appropriate packing of the lime-juice before being placed on board, and to insist on its punctual administration whenever fresh vegetables are not procurable. The present terms of the act are not sufficiently precise, or, at all events, can be evaded. There may be difficulty in arranging the details of such examination. For, as in the memorable case of the *London*, inspection with a view to prevent mischief sometimes serves only to shift the onus of responsibility on the Government, and enables those who are in reality the most responsible to escape.

No enactment can be complete which does not bring the vendor's stores under direct supervision, and which fails to inflict deterrent penalties, not only for adulteration, but also for proved negligence on the part of owners and masters of ships. The cost of genuine lime-juice, properly packed and warranted to last for two years, is little, if at all, greater than a solution of citric acid of the same strength. It is true the factitious mixtures in vogue are much weaker, and, al-

though chiefly composed of citric acid, are sometimes sharpened with vinegar or sulphuric acid.

For the supply of an ordinary ship, a very few pounds will represent the difference in cost of the best and the worst lime-juice in the market. And it is for this paltry saving that *highly respectable men—local magnates—leaders*, it may be, of public movements—do not scruple to rob their servants of health and strength, and to bring scorn and reproach on their country. It is to be regretted that in such flagrant cases as have recently occurred the sufferers did not seek redress by an action for damages. When the culprits are so numerous as to keep one another in countenance and defy exposure, it is only by mulcting the pocket that a desirable impression can be made.—*Lancet*.

New Books.

ARITHMETIC, THEORETICAL AND PRACTICAL: Adapted for the Use of Colleges and Schools. By *W. H. Girdlestone, M.A., of Christ College, Cambridge.* London, Oxford, Cambridge: Rivingtons. 1867.

This work might be well termed a compendious system of arithmetic;—that is, one the operations of which are effected by the shortest of methods: but these methods are not those which have been taught by the generality of our schools. Such a system, however, implies a thorough comprehension and application of the powers of numbers and their component parts. Thus the author's results are obtained by processes marvellously less than those usually employed. The author is no less happy in dealing with fractions, both vulgar and decimal, and conducts his pupil in the same style through all the branches of his subject, including the square and cube roots.

Throughout his progress the author is careful to explain his reasonings to the pupil, providing him with detailed examples in each branch as he proceeds, and leaving him with a selection of them for his exercise as he concludes it; completing the whole with a tolerable collection from the examination papers of our universities and civil service commissions, along with an appendix containing answers to the whole. We must content ourselves with this brief general notice of the work, which we consider one of the highest order of its kind, far, very far, superior to those of former days. Assuredly, if brevity (as it is considered) be the soul of wit, so must it be that of arithmetic, when its object is equally attained by it as by a roundabout method; and on this account alone it commends itself to the attention of the rising generation, who might go to work with it in self-instruction without the superintendence of a teacher. But with or without such assistance, the *élève* who masters the contents of the work before us (some 300 pages of small 8vo.) in all its parts may well be considered a finished accountant.

CHART OF THE WORLD ON MERCATOR'S PROJECTION. *Constructed by Hermann Berghaus and Fr. von Stülpnagel Gotha.* Justus Perthes.

This is about the largest chart of the World on one sheet that we have yet met with, and one with pretensions that amply justify its large dimensions.

We mean by this that the space which it thus commands is devoted to the most useful purposes. But let us first inform our readers of its dimensions. These are 6½ feet by 4 feet, and including from 80° N. to 60° S. lat.; and they will at once perceive the abundance of space which has been turned to a good account. We shall first allude to the wants of the sailor. A good idea is given of ocean currents by neat flowing lines, including equatorial, tropical, and polar; and very well they are shown in all the oceans, especially the counter-currents, so important to be clearly understood by seamen; and the range of the ice, as well as the regions of weed, all of which are highly interesting to him, and would serve as useful reminders when using the ordinary chart, in which they do not appear.

Another valuable feature of this chart to the navigator is the lines of equal variation, so that it is at once a current and a variation chart; but we have very much more than all this,—the prevailing winds are neatly shown, and then we have the different steamvessel routes, as well as here and there the depths of the ocean. There is, indeed, abundance of information in all these features of great importance to the navigator, all of which is conveyed by clear and intelligible symbols.

The extended dimensions of the chart enables the geographer to define the limits of each State, and we perceive those of Prussia with her new additions and her shore extending from Memel to Emden. The compiler also has had the good taste to introduce in small compartments in different parts of the chart enlarged separate plans of important districts,—such as the monsoons, the polar regions, the isthmus of Panama and Suez, the Nicaragua route for steam, Lower Egypt, Vera Cruz, and Vajaca, places of interest in transits from sea to sea; and when we say that with all these executed in first-rate style of engraving, and that the whole chart is a specimen of excellent work, clear and intelligible, we may safely say, that with all the geographical as well as hydrographical information which it contains, it is the best chart of the world we have yet seen.

NAVIGATION. *By James Pryde, Teacher of Mathematics.*
Edinburgh: W. and R. Chambers. 1867.

A compact, unpretending little volume, which deserves an index, and recommends itself to the attention of seamen by its clearness, its conciseness, and the abundance of the examples which it gives for the learner's practice. In a post 8vo. form of some 450 pages, it differs in routine (we would say briefly) from similar foregoing works, excluding from its pages all the tables which the navigator requires of a trigonometrical and astronomical nature. For the absence of these the navigator is compensated by the introduction of subjects not generally introduced in such works, but which are essential to his calling. For instance, tables of flags of all nations present themselves at the opening of the book, and the author, after taking his pupil through the little arithmetic he requires, leads him on with algebraical analytical symbols to the construction of logarithms, and goes on to trigonometry, assuming of course that he knows all about geometry, and then we come to the "sailings" and the various problems of nautical astronomy. Then follows an appendix, opening with forecasts of weather, in which the law of storms might have been (if at all) a little more amply treated, and other matters, ending with a ship with all her gear and its explanation. We do not here assume to give a view of the whole contents of the work before us, as this would take us far over our limits, but we have said thus much to show that the author has produced a useful little work.

We perceive that the "purchase system" (on which some letters recently appeared in the *Daily News*) has been the subject of a pamphlet by Sir Chas. Trevelyan, in which some burning words appear, that *should* attract the attention of the Government with a view to obviate the disgraceful evils therein pointed out. Will they do so?

CHARTS AND BOOKS PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in *February and March*, 1867.—Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

638.—Africa, West coast, Congo River, North bank, from Bull island to Pta de Linha, Lieut. Parker, R.N., 1865, (1s.)

1,068.—Australia, East coast, Moreton Bay to Sandy Cape, various authorities to 1866, (2s. 6d.)

Part I.—Ireland, Directions for the South, East, and North coasts. Staff-Commander Hoskyn, R.N., 1866, (3s.)

Vol. I.—China Sea Directory for approaching Singapore by Sunda, Banka, Gaspar, Carimata, Rhio, Varella, Durian, and Singapore Straits, Staff-Commander J. W. King, R.N. and J. W. Reid, Master, R.N., 1867, (4s. 6d.)

159.—Italy, West coast, Civita Vecchia to Bay of Naples, French survey, 1856, (1s. 6d.)

249.—Africa, North coast, Mahediah to Makabez, Commander Wilkinson, R.N., 1865, (2s. 6d.)

250.—Africa, North coast, Fratelli Rocks to Mahediah, Commander Wilkinson, R.N., 1865, (2s. 6d.)

227.—Newfoundland, East coast, Deer and St. Jones harbours and views, J. H. Kerr, Master, R.N., 1865, (1s. 6d.)

2,427.—United States of America, Salem, Marblehead, and Beverley Harbours, coast survey, 1859, (1s. 6d.)

2,095.—Cape Good Hope, Houdeklip Bay to Natal Port, various to 1867, (2s. 6d.)

738.—India, West coast, Kundari Island to Boria Pagoda, Lieut. Williams, I.N., 1861, (2s. 6d.)

2,454.—Philippine Islands, Luzon Island, Northern portion, with Bashee and Ballingtang Channels, Capt. Sir Edward Belcher, R.N., C.B., and Lieut. Montero, Spanish navy, 1859, (2s. 6d.)

90.—Coral Sea, Middleton Reef, Capt. Denham, R.N., F.R.S., 1853, (1s. 6d.)

EDWARD DUNSTERVILLE, *Commander, R.N.*

Admiralty, Hydrographic Office, 21st March, 1867.

TO CORRESPONDENTS.

Mr. JOHNSON has our thanks for his attention.

Mr. J. H. Groos's letter just received.

Inquisitor in our next.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

MAY, 1867.

RESULT OF THE JAMAICA OUTRAGES.

Thanks to the unwearied exertions of the Jamaica Committee, the law of England is avenged from the fountain-head. The Lord Chief Justice of the Court of Queen's Bench, in his charge to the Grand Jury on the subject of the Jamaica atrocities, dealt out such crushing statements on the utter illegalities of the barbarous proceedings carried on under the imagined authority of martial law promulgated by the Governor, that it was clear conviction stared the perpetrators in the face. The Grand Jury, in consideration that all the horrid measures followed out were done *in ignorance of the law*, threw itself between them and the course of justice. How different from the magistrates of Market Drayton, who would have done as had been done, and themselves approved of the severe measures that formed the reign of terror in Jamaica.

And since the highest legal authority in this kingdom has stamped them with the ban of illegality, we may fearlessly infer that the opinion expressed by this journal, as to the conduct of one of her Majesty's ships of war on such an occasion as the appeal of a governor for assistance, was correct. We shall therefore be saved from hearing that any such new duty is to be imposed on the navy as that of flogging negroes at desire, and we now know that what was done was an imposition on naval routine, and we shall rejoice that the disgusting scenes recorded in this journal are not to be repeated. Done in ignorance of law as they were, but still not without barbarous malevolence, they do not yield those laurels which excite the ardent

aspiration of the naval officer. However, a lesson has been learned, and is yet more to be learned, by our officers, in which opinion the Grand Jury evidently agree, when they accompany their "*not finding*" true bills against Lieutenant Brand by their presentment, which runs as follows:—"The Grand Jury strongly recommend that martial law should be more clearly defined by legislative enactment." And as this presentment, it was promised should be forwarded to the proper quarter, we may expect our naval officers hereafter to be capable of supporting a governor abroad without assuming prerogatives which do not belong to them, and assisting in cruelties on the score of punishment! with which *they* have nothing to do.

After what has taken place on this subject, it will be a useful course to follow it up, and assist in defining martial law. It will be well first to see what has been said on the late decision by the Lord Chief Justice in one of our leading journals; then to record the views of that able lawyer, Mr. Frederick Harrison, and then recur to some points of the masterly charge of the Lord Chief Justice, which apply closely to the position of the naval officer.* Thus saith the *Daily News*:—

If the Jamaica prosecutions had done no more than draw out the clear and firm exposition of the law which the Lord Chief Justice of the Court of Queen's Bench pronounced on Wednesday (the 10th inst.), their promoters would have entitled themselves to the warm thanks of every Englishman. Deeds bad in themselves, injurious first in their operation, and then through the force of example, acquire an indefinite power of propagating themselves, when they give rise to theories which, originally invented to palliate them, settle down in the public mind and take their place among its acquired convictions. Such are the maxims concerning martial law which Mr. Disraeli propounded in Parliament, and which have since found their way into *legal manuals*, and been *repeated by public speakers and writers* in

* This is what was expressed as the opinion of this Journal on the employment of the navy in the Jamaica massacres. To an appeal for the assistance of a ship of war, we said,—“By all means your Excellency shall have what assistance can be given you by H.M. ship under my command to *suppress rebellion* wherever it is in the island; and the rebels when taken shall be lodged in your prisons to undergo trial as [soon as] the rebellion is suppressed: but, neither my officers, nor my men, shall be converted into judges or executioners, to carry out your views of hanging, shooting, or flogging, and not a single lash shall be inflicted by the ‘gallant blue jackets’ of H.M. ship until approved of by the Commander-in-Chief of the station.”—*N.M.* 1866, p. 74. Such was the doctrine laid down in this journal for the course of one of H.M. ships at Jamaica. Had that course been pursued, supported as it now is by the opinion delivered by the Chief Justice of England, what cruelties would have been spared, what hideous scenes would have been prevented, what an illegal destruction of life, infliction of torture, and imprecations on the authors of it, would have been spared! It is no credit to our officers that they are to learn lessons on duty at the expense of an unhappy people, whether black or white, who are to lose their lives that they may know the commonest points of the law of their land.

every variety of form. It was absolutely necessary to obtain a judicial deliverance on these grave matters, and the country has now the advantage of having had the law concerning them stated from the highest seat of criminal justice.

It is not pleasant to reflect that, in an age when so many European communities once far behind England have made great progress towards the attainment of rational and well-ordered freedom, it had become necessary to learn again the very alphabet of our civil liberty. Lord Chief Justice Cockburn felt it necessary to impress very seriously upon the Grand Jury at the Old Bailey the consideration that the safeguards which British justice has provided for accused persons are not technical trammels, to be regarded with contemptuous toleration in quiet times, and thrown off when the law is invoked in all its terror, but are of the very essence of justice. Experience has shown that such safeguards are necessary to prevent the rash and hasty conclusions which even men experienced in the administration of justice are at times apt to form; "to protect the innocence which sometimes wears the appearance of guilt, and to save the lives of innocent men, especially in times of excitement when these safeguards are most wanted." This is just what thousands of our intelligent but too impatient countrymen have been lately forgetting, professing to desire nothing but what Mr. Adderley has called "substantial justice;"—i. e., what seems so to prejudice avoiding inquiry, but which often turns out upon examination to be most frightful injustice. It is a terrible thing when our public instructors teach the ignorant and unthinking to feel contempt for those institutions, such as lawful tribunals, trial by jury, and rules of evidence, that save governments from that which must be either the greatest of crimes or the greatest of misfortunes—the shedding of innocent blood.

The proposition that has been laid down in *Parliament* and elsewhere, that there is a kind of law known to the British Constitution which is in fact the extinction of all law save the law of the military commander, to be exercised in accordance with his judgment, according to the exigencies of the moment, with no fixed or settled rules and no definite practice, is *condemned* by the Lord Chief Justice as *utterly destitute of authority—unfounded, untenable, mischievous, DETESTABLE*. So far from martial law, available for the putting down of rebellion, being an easy, familiar thing, perfectly understood and settled in this country, it is, in truth, unknown to the Constitution, and has never been resorted to or exercised. It may be asked, How, then, is armed rebellion to be repressed? The Lord Chief Justice answers, in the name of that paramount law which is recognized in all civilized countries, that where illegal violence is used the Government may defend itself and repress that violence by an amount of force necessary for that purpose. But this the Lord Chief Justice says is not martial law, it is part and parcel of the law of England.

It is not necessary to follow the Lord Chief Justice in his examination of the alleged right to proclaim martial law in Jamaica founded on a local Act, because he has distinctly laid down the doctrine that

under no circumstances whatever are men to be tried for their lives where the essentials of justice are disregarded. In dealing with the case of Gordon the Lord Chief Justice asked first whether, martial law being in actual operation in one part of the island, that person was subject to its jurisdiction, and whether it was lawful for any one to apprehend him in Kingston, where it had not been proclaimed, and hand him over to a military tribunal. On this point the Lord Chief Justice was clear and emphatic. Mr. Eyre and Dr. Bowerbank *had no right whatever to take Gordon and transfer him to a district under martial law*; if they arrested him at all, they should have handed him over to a lawful authority, to be dealt with according to law. The whole proceeding of arresting him and sending him to Morant Bay was unlawful. Then, further, the court-martial itself was *no court-martial*; it was not constituted according to the law which authorizes military courts, and *its sentence was null and void*. If the persons composing this supposed court had no jurisdiction, but were exercising judicial functions, and by their act some one was put to death, that in the eye of the law was *murder*, although, no doubt, if the jurisdiction had been assumed under a misapprehension and in good faith, it would be a case for the prerogative of the Crown. The Lord Chief Justice had gone carefully over the evidence on which Mr. Gordon was convicted, and had come irresistibly to the conclusion that *three-fourths, if not nine-tenths, of the evidence on which that man was sentenced to death and executed would never have been admitted if a competent judge had presided*, or even if there had been the advantage of the experience of a military officer who knew the rules by which military tribunals ought to be governed. "No jury, however interested or prejudiced, if guided by a competent, impartial, and honest judge, could on evidence so *morally and intrinsically worthless, on evidence so utterly inconclusive*, have condemned that man on a charge of high treason."

The Lord Chief Justice, having made these points clear, left a large discretion to the Grand Jury. They were to exercise their own judgment, and if they were of opinion that although there might have been a mistake, and a most grievous mistake, in condemning this man to death, yet the proceedings were conducted in what was believed to be the due course of justice, the accused ought not to be harassed by being sent for trial. The Grand Jury appear to have taken this lenient view of the case, and threw out the bill. Although from the time when *Ministers of the Crown* undertook to defend what was done in Jamaica as legal, we have been anxious to see the conduct of the principal agents in those transactions brought to the test of law, we have no regret to express at this decision, and no fear of any injurious consequences as likely to result from it. It is quite conceivable that Colonel Nelson and Lieut. Brand acted in good faith; and certain that they were not answerable for much of the illegality of which Mr. Gordon was the victim. There is no proof that they had any special animosity against their prisoner. He had not been for years their political opponent; they had no personal account to settle with

him; they had not for a long time previous been pursuing him with deadly resentment. Nor, when their conduct was challenged in this country, did they abscond from justice, hiding behind a country bench, but met their accusers like men,—a proof at least that they believed in themselves. Gordon was given into their hands for trial; and they tried him, most ignorantly indeed,—without authority, under the influence of the all-prevailing passion, but possibly all the while under the belief that they were acting according to law. They are wiser now; they will never do so again. They will carry Lord Chief Justice Cockburn's charge in their memories to the latest day of their lives. If ever they should be summoned to sit upon a court-martial in future they will take care to ascertain, first, that they have jurisdiction of the prisoner; [that no civilian can be legally tried by a court-martial.] The excuse of ignorance will not avail any officers who may come after them, nor will it help them to quote the dicta of the Duke of Wellington, or even of Mr. Disraeli, in favour of the boundlessness of military authority. Henceforth it will be clear to all who exercise authority that they must conform to the law, and that if they put subjects of the Queen to death without lawful trial they will be themselves liable to be called to account.

Let us hope that we shall see no more lives sacrificed at the shrine of ignorance, which ignorance, in these advanced days of civilization, should not be allowed to prevail in a service so liable to be called on at a moment's notice in support of Governmental authority.

CIVIL LAW AND MARTIAL POWER.

Law was never intended for sailors, although we have been told by a learned author* on the subject, that bad manners at sea begot good laws on shore for their management. And well it was so. Still law occupies little of their attention; and should that animal called a sea-lawyer be found accidentally among them, he is shunned, got rid of as a dangerous subject, his room being considered better than his company.

It is generally allowed, however, that a little knowledge is a dangerous thing: a sweeping assertion this, which admits much variety of qualification. Yet in the case of law, a little knowledge, when judiciously applied, how beneficial it would be even among sailors. A few axioms would often keep our naval men right, who are sometimes called on in the course of their varied duties to deal with subjects where their ignorance of law leads them to commit extravagances for which they

* Godolphin, from whose work a dissertation on the term Admiral appeared in our volume for 1851.

cannot escape blame. It might be objected that they have their own laws, in what used to be the articles of war, enough for their guidance in discipline and all its requirements afloat. But suppose them to be placed on shore, as on a recent occasion, to act in place of the civil authorities, what enormities, at variance with all law, are committed from sheer ignorance.

And yet there is a singular dearth of information on the subject of the relative bearings of civil law and that myth called martial law, showing where one ends and the other begins; and the relative authorities of each of these institutions when employed with each other. The acknowledgment of each of them under certain conditions, and where those conditions cease or have no being, illegal proceedings take place. Civil authority, according to circumstances of population, is sometimes weak; in which case military *power* is called to its support; and military *power* exercised against a rebellious power in arms is justified in all its proceedings. But that condition of rebellious power in arms ceasing, military *power* employed against it ceases also, and offenders can only be turned over by it for trial by the civil authority.

These relative conditions have been so ably set forth by the author of the following letters, that we have considered they would be acceptable to our readers. And we gladly further, not only a clear view of the relation between civil and military law, as it is called, or as we shall term it "power," military law being applicable only to military men, and not to civilians, but are also glad to be forwarding thereby the publicity which their author desires they should attain. Were the facts herein laid down wider known, as they should be, such great mistakes as have been committed would not have been laid to the charge of naval officers. In the case alluded to, we have seen their conduct palliated by the Admiralty, on the score of youth and an ignorance of the great responsibilities of that part which they were called on to perform,—disqualifications for such duties, however, that were no palliation for the conduct of those who employed them: and thus were her Majesty's naval officers induced to the condition of passing sentences of hanging and flogging of negroes, who were called rebels, and even of superintending such punishments afterwards,—a duty which all belonged to the civil power,—and certainly reflects neither honour nor dignity on their profession; all of which a correct view of civil law and martial power would have enabled them to avoid.

No. 1.—Statement of the Issue at Law to be Tried.

Nearly a century and a half ago a certain carpenter, attached to the Ordnance at Gibraltar, was tried and sentenced by a court-martial for a military offence. The prisoner appears to have been fairly heard and justly condemned. So thought Governor Sabine, the commander of the fortress, who, in due course of military authority, countersigned and confirmed the sentence of the court. That carpenter returned to England, where he found money and friends. He brought his action against Governor Sabine in Westminster Hall for illegal punishment

by court-martial of a civilian. He proved, that though following the army, he was not within the jurisdiction of military law. The general was most ably defended. It was not shown that the sentence was oppressive or unjust in itself; it was not pretended that the governor bore any ill-will towards the prisoner; he was shown to have acted in regular course of duty, and to have been guilty chiefly of inadvertence. But, morally innocent as he was, the majesty of civil law was asserted. The general was held to have exceeded his powers by ordering the punishment of a civilian. A verdict of £700 was given against him. On appeal, this judgment was confirmed. Such are the facts reported by Lord Mansfield, the greatest common lawyer who ever sat upon the bench, himself counsel in the cause. He cites this as a precedent to be followed, and as the authority which guided him in one of the most memorable of his decisions.* So jealous of military license were the English lawyers of the last century.

A century and more has passed away, and again the governor of a British colony has adopted the sentence of a court-martial upon a civilian. So far the case is that of the carpenter. But in this instance the sentence was death. The prisoner was not a camp follower, but was a simple civilian, who had never pretended to bear arms. He was seized in a district in which civil law was undisturbed; he was seized by the governor in person; † he happened to be a man with whom the governor had waged a long political struggle. The court which tried him is said to have borne him malice. ‡ At its head was a hair-brained youth. It received the evidence of condemned prisoners said to have been suborned, and the written depositions of witnesses who were not produced. It refused to hear the witnesses of the prisoner. An official inquiry, conducted by English judges, has decided that evidence is totally wanting to prove the crime with which he was charged. The report of the trial and all the evidence was laid before the governor. He sanctioned the sentence, and *it was carried out with every mark of insult and ferocity.* It was carried out, not in the midst of war, but at a time when the governor reports that entire tranquillity existed. Nor was that execution single. It was one of 439. It was the most signal wrong of a long reign of terror, when a civil governor handed over an unresisting and defenceless people to a soldiery whose own lips recount proudly the measure of torture and murder.

It would have seemed that Lord Mansfield, who approved the assertion of civil law in the case of the military carpenter who had been flogged, would have seen some good cause for trial in the case of the civilian and politician who had been hung. But the matter does not rest here. It was found that a powerful party loudly justified this act, as founded on ancient prerogative and undoubted right. A *learned*

* See *Fabrigas v Mostyn*, XX. State Trials, 232; also, *Comyn v. Sabine*, I. Cowper, 169.

† Much stress has been laid on the Governor not bearing any ill-will. When a Governor does the office of his own police, there must be a feeling very much akin to it. See also page 135 of last volume.—ED.

lawyer was found to write a book, in which he proved to their entire satisfaction that the execution of civilians by courts-martial was a striking feature of the British Constitution. Writers and speakers told us that society must come to an end unless Governments might hang obnoxious people in emergencies. Worse than heated or random talk followed. A so-called liberal administration said that they were very sorry, and said no more. An illiberal administration succeeded, and in his place the *leader of the House of Commons* justified this deed by the proclamation of martial law, which he told us was the suspension of all law, and, as he implied, of all responsibility. Language was used in parliament which perhaps was never heard there, except from the creatures of the Stuarts. *Lordly* and *priestly* enthusiasts hailed the chief actor as a hero, and glorified his deeds over their cups. And the upper classes seemed convinced to a man that a great official murder was an act as strictly legal as it was eminently spirited.

It would seem that some strange change has come over the nation, once so jealous of the power of the executive, that it again tolerates the servile and despotic language of the Stuarts. The cause is not far to seek. From the Revolution down to the beginning of this century, the parliament, the public, the bar and the bench were alive to the duty of watching the pretensions of the Crown. Since then the House of Commons, controlled by the upper and upper-middle class, have virtually exercised the powers of the executive. They are, in fact, the authors of the so-called acts of the Crown, and the people are again practically unrepresented. Thus, they who won their influence by resisting the pretensions of arbitrary power, have become the accomplices of an arbitrary power which really issues from themselves. In the name of the *people*, of the great family of citizens of the British empire, it again becomes vital to crush the pretensions of the executive abroad; it again becomes necessary to vindicate beyond the seas the first principles of civil liberty.

Hence this trial is of far higher import than the redress of a private

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There are worthy people who admit that deeds most illegal and most cruel have been done, but who will not allow that these call for public trial; least of all, a trial for murder. If trial there be at all, it must be a trial for murder. The Jamaica Committee did not make the law of England; they appeal to it. Our law (it may be right, or it may be wrong,) calls the act of unlawful and unjustifiable homicide—murder. If a man illegally puts a fellow-citizen to death, he cannot by our practice be tried for indiscretion. If trial there be, the indictment must be drawn by lawyers, according to the law.

But they say (and it is in reality the view of the late and of the present Government), however violent and excessive in themselves were the acts of Governor Eyre, it is not wise to try them at law, or to force a legal decision on their illegality. They answered in the main a useful end. Nor would it be wise to define too closely the reserve force in the hands of an executive. So said the apologists of Strafford. If there be one fact which makes it a duty to try this issue to the uttermost, it is the prevalence of so ominous and specious a claim. What makes this cause so critical is this very fact, that the bulk of English society positively desires to lodge in the hands of the executive latent and indefinite prerogatives, which it was the boast of our forefathers to have destroyed. The fact that these prerogatives cannot well be turned upon ourselves is the very thing that makes them so insidious. That they are meant to maintain our vast unresting empire is the very purpose we dread. The precise issue we raise is this: that throughout our empire the British rule shall be the rule of law; that every British citizen—white, brown, or black, in skin—shall be subject to definite, and not to indefinite, powers; that governors who govern by the sword must justify the necessity which compelled them to use it. Neither beyond the seas nor within them shall the executive place itself above law by simply declaring law abolished. Come what may, our colonial rule shall not be bolstered up by useful excesses or irresponsible force. Throughout our empire, as in this kingdom, government shall be responsible and defined; and there, as here, its basis shall be law, and not prerogative.

It is widely supposed that to try such a case in a court of law is oppressive and unjust. It is thought that an official who has done acts of necessary violence, and discharged a great public trust, may be technically convicted of a crime for which there exists the amplest moral justification. It is not so. The law of England is not so feeble, and not so unjust. He who has performed his public duties by the only possible means has as full a defence before an English judge as before his own conscience. A ruler who repels force by force may do everything that strict necessity compels. He may crush an armed rebellion by arms in every way that the legitimate use of arms requires. He may waste a province with fire and sword, and deluge it in blood, and he shall be guiltless at the bar of law as at that of honour, if he has done nothing but what his grievous necessity forced on him; nothing but meet open force by open force; has done no act of violence

except in the field in due course of war. This latitude the law gives, but not one jot beyond. Does the present generation of Englishmen find this not enough? Do they think the authors of the reign of terror in Jamaica did not exceed it?

The story of the carpenter at Gibraltar which I have narrated is no isolated case. It is but one of a series of decisions by which this branch of constitutional law has been firmly established. From the time of the Revolution down to the present generation, there is a long current of authority which defines the powers of governors of our provinces, the functions of a court-martial, and the conditions of the exercise of military force. Time was when lawyers and the public watched those liberties with dauntless and far-sighted zeal. It used to be thought that it was the first thing for a free and sound state, that those powers, whatever they were, should be definite; and, however hard might be the case, should be rigidly enforced. There is no part of the law of England more broad, great, and noble. There is not a technical or narrow rule in this branch of our system. It is all plain and wise, based solely on the great rules of justice, and tempered by the deepest political sagacity. It recalls to us some of the finest intellects and the most generous hearts that ever adorned our country; some of the truest acts of courage and of resolution in our history. The great memory of these solemn judgments, the splendid language in which they often were enshrined, has long been dear to the people and to the profession they ennobled. I cannot believe that they are yet forgotten or despised. Nor will I believe that the bulk of the English people have grown so careless of liberty and law, that they will see these great constitutional rights trifled with, and defaced by reckless scribblers and hair-brained talkers, glosed over by ministers of the Crown, and loaded with the sophistry of glib official cant. I trust that when the thinking public of England hears and weighs those doctrines of official responsibility, laid down by our judges for a century and a half, and compares them with language of the ministers and the parliament of the day, it will see that there is yet a great question at stake between the executive and the subject; subjects, it may be, beyond seas, and of another race, but fellow-citizens with us in the British realm. If they are not this, what are they? If they have not this law, what law have they?

Now, I think a review of the decisions of parliament and of the bench will be found to establish the following propositions with overwhelming force:—

1. The Crown has no power, and can delegate no power, to suspend civil law in Great Britain or in the Colonies.
2. Martial law is unknown to our system, and condemned both by the common law and statute law of England.
3. No civilian can be tried by court-martial, whether in time of war or in time of peace.
4. An official is bound to repel open force by open force; for the exercise of which he is responsible to the law.

5. He is justified for all acts of violence done in due course of legitimate war; he is guilty for all acts of violence not required by military necessity.

6. The governor of a colony may be tried here for all crimes committed in his province.

I should have thought that these principles were such as this nation does not hold trifling or extravagant. We have long thought them our birthright. It is certainly a grave matter whether they apply to all parts of this British Empire or not. Do they apply to some parts and not to others; and if so, to which? Are they good in Canada, in Australia, in Ireland? We are told, I know not from what peculiarity in the native character or special history of the island, that they do not and cannot apply to Jamaica. Whether they do or do not is of the highest moment to the honour and peace of our empire. But if in that empire there be a black spot, where civil law is superseded by arbitrary violence, I desire to hear the limits and origin of this outlandish prerogative, not from under-secretaries of state or naval lieutenants, but from the solemn sentence of an English judge.

No. 2.—The Crown has no Power to suspend Civil Law in England.

At the close of last session, the leader of the House of Commons, and the head of a great party, rose up in the chamber of Hampden and Pym, of Burke and Mackintosh, and, in answer to a question if certain proceedings were not illegal, replied that they were done under the existence of martial law, and "in the state of martial law," said he, "the Mutiny Act, like other Acts, would be suspended."* There a challenge was thrown down to the people of England to sustain, if they could, the principles of 1642; to resist, if they dared, the new assertion of extinct prerogative.

The real point at stake in this case is no longer the punishment of one intemperate ruler, but a vital question of national liberty and policy. His deeds and their motives sink into nothingness before the great issues of public right, upon which we appeal to the law. So long as the late governor was defended upon vague grounds of previous character and probable intentions, it was possible to believe that no great public interest demanded his trial. But that time has long since passed. The question has shaken society and political parties to their centre. It has been chosen as the test of our imperial system, and the battle-ground of public rights. To justify the accused there have been asserted doctrines which no liberal Englishman can hear without dismay, and that not by his lordly patrons and unblushing flatterers alone, but by ministers of state and powerful journals. And beneath it all, it is to be feared, there lurks a silent, sinister resolve to arm the executive with a masked but terrible weapon, which no thinking man can deny may be used with infamous abuse.

What the new "divine right" of a higher prerogative requires us now to believe is, that on due occasion, of which they are the sole

* See Debates in House of Commons, July 19th, 1866.

judges, the Crown and its officers may legally suspend all civil justice, and proclaim a state of martial law. That, having done this, they are free to act at will, whilst they cease to be responsible for their conduct to any tribunal in the world. They may then, with or without a state of actual rebellion, of which again they are the sole judges, set up courts-martial to try civilians for treason and other civil offences, and inflict any sentence whatever, including the sentence of death, with or without previous torture.* Indeed, so far as one portion of her Majesty's dominions is concerned, from some peculiarity, it seems, in its most numerous inhabitants, the jurisdiction involves a system of periodical raids with fire and sword by her Majesty's officers and troops; and a circuit of "bloody assizes," in which ruffianly subalterns play the part of judges, and a furious butcher is at once attorney-general and sheriff.

For a state of things like this, and a claim like this, but one remedy remains,—a formal appeal to the law. It becomes the concern of every honest citizen to try this cause to the end. It will, I think, be strange, if, when the meaning of this great struggle grows plainer and deeper, the whole liberal public of England, every friend of freedom and order within it, does not give it his earnest support. The public rights at stake will come, as they are seen and known more clearly, to overshadow for us, as they did for our ancestors, the miserable actors themselves. The plea that a great public criminal *meant well* is indeed a bitter mockery to men whose souls are stirred by the triumph of great public crimes. The State we know will feel the wound long after the excesses of the Government and its agents can affect us, perhaps almost when the horrors of Ramsay are forgotten. Is it not astounding to reflect on the mean and childish pretences on which one of the most sacred principles of civil society is trifled with and sapped? We charge a viceroy out of his own mouth with cruel and oppressive misrule; and they tell us that he has made contributions to science,

* It seems that this has been regularly reduced to a system in a memorandum issued by the Admiralty for the guidance of officers, May 25th, 1866:—

Instructions to the Commanding Officer of a Party landed when Martial Law has been proclaimed.

"9th. If martial law should be proclaimed in any district, you are then to follow the directions of the officer appointed to the military command of the district.

"10th. The arbitrary will of such officer in such case supersedes the ordinary law for the time being, in the same manner and degree as it would if the district placed under martial law were an enemy's country.

"11th. You are to require directions, in writing, from the officer in military command of the district under martial law as to your conduct in all matters of importance, especially in regard to the treatment of prisoners taken by you, whether they be taken in the actual commission of violence against the persons or property of her Majesty's subjects, or under other circumstances.

"12th. It is competent for the officer in military command of the district under martial law to order prisoners to be brought to trial in a summary manner before a council, to be named as he may direct."

and is known for his enterprise and endurance. What can it be to us that a man accused of an offence against the State like this has or has not the qualities which recommend him for a club or a learned society? I trust that he has far higher qualities than these. I honour his achievements and his gifts; but be these qualities what they may, it is with his acts, and not with his qualities, that his country is concerned. We ask that his conduct as a ruler be sifted by a jury of his countrymen, and its lawfulness determined by an English judge. It would startle the contemporaries of Mansfield and Burke did they hear how the guardianship of those public rights they built up had dwindled to a contest of personal partisanship. In those days the public was not wont to be tutored in political principles by retired captains and roving explorers, discredited commanders, and the cynical extravagances of a literary sect. We appeal to Cæsar, and to Cæsar let us go. A State culprit is at the bar no longer of parliament, or even of opinion, but of a civil court of justice. The great public cause there at trial should dwarf to nothing both accuser and accused. On this ground of law let us rest our case. And let every honest citizen take care that nothing shall impede the even course of regular justice.

In the belief that the public need only to feel how great are the matters of law and liberty in question to give to this trial their active assistance, I propose to draw out the broad features of the legal doctrines involved, and of those decisions under them which till this day have hardly been impugned. I am aware that a journal is no place, and that the lay public forms no tribunal, for intricate questions of law. I intend nothing of the kind. The public is not asked to try these questions of law, but to insist that they shall be tried. Journals do not give judgment on the safeguards of civil liberty; but it is their first duty to point out the dangers which menace those safeguards, and to rouse the public to defend them.

Now, the first constitutional principles which I have ventured to maintain are these,—*that the Crown has no power to suspend civil law; and that martial law is unknown to our system.* I propose to show, first, that this abhorrence of martial law is the keystone of our constitution; next, that this sacred and essential right has been carried by Englishmen with them into every settlement beyond the seas; and then I will consider those special circumstances which are said to have strangled it in the island of Jamaica.

I begin with the proposition, that martial law is unknown to our system. And I would first ask your readers again to consider the quaint but decisive language of the Petition of Right, that statute of Charles I. in 1627, the foundation of our present constitution. (3 Car. I. c. i.)

“7. And whereas, also by authority of Parliament in the fifth and twentieth year of the reign of King Edward III., it is declared and enacted, that no man should be forejudged of life or limb against the form of the great charter and the law of the land; and by the said great charter and other the laws and statutes of this your realm, no

man ought to be adjudged to death but by the laws established in this your realm, either by the customs of the said realm or by Acts of Parliament; and whereas no offender of what kind soever is exempted from the proceedings to be used, and punishments to be inflicted by the laws and statutes of this your realm; nevertheless, of late time divers commissions under your Majesty's great seal have issued forth, by which certain persons have been assigned and appointed commissioners, with power and authority to proceed within the land, according to the justice of martial law, against such soldiers or mariners, or other dissolute persons joining with them, as should commit any murder, robbery, felony, mutiny, or other outrage or misdemeanour whatsoever, and by such summary course and order as is agreeable to martial law and as is used in armies in time of war, to proceed to the trial and condemnation of such offenders, and them to cause to be executed and put to death according to the law martial.

"8. By pretext whereof some of your Majesty's subjects have been by some of the said commissioners put to death, when and where, if by the laws and statutes of the land they had deserved death, by the same laws and statutes also they might, and by no other ought to have been judged and executed.

"9. And also sundry grievous offenders, by colour thereof, claiming an exemption, have escaped the punishment due to them by the laws and statutes of this your realm, by reason that divers of your officers and ministers of justice have unjustly refused or forborne to proceed against such offenders according to the same laws and statutes, upon pretence that the said offenders were punishable only by martial law and by authority of such commissions as aforesaid, which commissions, and all other of like nature, are wholly and directly 'contrary to the said laws and statutes of this your realm.'"

And by the statute itself such commissions and the exercise of martial law are declared illegal.

It will be seen that this statute is not so much an enactment of a new principle as the declaration of an old right which dates from the provision of the great charter itself,—“No free man shall be taken, or imprisoned, or be dispossessed of his property and fee, but by lawful judgment of his peers, or by the law of the land,”—a right which, violated from time to time under the feudal times, had never been lost or betrayed. This first of all civil rights depends on no act whatever: it is a fundamental part of the common law. The Petition of Right was drawn, it is said, by Sir Edward Coke. Let us listen to the words that he used in the debates which preceded it: “To hang a man *tempore pacis* is dangerous. I speak not of prosecution against a rebel. He may be slain in the rebellion; but if he be taken, he cannot be put to death by the martial law.”* And again, in his *Institutes*, Coke says, “If a lieutenant or other that hath commission of martial authority in time of peace *hang or otherwise execute any man by colour*

* Rushworth Coll. iii. App. 81.

of martial law, this is murder; for this is against Magna Charta (chapter 29), and is done with such power and strength as the party cannot defend himself, and here the law implieth malice."† And in the same debate upon the Petition of Right, Mr. (afterwards Chief Justice) Rolle said, "If a subject be taken in rebellion, if he be not slain in the time of his rebellion, he is to be tried after by the common law." Such was the principle of the first founders of English freedom. It has been uniformly upheld to the present day. On no occasion, now for two centuries, has martial law ever been pretended to be exercised in England; and in no act in the statute-book of England is it recognized or mentioned, except in the totally different sense of military law—the special law applicable to soldiers as administered by their officers. We read in Blackstone's *Commentaries* (book i. c. 13), "Martial law, which is built upon no settled principles, but is entirely arbitrary in its decisions, is, as Sir Matthew Hale observes, in truth and reality no law, but something indulged rather than allowed as a law. The necessity of order and discipline in an army is the only thing which can give it countenance, and therefore it ought not to be permitted in time of peace, when the King's courts are open for all persons to receive justice according to the law. Wherefore Thomas Earl of Lancaster, being condemned at Pontefract 15th Edward II., by martial law, his attainder was reversed 1st Edward III., because it was done in time of peace." This distinction is well pointed out by Lord Loughborough, who says, in the judgment in "Grant v. Gould" (1792):* "Martial law, such as it is described by Hale, and such also as it is remarked by Mr. Justice Blackstone (i. e., law administered, not by civilians, but by soldiers), does not exist in England at all. Where martial law is established and prevails in any country, it is of a totally different nature from that which is inaccurately called martial law; merely because the decision is by a court-martial, but which bears no affinity to that which was formerly attempted to be exercised in this kingdom, which was contrary to the constitution and has been for a century totally exploded. . . . Therefore it is totally inaccurate to state martial law as having any place whatever within the realm of Great Britain." As amongst themselves, soldiers have a military code; as between soldiers and civilians, the law never for one moment permits the suspension of civil justice, or exemption from liability in civil courts. After the suppression of the Gordon riots in 1780, Lord Mansfield, in Parliament, says, "Supposing a soldier, or any other military person who acted in the course of the late riots, had exceeded the powers with which he was invested, I have not a single doubt that he may be punished, not by a court-martial, but upon an indictment to be found by the grand inquest of the city of London, or the county of Middlesex, and disposed of before the ermined judges sitting in Justice Hall at the Old Bailey." So, too, said Chief Justice Tindal, in the case of the Bristol riot of 1832. "The soldier is still a citizen, lying under the same obligation, and invested with the same authority

* Coke, 3 Instit.

† 2 H. Blackstone, 69.

to preserve the peace of the King as any other subject.”* And so Sir David Dundas, then Judge-Advocate-General, when examined upon the outbreak in Ceylon in 1849, and its suppression by military force, admitted that the governor who had called it out was responsible afterwards, “just as I am responsible for shooting a man on the King’s highway who comes to rob me. If I mistake my man, and have not, in the opinion of the judge and jury who try me, an answer to give, I am responsible.”† In the case of the Demerara riot, in 1823, a case of terrible similarity with this, Lord Brougham, in Parliament, said, “I do not profess to understand, as a lawyer, martial law of such a description: it is entirely unknown to the law of England.” And Sir James Mackintosh declared, “The only principle on which the law of England tolerates what is called martial law is necessity. Its introduction can be justified only by necessity; its continuance requires precisely the same justification of necessity; and if it survives the necessity on which it rests for a single minute, it instantly becomes a mere exercise of lawless violence.”‡

The effect of all these opinions is the same, and it is this:—The English constitution and law know nothing, as regards civilians, of any law but the civil law. The jurisdiction over civilians of military courts, the suspension of civil courts, or the application to civilians of any but civil process and civil punishment, is a thing wholly and for ever repugnant to the English system. Those who use force, who violently close the courts, or who forcibly usurp their functions, be they soldiers or be they civilians, whether they act under commission from the Crown or not, remain for all that they do accountable to the arm of civil justice. Civil justice, like the King, never dies. It may be suppressed for a time by force, but its arm can reach backward to the instant of its own suppression, and call all men, military or civil, official or citizen, to summary and condign penalty. All acts, whenever done, whether under that suppression or not, remain equally open to trial. The civil law contains no method for its own extinction. All devices and attempts to extinguish it are crimes, as are all schemes to wrest the criminal from its grasp.

I am quite conscious that by itself this is far from proving the case for the prosecution of Mr. Eyre. I will not pretend that it establishes the law of England conclusively. I ask the public only to weigh these plain and solemn decisions of the law, and ask themselves if they do not make out a strong *prima facie* case that martial law (or the use of law other than civil law, the trial of civilians by other than civil judges) is repugnant and alien to our system. I am well aware, moreover, that martial law is said to be recognized by an Act of the Irish Parliament, in 1799, and by several Statutes of Jamaica; that it has been proclaimed in that island, in some of the colonies, and during the Irish rebellion. I will deal with these later, and see to what these instances really amount. In the mean time I rest on this: that, for Englishmen

* Russ. on Cr., 286.

† 2nd Rep. Ceylon Committee, p. 177.

‡ House of Commons Debates, June 1, 1824, 21 Hans. N.S.

at least, martial law is something of monstrous and lawless birth, and if it be, I would ask if an English court of justice will not require some higher proof of its naturalization on any dominion of the Crown than is contained in forced inferences wrung from confused Acts of the Irish or the Jamaica Parliaments; from the unresisted usurpations of isolated governors and commanders; from tortured readings of the preamble of a statute; from doubtful interpretations of the official edicts of a desperate and panic-stricken class?

FREDERICK HARRISON.

(*To be continued.*)

THE SAFETY FISHING-BOAT OF THE ROYAL NATIONAL LIFEBOAT INSTITUTION.

A safety fishing-boat in certain cases of these craft being overtaken by bad weather at a distance from the land may be looked on as of as much importance as the lifeboat itself. In this light it is a good thing for our fishermen that the subject was seen by the council of that invaluable institution, which has so much distinguished itself in saving our seamen from wreck. The Royal National Lifeboat Institution, whose good works our numbers continually record, has made the experiment, and we are happy to say successfully. We are therefore glad to follow up their endeavours by contributing all we can to make them known, and with that view repeat the following article from their journal.

We consider this step as one of the most important that has been taken by the institution, and in respect of our fishermen that it is beginning at the right place, the fountain-head, of saving our fishermen's lives when threatened as they so often are by danger, frequently unavoidable, and too often fatal. Our country cannot make refuge harbours, it appears, where they are most wanted: it is everybody's business, and every one knows that every one's business is nobody's.

It is fortunate in such a state of things that there is a society of our countrymen who come forward, with the support of a section (too small) of their brethren, to do the good work of saving our seamen in their perilous calling, and they are well entitled to the gratitude of their country.

In consequence of the frequent loss of life through the foundering of fishing-boats on the coasts of the United Kingdom, it appeared to the committee of the National Lifeboat Institution that the safety of the larger class of open and half-decked fishing-boats on our coasts might be greatly increased, by enabling them to be made temporarily insub-

mergible, in the event of their being overtaken by gales of wind when at long distances from the land.

No doubt was entertained by practical persons on the coast, who were consulted on the subject, of the need of such improvement and of the feasibility of the plan proposed to effect it; but the coast boatmen being an inert class, not readily departing from what they have been accustomed to, it was not thought likely that they would themselves initiate any such changes, however needed.

The committee, therefore, decided to build a few pattern boats, and to place them at some of the principal fishing stations in the hands of experienced and trustworthy boatmen, to whom they would be lent, or let at a small percentage on their earnings, for a period of twelve months; at the end of which time they might be sold, and would remain in the several localities where placed as samples, from which the other local boats might be improved in a similar manner.

As these boats would be seen by large numbers of fishermen from different places at their chief ports of rendezvous during the fishing seasons, it was considered that it might not be necessary to build any large number in order to make them generally known, and that a short period would suffice for those to whom they were entrusted to form a correct estimate of their properties.

In the event of the experiment proving successful, it was believed that a great boon would thus be conferred on the fishermen and other boatmen of certain classes on the coast, as not only would numberless lives and boats be saved that in course of time would otherwise be lost, but that the boats would often be able to remain at sea and safely continue their fishing in threatening weather, instead of returning to the shore at great pecuniary loss to their crews, as is now too frequently the case.

Five of such boats were accordingly ordered,—three to be built in Scotland, one at Yarmouth, and one by the builders to the institution in London. Two of the boats built in Scotland, one at Peterhead and the other at Anstruther, have been tested and are now at work, having already afforded the utmost satisfaction to their crews, as will be seen from the following extracts of letters received at the institution.

Capt. A. Sim, honorary secretary to the Lossiemouth branch of the institution, writing from that place on the 18th of March, states:—“The safety fishing-boat sailed from Granton Harbour on Wednesday, the 13th inst., at 6h. a.m., and was here the following day at 5h. p.m., after lying to for some time off Peterhead, thus making the voyage in thirty-six hours—no bad test of her sailing qualities. She has been very much admired here by all the fishermen; in fact, the sea-faring population are unanimous in their opinion, that she is just the thing for this coast, and I trust she may be the beginning of a new era in decked boats.”

Wm. Boyd, Esq., honorary secretary of the Peterhead branch, also writes on the same date:—“You will be glad to hear that the new safety fishing-boat gives very great satisfaction. John Geddes, the

lifeboat coxswain, lay alongside the Lossiemouth boat in the Frith of Forth, and declares that she is a fast sailer, having accomplished the run from here to Granton in thirteen hours. She works well and satisfactorily, but she has not experienced such bad weather as would thoroughly try her safety powers."

The interior fittings of the boats have been so arranged as not to interfere with their everyday work, yet so as to enable them to be quickly made insubmergible.

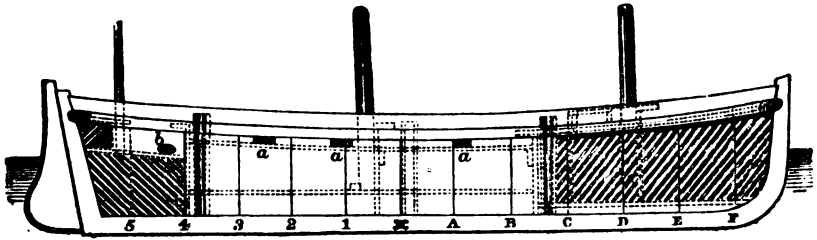
This object has been effected, as is clearly shown in the eight diagrams and explanations prepared by the society. 1st. By making the usual forecabin a watertight apartment, the access to it being by a watertight hatch in the deck, instead of an open door at the side. 2nd. By making the usual compartment at the stern also watertight. 3rd. By running a side deck along either side, as in barges and in some of the smaller class of yachts called well-boats. Thus leaving a large open main hatchway, of sufficient size for conveniently working the nets, yet which, by the aid of coamings and hatches, and a watertight tarpaulin, stowed away in the hold or forecabin in fine weather, could in a few minutes, on the occurrence of bad weather, be securely covered over so that no water could get access to the hold on a heavy sea breaking over the boat. The inspection of a common coasting-barge with her hatches on and covered over, will convey an exact idea of the simple manner in which the above arrangements are carried out.

The size of these boats,—viz., length 40 feet, width 14 feet, depth amidships 7 feet,—has been selected as the most convenient size for use both in line and net fishing. A sixth boat, however, 45 feet long by 15 feet wide, is about to be built for Anstruther, where the fishing-boats go as far as 100 miles from the land to fish, and have lines on board of the total length of 23,500 yards, or nearly 13½ miles, which require a large space to stow them away all coiled in baskets, besides a cargo of fish.

The committee of the National Lifeboat Institution entertain sanguine hopes that this experiment will be ultimately productive of much benefit, both by saving life and property.

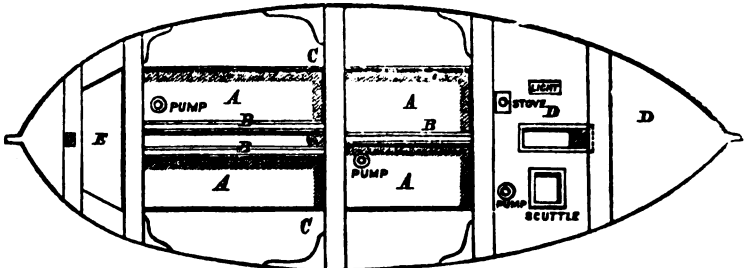
In conclusion, it may be stated that the National Lifeboat Institution has been engaged during the last two or three years in perfecting this model of the safety fishing-boat. Captain J. R. Ward, R.N., its inspector of lifeboats, has visited during that period some of the principal fishing stations on the coast of the United Kingdom, with the view of eliciting from the most experienced fishermen practical suggestions, to be incorporated in the construction of the boat; so that thus she may be correctly termed an *omnium gatherum* safety fishing-boat. It may also be mentioned that the drawings of the boat have been furnished by Mr. Joseph Prowse, of her Majesty's dockyard, Woolwich, who, with the kind permission of the Admiralty, superintends the building of all the lifeboats of the institution.

FIG. 1.



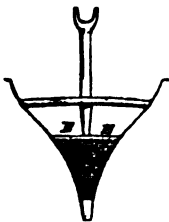
Sheer Plan.

FIG. 2.



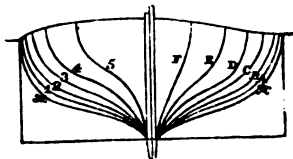
Deck Plan.

FIG. 3.



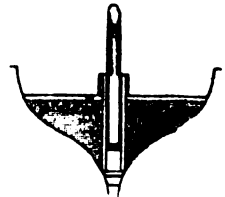
Section at 5.

FIG. 4.



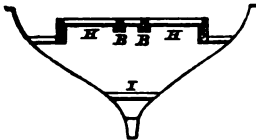
Body Plan.

FIG. 5.



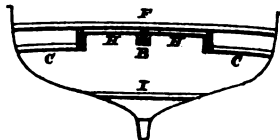
Section at D.

FIG. 6.



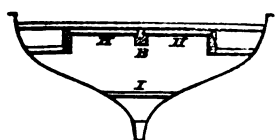
Section at S.

FIG. 7.



Section at X.

FIG. 8.



Section at B.

Explanation of the Engravings.

The accompanying Figures show the general form, the nature of the fittings, air compartments, shifting coamings, and hatches of one of the safety boats, 40 feet in length and 14 feet in breadth.

In Figs. 1 and 2, the elevation and deck plans, and the general exterior form of the boat are shown, with the sheer of gunwale, length of keel, and rake of stem and stern post.

The dotted lines of Fig. 1 show the position of the compartments, bulkheads, masts, pumps, thwarts, and shifting flat or deck. *a*, Scuttle in boat's side above the side decks. *b*, Scupper in boat's side above the stern deck. *c*, Screw plug, to drain the stern compartment.

In Fig. 2, *Δ* represents the open hatchways of the main hold, to be covered with portable hatches and a watertight tarpaulin cover in gales of wind; *α*, shifting coamings for the hatches; *ο*, the side deck; *δ*, the forecastle deck; and *ε*, the stern deck.

Fig. 3 represents a section at the after air compartment, showing the thwart, and crutch to receive the mast, and the stern deck.

In Fig. 4, the exterior form of transverse sections, at different distances from stem to stern, is shown.

Fig. 5 represents a section at the fore air compartment, showing the thwart and mast.

In Fig. 6, the shifting coamings over the main hold are shown, with the portable hatches (*Н*) in place, and (*ι*) the shifting deck or flat.

Fig. 7 represents a midship transverse section, *π* the thwart, *ο* the side deck, *β* the shifting coaming over the fore hold, *ι* the shifting deck or flat, and *κ* the hatches in place.

Fig. 8 represents a section abaft the foremost bulkhead, showing the shifting coaming (*β*) and portable hatches (*Н*) in place, and (*ι*) the shifting deck or flat.

VOYAGE OF THE "PIONEER"—No. 5.

(Continued from page 192.)

On the night of June 9th, blowing hard with a rough sea, we lost our bowsprit, and from this time to the end of the passage we had nothing but bad weather.

As we drew up the Bay of Bengal the barometer fell; and this, with a hard metallic sky (when it could be seen), left no doubt that a gale was coming on. With the vessel already weakened amidships, I should have gone into Coringa for shelter until the bad weather was over, but with the wind ranging about the West point of the compass there was nothing for it but to keep the sea, and do our best.

On the 13th I became uneasy about our chance of making False Point, as the wind sometimes ranged North of West, and drove us to the Eastward. So, after watching for a glimpse of the sun for hours, by a hasty sight in the afternoon I found that we were still far enough to windward to sight the coast.

This was the only observation for longitude I had in the bay, and

as so much depended upon the position of the vessel at this time, I looked for the result of the sight with an anxiety which a seaman only similarly circumstanced can know; for had we been too far to leeward to fetch the "sand heads," we must have run for the Arracan coast, and remained there until the next N.E. monsoon.

On the morning of the 14th we made the land, and shortly after saw the Juggernaut Pagoda, when a course was shaped for False Point with a tolerably smooth sea under the lee of the land, but with an ominous booming of thunder now and then, and with a livid sky, not to be described or forgotten.

As the day closed there was not a speck in the heavens which did not threaten a wild night; and as the thunder neared us and the lightning became more vivid, we could not doubt what was coming. At 8h. p.m. we were abreast of False Point Light, and from there steered for the pilot station at the eastern channel, with the bare possibility of getting a pilot on board. The right course to have adopted in a *sea-going* vessel would have been to stand out to sea until the gale was over; but I knew if I did this in such a vessel as the *Pioneer*, I must give up all hope of reaching Calcutta until the end of the year, and I was resolved to try for our part to the last.

As the night darkened, the wind increased, the sea rose, and the whole Northern heavens from West to East seemed on fire with much lurid forked lightning, while the thunder crashed over and around us, in which our frail craft trembled as if her last hour had come. So indeed it seemed, when just before midnight the first fury of the gale fell on us, only giving us time to head out to sea under a storm-sail, to be driven away at the mercy of its raging waves under an increasing gale, with all hope lost of reaching our port when almost in sight of it, and this too after being five months at sea, and after escaping perils of a kind not known to vessels built for sea voyages.

As the gale increased and the sea became higher, the vessel began to strain her fastenings amidships, where she had been weakened in a former gale, and when daylight broke and a ship was seen close to us the thought occurred to me of hoisting a signal of distress for her to remain by us. But I did not feel our case was so bad at that time as to warrant this, and I also felt doubtful whether any vessel would remain in company with us on our account at our rate of drift, which was so great that an hour afterwards the ship was out of sight.

Regarding signals of distress, there are two reasons why they should be used only in extreme cases. 1st. If this signal were resorted to on no occasion but actual peril and necessity, we should not so often hear of ships passing by without heeding such a signal. 2nd. The danger of a panic among the crew, with all its evil consequences, chief of which is loss of discipline; and while every case must be judged on its own merits, a commander of a vessel, whether she be a line-of-battle ship or a fishing smack, ought rather to perish with his ship in the performance of his duty than to save his life by abandoning his duty.

Away we drifted, and as the vessel was lifted up on the top of a sea her two ends would go down so as to make a ridge on the deck

amidships, where nearly all the fastenings had gone, and where the deck began to crack and creak as the strain fell on it to keep the vessel together.

Towards noon of this day (the 14th) the barometer fell to nearly 28 inches, and the appearance in every direction showed us that we had not yet had the worst of the gale, while every sea that struck our poor craft made it more and more certain that she could not hold together much longer. There was now only a forlorn hope left for us, and this was to put her head towards the shore, and, if possible, run her over the sands. This was a desperate resolution, but our condition was desperate, for we should have foundered before night. For the first time during my nautical life I felt that certain destruction was near if nothing else could be done, and before putting the vessel round I called her officers down to the cabin and offered up that prayer which is used at sea in times of great peril, and then we went on deck to do our best and prepared for the worst. Providentially the vessel wore round easily, and after getting her to head N.E., set as much low-storm canvas as she could carry, and so ran for our lives on a course that would lead to certain wreck in a vessel of ordinary draught.

Of the many pictures of vessels in distress and peril at sea, few could impress the beholder with a more graphic sense of peril than that of the *Pioneer*, when to escape the certainty of foundering she was steered for the most dangerous part of the Bay of Bengal; and as she rose and fell with each sea, she would appear as if made of two parts loosely joined together in the middle, as her ends were lifted and lowered by the action of the waves. All that day and all through the awful night which followed we ran,—a night in which the crash of thunder, and roar of the sea, and rush of the vessel through the water, were sounds unheeded by us. But when another more startling and ominous noise was heard from below, as the ship's fastenings gave way with a sharp report, like a rifle, until about 2h. a.m., in the middle watch, when the last and loudest of these was heard, then indeed we doubted that we should ever see daylight. We knew now that the deck only was left to keep our wretched craft from breaking up, and was all that held her two parts together.

All hands were on deck, and the pumps were continued always going, by which the water was kept under; for the rush in at the broken sides was much checked by a shield of planks and swabs—a contrivance of the engineers—and without which we could not possibly have kept afloat. The deep-sea lead was kept going all night, and just before daybreak we got soundings in 13 fathoms, by which I knew we must be near one of the numerous sands running far out to the southward from the sea face of the Sunderbunds.

At daylight we found the water very discoloured and rapidly shoaling, with breakers in every direction excepting to the S.W.: all looked as if we were running to certain destruction, for some of the breakers were of a kind that no vessel could live near; still I knew there was nothing for us but to go on, and if we could get over the rollers, and so escape the breakers, we might yet save the vessel. I gave the first

officer charge of the lead, and the second charge of the steerage, and then went up on the foreyard with a spy-glass to pick our way clear of the shoal patches.

About noon we caught sight of the shore, which is very low at this part of the head of the bay: we could see only the tops of the jungle trees. We had now left the heavy seas behind us, and for a time the gale lulled; and as the breakers were in detached masses, we were able to steer between them, going over the rollers without further injury to the vessel, as they only rushed up over the rail on to the deck until we cleared them. Although we could only see the tops of the jungle trees, the sight of them was a great relief to us, whatever might lie between the vessel and the shore.

As the day waned the gale rose again, and there was every appearance of another wild night, with no signs of shelter, until just before dark a patch of breakers was seen on the lee bow, over which there was no chance that we could go. So when near them we brought up with both anchors; and, however dangerous the place was, there yet remained a hope of saving our lives in the two small boats, even if the vessel should founder at her anchors in the course of the night.

W. C. P.

(To be continued.)

QUALIFICATIONS FOR COMMAND OF MERCHANT SHIPS.

In the April number of the *Nautical*, "An Old Sailor" has commented on the degraded position of the officers of the merchant service, owing to the ridiculously low standard of the examination for masters and mates. And really this examination is such, that any one who has passed through a village school may master with ease. As there is no limit to the number of trials which unsuccessful candidates may make, the ranks of merchant commanders are filled with a discontented class, who are neither valuable as seamen nor officers, but who constitute a very large portion of that troublesome biped, the sea lawyer. During a recent voyage my ship was half manned with seamen of this class, who failed to perform their duties to the satisfaction either of myself or their shipmates. When it is borne in mind that a first-class *extra* examination does not embrace a single line of mathematics, we may readily believe that four ranks lower it is not worthy of the name.

If the officers of the merchant service are really desirous of raising their position, and securing a better market for their services, the good work must be commenced by raising the standard of qualification. Probably no man is more called on to act under trying circumstances than the shipmaster, and too many entirely break down under the responsibility which occasionally falls to their lot.

The "old sailor" in the April number very properly remarks that

navigators of iron ships should possess a fair knowledge of the laws of magnetism. Having recently commented on the loose system which is in vogue in the manufacture and adjustment of compasses, I may add that I entirely concur in his views, as it is not uncommon to find a merchant-ship's compasses so erroneous that the bewildered skipper is in doubt by which of them to steer. Not long since I came to England in a steamer from Smyrna. The captain was a good-natured, easy-going man, who had spent the greater part of his life in the coasting trade, and knew but little of the simplest rules of navigation. We coasted along the African shore, making each well-known headland and town until it became necessary to steer for the coast of Spain. The weather became squally, with drizzling rain, and the passengers retired early to their state-rooms. At 11h. in the night we were aroused from our first sleep by the shouting of the captain, the hurried trampling of many feet overhead, and the shaking of the heavy sails as the ship came to the wind. Hurrying on deck, I saw land close to us on the starboard side, and the heavy surf breaking against the shore. "Confound your azimuth compasses," quoth the skipper. "I paid a fellow six pounds for that when I left, and it is not a bit truer than the others; I will not trust to it again."

Now, here was a man in command of a ship with twenty passengers and a valuable cargo of silk, opium, &c., who was so ignorant of the rudiments of his profession as to believe that an azimuth compass should point *truer* than an ordinary one. We coasted to Gibraltar, rounded Cape Trafalgar, steered for St. Vincent, and saw the light at 10h. p.m. about three points on the port bow. "This bridge compass appears to be out, I will try the steering," was another remark of this commander. The steering compass certainly led the ship during a tempestuous night near the dangerous reefs of Point de Bec, and compelled us to stand to the westward for eight hours, in order to clear Ushant on the other tack. Now, apart from the risk to life and property, it is evident that such a commander, however slender may be his pay, must sink more money than would be required by a first-class man at highest wages. This ship ultimately foundered at sea in a *peculiar manner!*

The editor of the *Nautical Magazine* will be surprised to learn that but a small number of officers in the merchant service are even familiar with the use of the artificial horizon. On ordinary voyages the rate* given by the chronometer maker is invariably used, and on long voyages, the sea horizon. I have known ships to leave port with chronometers greatly in error, *because the sea horizon was not visible* where the ship lay!

As a rule, English shipowners† have not much knowledge unfor-

* Oh yes; we have heard of such a thing before, even on a voyage to Rio Janeiro and back.—Ed.

† A knowledge of the compass, or the science of navigation or seamanship, is not necessary for the qualification of a shipowner. The safeguard for *his*
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unately of the essentials required to ensure the efficiency of their vessels. Economy is the great object sought for, often unwisely. It is this which induces them to contract with the cheap compass maker for inferior articles. The latter, however, contrive to make a very handsome percentage by a mysterious process, known in the trade under the name of "touching." At the end of voyages which extend over a period of about six or eight weeks, the compasses are regularly taken to the shop, and charged for accordingly. In the Royal navy they frequently remain in the binnacles for five years, without undergoing any sensible loss of power!

The gods help those who help themselves. On shore men form themselves into associations to advance the welfare of their class. The officers of the merchant service and agricultural labourers are now the only unrepresented men.

MERCATOR.

[On this subject the reader will find remarks in our numbers of this year, besides much more in many of the former numbers of this journal.]

A GLIMPSE OF PORTSMOUTH.

Englishmen must acknowledge that their country does not hold that high position among nations which she did in years gone by; not that her power has grown less, or her people degenerated, but from the fact that other countries have advanced in a greater ratio than she has done in military organization. We so far acknowledge the fact, that the wish is becoming general throughout the land to call in garrisons from distant outposts, and concentrate our strength around the citadel of our people. We are driven to this course for another reason also,—viz., the growing disinclination of men to enlist for foreign service when so many attractions and inducements are held out to the able-bodied at home.

The fear of an invasion by the forces of any continental power has long since ceased to occupy men's minds, and our great end is now to fortify securely the arsenals and dockyards against sudden attacks, and to hold these same in such a state of efficiency that they may be able readily to fit out or repair our fleets in the shortest possible time should an emergency arise.

The first in importance, from its great natural advantage of position in the Channel, is Portsmouth. Hitherto Portsmouth has not received

property consists in a thorough acquaintance and a timely resort to marine insurance. Why should he trouble his head about anything else in this our land?—ED.

that attention to which it is deservedly entitled. The dockyard is but ill provided to meet the pressing necessities of a steam fleet after an action. Even in times of profound peace, it is mortifying to find the constant delays which take place in fitting out our iron-clad ships of war. It is not uncommon to see one undocked before she is ready for sea, in order to allow a second to pass through her place, so low is the water on the dock sills during the neaps. Again, the jetty room is no more than sufficient for the use of our steam transports and coasting craft since the recent augmentation of that important branch of the Royal Navy. This defect, to the great annoyance of all parties, obliges us to have recourse to lashing our ships fitting to hulks in the harbour, thus occasioning loss of time more or less, from the tide and weather, at all seasons of the year, by the workmen having to pass and repass by boat to their work.

Another source of expense and inconvenience are the hulks themselves, as they idly swing at their ponderous moorings year after year, occupying harbour room, to the great detriment of ships mooring in it. A word or two here about these same hulks, which form the home for officers and seamen while fitting out. Probably no class of public servants in England would be permitted to live in such discomfort as sailors do in these barbarous relics of bygone days. These floating lodgings are barren of all comfort or convenience. They are not provided with a single article of furniture. The officer has not even a drawer in which to lay his clothes, and on joining not a chair to sit down on, or even means to procure a meal. In times of winter, the whole of the interior after a thaw is wet—everything as if steeped in water, which drops into the seamen's hammocks or into officers' bedding! What a contrast when he comes fresh from the comfortable barrack-room on shore. Such a condition of a hulk in the latter half of the nineteenth century points out that barracks are a positive necessity, if the health and comfort of our seamen are to be considered as worthy of attention. Who can wonder, when necessity keeps them on board, that they would rather share the comforts of the low public-house, compared with their wretched mess-table, on a long winter's evening? There can be but little doubt that this a fruitful incitement to crime, causing men to sell their kits, in order to raise a trifle to enable them to keep more on shore.

The coaling arrangements are equally defective at Portsmouth. The very cost of unnecessary labour would in a short time amount to sufficient to build the most costly coal drop. It may not be amiss to allude to the method at present pursued for coaling her Majesty's ships. The practical men of the day may then decide whether such a plan should be longer tolerated where dispatch is almost synonymous with success, to say nothing about economy. The *Betsy Jane*, or such bluff-bow'd craft of similar build, plods her way from Newcastle and Swansea with a heavy freight in few or many days, according to the state of the weather. On arriving at Portsmouth, their cargoes are, with considerable labour, discharged into one of the hulks. After lying there

few or many days, the coals are again filled into sacks, hoisted up, and sent by lighters alongside the ship which requires them, to be got on board by manual labour. Thus each ton of coals costs about three shillings more than it would do if *the whole process were done from the shore*. Apart from this is the fact, that good steam coal is seriously deteriorated by such frequent handling, and during a French war delay would assuredly be productive of the most serious consequences.

There is ample room in this noble estuary to build piers and basins in which to refit the whole Channel fleet. At present only a very limited number can be taken in hand at the same time with any reasonable hope of making satisfactory progress.

Misgivings and anxiety about the filling up of the channel from Spithead have lately been entertained owing to the formation of two new shoals, carrying 18 and 19 feet respectively. But it appears that they owe their origin to the starting of a ballast lighter's load of shingle from the works now in progress. They lie in spots subjected to the full scour of the tide, where it is highly improbable such accumulations could be formed by natural means.

Chatham now appears to be the spot chosen for our great naval entrepôt. Why is this? Is it convenient and accessible at all times? No. Is it in a commanding position with reference to an enemy's approach? No. Then why should our resources be expended on such a spot, and Portsmouth neglected? Are we in dread of a hostile fleet again sailing up the Thames, and making the thunder of their artillery audible on Tower Hill, that we are contriving an *inaccessible* retreat for the navy of England amidst the mud swamps of the Medway?

It were better that we quietly turned our attention to the selection of a favourable spot on the *Eastern shores* of this island, where an establishment might be formed to meet the danger with which we are now threatened from the vastly increasing power of the navies of the whole of the Northern powers of Europe!

It is tolerably certain that at no very distant period Prussia will absorb the free cities of Europe. Indeed, they would offer no objection to such a course, as the remembrance of French domination has not yet passed away from the minds of many now living in those flourishing emporiums. When this occurs Prussia will have the command of a large force of seamen, scarcely, if at all, inferior to our own in strength, courage, or endurance.* We could not afford to be out-flanked in such a fashion by such a people, without subjecting our-

* Which seamen, let it not be forgotten, *we ourselves* are doing all we can to make into ABs, by employing them in our own merchant shipping in the proportion of two to one—two foreigners to one Englishmen—that our country may benefit by her trade at the expense of losing *her* seamen, and making seamen of foreigners for the benefit of the countries to which they belong. How passing kind this of old John Bull! Surely his ears, like those of a certain useful animal, are becoming the most prominent appendages of his person.—ED.

selves to humiliation. England must always be prepared to fight against any combination which may arise on the Continent. If so prepared, few will care to affront us. No one loves to arouse the anger of the strong man armed. Let England take care what she is doing.

THE MARITIME ARSENAL OF SOURABAYA.

Sourabaya is situated in the narrowest part of the Strait of Madura, and about two miles into the interior of the island. The ground on which it stands is a flat alluvium of recent formation, and surrounded by marshy land, which is penetrated by the sea. A river, called the *Kali-Maas* (river of gold), the source of which is at a considerable distance in the interior of the island, forms into two branches just before reaching the town. While one of its streams divides Sourabaya into two equal parts, the other just enters it, and falls into the sea about half a mile to the East of the former. The principal branch is straitened from Sourabaya to the sea. The current in it is very strong, and always running down; the flood or ebb stream being neither of them felt except by producing a difference of level, according to the diminution or augmentation of the current.

This canal is the high road of intercourse between the roadstead and the town, which is accessible to all vessels of less than 12 feet draught. To overcome the current the boats are tracked up, and on the left bank of the river is a track road for the purpose.

The Dutch have desired to make Sourabaya the chief military post of Java. So, besides a strong citadel built at the commencement of the town on the right bank of the river, there is an enceinte with bastions, entirely surrounding the town on all sides. This enceinte is very wide; but the importance of the town must not be judged by its dimensions, for there are no houses of stone excepting those along the quays, and these are only about 300 or 400 metres on each side of the canal. The rest of the enceinte is filled one half by swamps and the other by the straw huts of the Malays.

The left bank of the canal is reserved for the houses of Europeans and the various government establishments; the right bank is occupied by the Arabs and Chinese. The Europeans who live there are generally military and civil functionaries of the government and some small merchants, who have only their houses of business in the town, their dwelling-houses being outside of the enceinte. It is the same with those carrying on business, who do not employ more than two hours of the day steadily in their office. All these buildings are echelonnées towards the river South of Sourabaya, and extend to two or three miles from the centre of the town.

CAMBOJA.

The coasts of Camboja and Lower Cochin China have been and may still be the nests of pirates and such dangerous marauders, and it is the same of the numerous islets which border the coasts of the French possessions there.

From Kang-kaio, in the Gulf of Siam, to Cape St. James, the coast of the peninsula is extremely low. This cape, which is the first land that is made on the coast, is situated at the entrance of the River Saigon, the finest of Asiatic rivers, which may be ascended by large vessels to a distance of sixty miles. It communicates by its upper branches with the great river of Cambodia (the Menam-kong, or Mekong), the source of which is unknown, but is a large lake. But the River Saigon is said by the natives to be navigable for twenty days' journeys by the country boats,—that would give it a course of 400 miles; and they add that it takes its source in the mountains of Lao,—but this is not yet verified.

Cape St. James, a high promontory, visible twenty miles distant, is distinguished by a lighthouse. It is fortified, and has a guard of twenty men. A submarine and overland telegraph would place this little garrison in communication with Saigon and intermediate points; and while this is under consideration, and the native mind prepared for the subject of electric telegraph communication, it would be desirable for the local authorities, by the construction of a chapel, to make Catholics of some of the natives. They would come and settle on the banks of the little river which falls into the harbour to the N.E. of Cape St. James. By their occupation of fishing they would be well adapted for navigating the coast; and, when wanted, would carry orders to Saigon under any circumstances. They would form a small auxiliary flotilla, which would thus only be paid as required.

Pulo Condore, Pulo Ubi, Pulo Phuquoc or Koh-Duc, are islands of considerable importance.

Pulo Condore is a name unknown to the natives, who call it Pulo Kohnaong, isle of pumpkins or gourds. It is in about lat. $8\frac{1}{2}^{\circ}$ N. and long. $106\frac{3}{4}^{\circ}$ E. of Greenwich. It is formed of a group of twelve islets, the largest of which is twelve miles long and four broad. The rest are mere rocks; but it is there where the Malays assemble when they make their excursions on the coast of Cambodia and Cochin China. From its roadstead, which receives large-sized vessels, the bay presents a fine view. An amphitheatre of mountains, terminated by a bold coast, forms the boundary of the roadstead to the South and West, and it is sheltered from the North and East by the islets of the group.

In the sheltered parts of this island there are some fine forests, good specimens of the luxuriant vegetation of the tropics. The mango and cocoanut abound, with a variety of fruit and vegetables. The natives

cultivate a little rice in the lower grounds, but they obtain part of their provisions from the market of Saigon, where there are some cattle, monkeys, squirrels, turtle, and abundance of fish. Oil is made there from certain woods of the forest; and the natives, the number of whom is uncertain, pay a tribute of turtle to the King of Annam.

A YACHT VOYAGE TO THE SANDWICH ISLANDS.

We have not recorded a yacht voyage in our journal, and one to the Sandwich Islands and back is an occurrence worth relating. We preserve therefore the following, and trust it will prove an example to be followed, to one of the most interesting groups on the surface of the globe, abounding in natural curiosities, and boasting a volcano to which all others are trifling in point of size.

A paragraph was inserted in the *Hampshire Independent* some two or three weeks since relative to the recent voyage of the Royal Victoria Yacht Squadron schooner yacht *Themis*, just now dismantling at Payne's, in the Itchen, describing it as a voyage "round the world," which was an error that it is desirable to notice only because the real character of the voyage was infinitely more important and remarkable. Though not round the world, it was to the Sandwich Islands, and back through the Sarmiento Channel and the Straits of Magellan, the latter part of which at least is of great importance to navigation, as saving a very considerable distance, and as an evasion of the tremendous sea and much of the inclemency of the weather in the higher latitudes rounding Cape Horn, for which that cape is so notorious. Though offering such advantages, these straits, even independent of the Sarmiento Channel—which is an additional inner navigation, branching North-west and North from the western part of the Straits of Magellan, of over 300 miles more—are a bugbear amongst sailors, being for the most part tortuous and very narrow, and containing many dangers, some of doubtful position, others only suspected, with strong currents, barren inhospitable coasts, ungenial climate, and much of the violence and fitfulness of the wind of the outer track. The whole region, in fact, is so repulsive, that the exigencies of a seaman's duties seem to form the only reasonable motive to any practical acquaintance with it. By them and professed geographers only can the full merits of this extraordinary and eminently successful enterprise be duly appreciated. Nevertheless, there is much in its more palpable characteristics so popular and obvious as highly to deserve very general notice, recognition, and admiration.

The general estimation of the benefits accruing to the country through our numerous yacht clubs is no doubt very high, but probably defective withal. Fashion, recreation, excitement, or health are not by any

means the sole motives to their existence; nor are the employment of so many men and the incidental expenditure of so much money the only beneficial results from them, of which this voyage is a superlative, but by no means a solitary evidence. Notably, but almost unwittingly, was the world largely indebted to Capt. Allan Young, the spirited owner of the *Fox*, in the later Arctic expeditions, as also subsequently in investigations to facilitate the laying of the Atlantic telegraph; but this is neither the place nor the occasion to multiply instances, which abound, of a similar kind, nor for the most part will the individual principally concerned be very thankful for their public display. It may be feared that such is the case with regard to the voyage now under notice; but the instruments of public information, fully sensible of this, must not be governed by it alone.

The *Themis*, formerly the *Titanis*, is an iron schooner of about 140 tons, and was built for Stephenson, the eminent engineer, under his own supervision, by Scott Russell. Her present owner, Captain T. B. Hanham, having fully tested her very superior qualities in a voyage up the Mediterranean, conceived the idea of making a voyage in her to the Sandwich Islands and back; and having noticed an article from the pen of the captain of a fine steam frigate, in his estimation of a most unsatisfactory and inconclusive nature, deprecatory of the passage of the Straits before-mentioned, he resolved to pass through them on his way out, and to return by the Sarmiento, &c., Channels into the Straits, for as close an investigation of the whole as circumstances would permit him to make in his track homeward. He endeavoured to secure the company and assistance of some accomplished naturalist and other scientific person, which delayed his departure considerably, and after all, on the 17th of April, 1864, Capt. Hanham was forced to start without them, with his lady and her attendant, and a crew consisting of a chief officer (who had been a naval lieutenant), second mate, carpenter, six able seamen, steward, cook, and boy. The chief officer and steward had recently joined the yacht; the rest of the crew had been well tried in her before.

The *Themis* touched at Madeira, Tenerife, Rio, in the River Plate, and Port St. Julian (where the grave of a naval officer was visited and fully restored by the crew), and on the 30th of August she rounded Cape Virgin into the eastern entrance of the Straits, clearing them by Cape Pillar, at the western entrance, early in the morning of the 12th of September, being a week or ten days before (in those latitudes) the vernal equinox. It was not, however, till the 13th of December that Capt. Hanham took his departure from the West coast, from Callao, for the Sandwich Islands, with an unbroken distance of over 5000 miles of seaway before him. The chief officer having died off the Island of Masafuera on the 4th of November, the owner himself was from that time the only person on board possessing the slightest knowledge of the science of navigation, in which it was thenceforth part of his care to instruct one or two of his crew.

Hawaii was made in forty days, and from the 22nd of January, 1865, till the 29th of November, the *Themis* was kept cruising about amongst

those islands, every anchorage in them being once or oftener visited, much to the advantage of the native and other authorities—princes, governors, ministers, and bishops—who were freely conveyed backwards and forwards as public duty or private inclination led them to desire. Meanwhile, one of the King's houses was appropriated for Capt. Hanham's use on shore. These and all analogous incidents are, however, beyond the scope of this narrative; but there seems some reason to hope, as they are for the most part interesting and amusing in no ordinary degree, that they will be presented to the public by the owner of the vessel himself at some future period.

On the 29th of November, 1865, the *Themis* left the islands on her homeward voyage, taking the track to the southward through the Marquesas group. On the 2nd of December, a magnificent mastiff, the captain's constant companion for several years, and well known in Southampton—for which the Grand Duke Constantine had made perfectly fabulous offers* to the owner—died. On the 13th, he lost his steward; and on the 6th of the following month (January 1866), the irreparable affliction of the death of his most estimable and accomplished lady (eminently wise, self-possessed, cheerful and courageous, although an invalid,) fell upon Capt. Hanham, and left him desolate indeed, of counsel as well as of companionship.

Valparaiso was reached on the 8th of February; and on the 21st, having thoroughly refitted for the grand feat of the voyage, the vessel sailed thence for England by the track before indicated, which, notwithstanding the very altered circumstances in which he was placed, and the sore temptation to hurry home to deposit in the last resting-place assigned for them the remains he had carefully preserved, Capt. Hanham would not abandon. Accordingly, though entirely dependent on himself the navigation of the yacht, justly confident in the character and seamanship of his mate, and the fidelity, endurance and zeal of his crew, the captain drew up such instructions for them as were best suited to meet the emergency of anything happening to himself, which from time to time afterwards, almost daily, he had to alter and adapt to circumstances.

On the 19th of March, corresponding to the time of our autumnal equinox, he entered the Gulf of Penas and the Sarmiento Channel round Byron's Island,—a spot to be recalled with all its repulsive-ness to the minds of all readers of voyages and shipwrecks as that on which the *Wager* was lost from Ansen's squadron in 1741. Byron's track, with his companions, from this place was to the northward, into an improving climate and region: this of the *Themis* was the reverse. From this date till the 23rd of May, when she cleared the Straits and again rounded Cape Virgin into the South Atlantic, the yacht was involved in this narrow intricate navigation, exploring either by herself or her boats promising inlets and reported channels, which often proved to

* Five hundred guineas were first refused, when *carte blanche* was vainly offered for the noble animal.

be barred,—examining anchorages, and places for supply, shelter, and security,—ascertaining the existence and correct positions of suspected dangers, and certifying known ones,—in all cases seeking for and not evading them; often, overrunning or falling short of the intended shelter for the night, compelled to unremitting exertion and anxiety in frost, sleet, darkness, and storm, and narrow winding water, for forty-eight hours at a stretch,—the captain's own skill, energy and pluck nobly seconded by his mate and crew, whose entire confidence, affection, and respect for him never wavered, bringing them through with unflagging cheerfulness, and without a single mishap—a phase of amateur seamanship surely well worthy of the public knowledge.

It may be added that at Rio, when our political relations with that country were entirely suspended, the *Themis* was honoured by a lengthened visit from the Emperor, who expressed high admiration at the enterprise, and in a very marked manner gave utterance to his thought that none but an English gentleman would find his account in it,—sentiments and manifestations of consideration which were fully evinced by the French admiral then there; by the captain of a Russian frigate found at Monte Video (who overtook him in the Straits on the 5th of September, anchoring near and towing the yacht when under weigh, till well clear of them on the 12th); by the Chilians and by the Spanish admiral and squadron on the coast; by Americans and others at the islands; in short, by all throughout under whose observation she fell, and not least by the captain and officers of the British steam frigate *Devastation*, fallen in with in the Straits on his return, to whose warm sympathy was added much valuable assistance in every desirable way.

Landing at Monte Video the principal cacique of South Patagonia and his daughter, whom Capt. Hanham picked up in the Straits (considerably to the alarm of his crew, by landing and advancing to a considerable group assembled some little distance from the beach), who could speak a little Spanish, and ultimately begged to be so conveyed, he quitted that place on the 12th of June, impatient for home; and it must not be omitted, being strongly indicative of the state of feeling that existed between owner and crew, that though, through an act of carelessness on the part of the cook or the boy, provisions fell very short indeed for the last two or three weeks, they so well understood and respected the captain's desire, that on putting it entirely to their decision, whether the yacht should be put out of her direct track to supply the deficiency, they unanimously decided to run all risks and keep straight on.

The *Themis* reached Falmouth on the 23rd of August, and almost immediately afterwards the whole crew attended the deposit in the spot prepared for them in Dorsetshire of the remains of her they all loved so well in life.

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(Concluded from page 205.)

England! Unto thy guardians belongs
 To meet all this! nor trifle with such wrongs.
 The change is radical;—it must be met
 With measures similar, or thou'lt be swept
 From that high station which thou once did fill
 Throughout the world,—at any nation's will!
 Thy fleets indeed, though wooden walls they were,
 Swept ev'ry sea,—with all the world astir!
 When nation had with nation to contend,
 Thy fleets would dictate to the foe or friend:
 And more than this, for well could they defend
 Thy shore from foreign enemies without end;
 Yet do thou beware! Those days are past,
 And change, inevitable change, moves fast!
 Iron and steam can soon thy shores surround;
 "Ready, aye ready," yet may thou be found.
 What though expensive outlay is required,
 Hast thou not as much iron as desired
 To enable thee to reconstruct thy fleet?
 Then do it quickly, if the foe thou'd beat!
 Remember that thy country's in the case,
 And to her safety minor things give place.

What craft was that which anchor'd at Spithead
 Some short time since?* A monitor, 'twas said,
 From New York came, merely herself to show;—
 A craft once seen, not difficult to know;—
 A nondescript she was declared to be;—
 Some raft, or dredging craft, unfit for sea.
 The Nautic world was taken by surprise,
 And seamen scarcely could believe their eyes;
 That such a craft had cross'd th' Atlantic wave,
 That stormy ocean she had dared to brave!
 Long, low, and flat, and nought to catch the blast;
 Nothing, indeed, had she in shape of mast:
 Nor stitch of canvas, to save from foe or wreck;
 And nothing to be seen above her deck
 (That deck 'bout two feet higher than the sea)
 Saving two turrets for artillery.

* The *Miantonomah* first anchored at Queenstown (Ireland) on the 16th of June, 1866; afterwards visited Spithead, Cherbourg, the Baltic, and then went to the Mediterranean.

Artillery! aye, such as ne'er was known
On the blue wave afloat, so overgrown!

Monstr' horrend' inform' ingens cui lumen ademptum,*
The visitor might exclaim, asking whence does the light come?
Provided he has happen'd to have read
That happy line of Virgil, which, instead
Of light, has sight; but which is nought amiss,—
For sight without light is all parenthesis:
And light on board this craft is very rare,
And so indeed is atmospheric air!
Nor need we wonder at the loss of these,
Since nine-tenths of her are below the seas;—
A mode of gaining shelter from the shot,
Which naval warfare deals out by the lot.
Such was the Monitor, as from New York sent
To give us information: kindly meant
To apprise us, and our attention draw
Towards their use, in any future war:—
That this same visitor of SIXTY SIX
Might some day show us her ill-natured tricks!

Why are Monitors meant to spread dismay?
Why are they thus paraded in this way?
There's something ominous in their name, that means
Advice:—and so to friendly warning leans.
On iron-clads, we think we can depend;
Can they from Monitors themselves defend?
The guns of Monitors, be it understood,
Will iron penetrate, as well as wood;—
No plated ship, however thick she be,
From guns of Monitor can e'er be free.
Look at the subject which way we may,—
The ships with heaviest guns will gain the day:
And heaviest guns will ever still be found
On Monitors used, all the world around:
And who so bold to say, How can it be
That we can't send a Monitor to sea?
While, with quick enterprizing spirit born,
Our own descendants send one round Cape Horn:
Another cross'd th' Atlantic, that we might see
And learn, that Monitors can go to sea

* The Latin scholar will remember this line in the Eton Grammar, where it is quoted in Prosody as an example of elision. Translated, it reads: "A horrible, mis-shapen, vast monster, deprived of sight." Not so inapplicable the comparison, considering her qualifications, to *this* monitor.

Like other ships :—a subject understood
 By Cousin John :—of iron or of wood.
 Say what we may to Cousin John we look
 To follow out a leaf from our own book :
 His Southern war has taught him to improve
 This powerful arm, with which we cannot move !
 Now long ago proposed by Captain Coles,—
 As yet unknown upon our naval rolls !
 Why then this formidable craft decry ?
 And why ourselves the Monitor deny ?
 Naval improvements are to England dear ;
 Who once upon a time had nought to fear
 From war on ocean, and who clear'd the seas
 Of hostile fleets,—then rested at her ease.
 Of ease, indeed, let England now beware ;
Cura quietem should keep her from snare !
 It augurs badly for our country's weal,
 England is slow of novelties to feel
 Th' importance due ;—they're coolly set aside,
 Until she finds they form another's pride.
 Thus of that Monitor : thy virtues more
 Were prized on enterprising Yankee shore,—
 Virtues, which England only could ignore !
 Befitting name ; for monitor thou art,
 Hereafter destined for important part ;
 When nations wrangle o'er some trifling stain,
 And War's red flag on ocean waves again !

Slow to appreciate, does the Muse complain ?
 Is England slow, experience to gain ?
 Nay ; let the little *Waterwitch* appear,
 For with her turbine wheel she'll make it clear
 That England can inventions carry out,
 When she does really see what she's about.
 That *Waterwitch* is a complete success ;
 For which she has the *Nautilus** to bless :
 And fairly makes good thirteen knots an hour,
 With engines only of some small horse-power.
 This hydraulic craft (as she's rightly named)
 Displays the principle by Ruthven claim'd :
 One which, thus establish'd, will yet be known
 In some other waters besides our own.

* The first appearance of the *Nautilus* on the river Thames was in April 1866. The *Waterwitch* is the result of the copy of her mode of propulsion by the Government ; the *Waterwitch* being a small gunboat of a little over 200 tons, while the *Nautilus*, smaller, was, like her namesake, a mere shell of a vessel, built to attract attention to this valuable principle.

More there may be still; yet not for Muse to note,
As not included in this year to quote.

Another feat the Muse has yet to sing—
Her humble meed of praise she has to bring—
In admiration of that enterprize
Which led our Yankee cousins to despise
And set at nought the comforts of a cruise
On summer seas, or winter, nor refuse
An ocean voyage race to undertake
Across th' Atlantic, merely for the sake
Of some small stake; but more perhaps to show
That Yankee yachts care not; blow high or low,
In summer or in winter, to sea they'll go!

Yachting, of course, must be for pleasure meant,
And is well worthy of encouragement:
'Tis manly, daring, healthy, and sublime,
But mostly follow'd in the summer time.
A Briton's pastime essentially it is,
Extensive seaboard happily is his;
And thus, with salt water nearly at his door,
To sea he rushes, like a bird to soar
And revel in its healthy atmosphere,
Without a trouble and without a fear:
The British yachtsman can achieve all this,
Find health and pleasure there, and nought amiss;
And yet our Yankee cousins can do more,
They'll sail their yachts in winter by the score.

“Quick, trim her sails, let the sheets feel the wind,
“And I'll warrant she'll soon leave the seabird behind:

• • •
“What to her is the dash of the storm-ridden main?
“She has braved it before, she will brave it again!”
Was this the spirit of that match to Cowes
From Sandy Hook? our summer yachts to rouse
From winter moorings and their winter sleep,
That seldom venture on the ocean deep.
How kind of these Americans to show
Our yachtsmen here, the way their yachts can go
Through summer storms, or winter's blinding snow!
Have they not shown them how to set a sail?—
And now they dare the winter's trying gale:
All this to tell us what their craft can do,
And hinting quietly “Can't you come too?”
“With lightnings above us, and darkness below,
“Thro' the wild waste of waters right onward we go.”

While sounds of voices, wafted o'er the wave,
 In jovial friendship give the English stave,
 "Ye gentlemen of England, who live at home at ease,
 "How little do ye *know* of the *pleasures* of the seas!"

"The" pleasures "of the seas," replies John Bull,
 Indeed? They will require a good strong pull
 To get our yachts upon a winter race,
 On any stormy ocean to embrace
 A sporting offer; for the wat'ry treats
 Neptune provides along with dripping sheets,
 For those who do not understand his feats:
 They'll do for boys, or those who do not know
 The ills before them, when to sea they go:
 To us, friend Jonathan, you know the gout
 Requires us to mind what we're about:
 Smooth water, and a flat sail if you please,
 We'll have; but we must do things at our ease.
 What pleasure can there be to get half drown'd,
 Unless one means to sail the world around?

'Twas blowing half a gale on Christmas Day,
 And Cowes engaged in Christmas pastime lay,
 When swift (with press of sail) a yacht there flew
 Into her roads, determined to outdo
 All other craft; and much to the surprise
 Of those she pass'd, who all, with wond'ring eyes,
 Said, that her rapid speed was like the flight
 Of some poor tired bird, glad to alight,
 After a long and trying effort made
 To reach the land (fatigued) from foreign glade;
 American her flag, and soon she proved to be
 One of a race that was made up of three!
 Snug craft she was,—*Henrietta* was her name,—
 And with two others from New York she came:
 She'd made her passage under fourteen days,
 And was admired with no end of praise:
 Ere next day her competitors arrived,
 But of the prize, she thus had them deprived.
 Another novelty is this to mix
 Among the novelties of SIXTY SIX.

While thus, on Nauticals, the Muse dilates,
 A grave event takes place, that yet awaits
 The course of justice. Hard 'tis to believe
 That men there are so base as to deceive
 Their fellow-men; and under business' cloak,
 In spite of certain perils of the sea, t' invoke

The cause of fraud! e'en to risk life itself,
 Besides discovery, for the sake of pelf!
 Yet so it is:—idleness at the root
 Of all evil is; and more than this, to suit
 Their avarice, with idleness combined,
 Would turn the empty heads of all mankind,
 Unable to resist Satanic power,
 And led by fatal influence of the hour!

A ship from England sail'd, the *Severn** named;
 "Potted" she was to be, and no one blamed:
 Clear'd out for China when to sea she went,
 Yet to reach China she was never meant!
 A "potted" ship! the reader will exclaim;
 What means this term? he asks, and whence it came?
 Some one, indeed, has said, "What's in a name?
 "The rose without it would have scent the same."
 The uninitiated have yet to learn
 It means to *sink the ship*, at some fair turn
 During the voyage; or to *scuttle* her,
 In nautic terms; in fact, a settler!
 Briefly "*ship murder*," shore-folks' term to quote.
 Ships pierced with holes are seldom meant to float;
 And yet the crew may save themselves by boat,—
 Provided that be done in weather calm,
 So fine indeed to threaten no more harm,
 Or to create more reason for alarm.
 Although 'tis done so many miles from land,
 The risk is great they'll ever reach the strand;
 For this there's little care, some ship at hand
 Will pick them up, and settle all demand.
 Far greater risk, besides, there yet remains.
 The plot complete, if known at once explains
 Why in fair weather thus a ship should sink,
 And people puzzled know not what to think:
 So quietly pay all insurance bills,
 And set them down to ocean risks and ills!
 Thus was the *Severn* served, a course of late
 Of other ships supposed t' have been the fate;
 All which, with too good reason, it is fear'd,
 So unaccountably have disappear'd!

'Tis wonderful that any men can brave
 The certain risk, and many dangers grave,
 Of death by drowning, or found out, one sees,
 That must beset them all in plots like these!

* She sailed from the Welch coast in June 1866.

Poor human nature, how 'tis led astray
 Money to gain, no matter what the way.
 In such transactions he has to deceive
 The Underwriters, and make them believe
 That goods insured are on their way abroad,
 And bribe confederate parties to the fraud!

* * * *

Justice has reach'd the culprits here concern'd;
 The chief of all, his evidence has turn'd
 Against the arch-originator's care!
 Relenting, he disclosed the whole affair.
 This was not the first ship he had sent down
 To depths below! Another, named *Jane Brown*,
 Was served the same; and many *more besides*,
 Unknown, unheeded, buried, 'midst the tides
 And currents lost, of ocean far and wide,
By others in command; content to hide
 Their evil deeds with that impervious veil,
 The ocean, grave of many a gallant sail!
 That sea, where ships thus lost now lie conceal'd,
 But which, hereafter, are to be reveal'd!
 What revelations must the ocean make,—
 What evil deeds disclose for Mammon's sake!
 Sad, dreadful tales will one day all be told,
 How wrongs were done; and how for sake of gold,
 That many ships with all on board for gain,
 Wasted their treasures in the desert main!
 The life of man himself is not too dear
 To sacrifice for man in mad career!
 Why should the Muse dilate on this sad scene
 Of human frailty? rather let her screen
 The miserable doings of a few,
 Who quit the path of virtue to pursue
 The phantom Wealth; and thus draw down disgrace
 On that profession where they're out of place!
 The outraged law its penalty demands,
 For sins committed against its commands:
 That penalty to pay must yet remain,
 And with it too of character the stain.

Sad SIXTY SIX! and couldst thou not retire
 Unless our Crystal Palace* were on fire?
 That pile of brilliants gleaming from afar,
 As some colossal diamond's glittering star;

* The fire took place on the last Sunday of the year,
 December 30th; and is believed to have arisen from over-
 feeding with fuel, as well as some inattention to it.

That beautiful temple of specimens in art
And Nature's gifts, where sculpture bears its part :
That exhalation of rivalry at will,
Containing proofs of every nation's skill ;
Specimens of toil from every land,
Commencing with Prince Albert's guiding hand ;
That reproduction of the fairest gems,
The ornaments of crowns and diadems ;
Gems of each land, and Nature's gems besides,
With taste arranged, that stately Hall provides ;
That wondrous tale of every country's best
Work of mankind, both from East and West ;
That noble structure which the era marks
Of friendly strife in edifying works ;
That sweet retreat for quiet-loving age,
No less than sports in which the young engage ;
Where gardens beautiful, with ample ground,—
Where English landscape and the French abound,—
Where pleasing gardens of Italian grace,
All tend t' enrich and beautify the place ;
And fountains, second only to Versailles,
Delight the eye, which on their beauty dwells ;
All make a paradise of " Home, sweet home,"
Where Art and Pleasure hand in hand may roam ;
Where fêtes and festivals have each their sway,
And Union celebrates its natal day ;
For ceremonial services all round,
Fit celebration no where else is found ;
For drama easy, and for concerts famed,
All accommodated, and pleasure gain'd !
Such the attractions for the old and young,
Rich and poor, cultivated and unsung ;
For all the world, of every degree,
Our Crystal Palace has its sympathy !
And were all these endearments to be lost,
These popular amusements to be cross'd
And blotted out ? Of recreation sweet,—
Of tired London's gladdening retreat,—
This great attraction ! where from smoky air
All the world rushes, and enjoys " its Fair !"
This lost ? Impossible ! forbid the thought,
Such sweet enjoyments are too dearly bought
Thus to be lost, or thus to nothing brought !
And happily that fire was set at nought :
Yet not before much mischief had been done
In tropic beauties, where that fire begun ;
In models too, those exquisite designs
Of engineering skill, and mimic lines

Of England's shipping, modern and remote,
 Were lost indeed, the Muse laments to quote;
 Never to be replaced,—never more supplied:
 Of Egypt, Assyrian, and the Alhambra's pride
 Sad work was made by fire's consuming stride.
 Further it would have gone, but interposed
 A cotton screen, its further progress closed!
 Enough was done, and Sunday work was braved,
 The fire stopp'd, the Crystal Palace saved.

Some reconstruction has been since begun,
 But long 'twill be ere all this work is done:
 Such noble deeds for universal cheer
 Would have been lost by this disastrous year!
 Those Crystal Halls are destined yet to see
 Ages to come of fair prosperity!
 Success be theirs; good management secures
 Freedom from evils, which experience cures.

And thus the evil deeds of SIXTY SIX
 The Muse has traced; but now with them would mix
 One gracious deed! A multitude of sins
 This will conceal; for it is one that wins
 The praise and admiration of the world.
 Th' Atlantic Cable's glorious flag's unfurl'd!
 That marvellous metallic cord was tried
 Long, long ago; as frequently denied
 Success to efforts, oft as they were made,
 To see it in the depths of th' Atlantic laid:
 Repeated failures had experience taught
 In this most arduous work, that nobly fought
 With all the troubles incident to great depth
 Of sea and currents strong, that intercept
 A vessel's course. At length they're overcome;
 The cable* safely laid, reclines as some
 Huge, lengthy reptile of the serpent race,
 Sleeping securely in its oozy place
 On ocean's bed; on which that ocean rolls
 At liberty between the frigid poles;
 Anon betraying novel proofs of ire,
 Spitting out sparks of bright electric fire!
 Great, wondrous fact, and yet more marvellous still
 Are those phenomena which Nature's laws fulfil.

* This cable was completely laid across the Atlantic Ocean,
 from Valentia to Heart's Content Cove in Newfoundland,
 between the 14th and 26th of July, 1866.

The failure of the old, preceding year,
 Had left a cable* halfway from Cape Clear :
 Its place was known, as there it lay aground,
 By observation, now as easy found.
 To finish this with a new end remain'd,—
 And then a second cable would be gain'd !
 Enough ! To Moriarty was assign'd
 The task of this old cable's end to find :
 And well 'twas done ; with observation clear
 He pick'd it up, well knowing how to steer.
 Thus a new cable was no sooner laid,
 Than one its equal by its side was made.
 Another glorious feat thus here was seal'd,—
 Two lines, instead of one, now lay reveal'd ;—
 To share the work hereafter to be done
 Between Great Britain and her elder son !

And, ere the Muse proceeds, she fain would note
 Distinguish'd names ; of efforts she would quote
 Results, of which we surely may be proud,
 Acknowledged o'er the world with praises loud :
 Nor should the ship herself without her share
 Be left, for well that cable did she bear :
 Well the *Great Eastern* for her work was framed ;—
 Her captain, Anderson, well his part sustain'd ;—
 In navigation, Moriarty was adept ;—
 Canning, with Clifford, electric work well kept ;—
 Another yet, the name of Cyrus Field,
 Will the true pattern of exertion yield :—
 All were resolved t' achieve the end desired, †
 Thus the *Great Eastern* was herself inspired !

Some one foretold of steam's extraordinary pow'r,
 And treated of the lightning's speed per hour :
 Now both are proved, the last some facts display,—
 The Muse delights to treat of in her lay.
 'Twixt Newfoundland and Ireland, measured clear,
 Some fifteen hundred miles of space appear :

* Broken on the 2nd of August, 1865. Picked up, and completed with a new piece to Heart's Content, between the 2nd and 7th of September, 1866.

† The following gentlemen received the honour of knighthood, on account of their zealous promotion of the great enterprise which resulted in the successful deposit of the Atlantic Cable:— Sir Daniel Gooch, M.P.; Sir Curtis Mirander Lampson, Bart.; Sir William Thompson, LL.D., F.R.S.; Sir Richard Atwood Glass,—the above gentlemen being directors of the company; Sir C. Canning; Sir J. Anderson; Staff-Commander, R.N., H. A. Moriarty, C.B.

The electric fluid through this distance flies
 In one-third of a second, to surprise
 Us mortals, who by this can clearly read
 Th' astounding fact of lightning's wondrous speed !*

Here let the Muse relate a modest tale
 About a tiny craft from Yankee dale ;
 Her size, not more than ordinary boat,
 A Lilliputian ship, with name to quote,—
 “*Red, White, and Blue,*” from New York dared to cross
 The broad Atlantic, and to risk the loss
 Of all on board ; her captain and his crew,
 Himself, his mate, and faithful doggee too ;
 No very large ship's company, 'tis true.
 “ Above the bounding billows swift they flew,”
 Safely they made the voyage here direct
 In forty days, and oft were nearly wreck'd.
 Their navigation reach'd our Crystal Hall,
 Where she remain'd th' astonishment of all ;
 Who looking, wonder'd o'er and o'er again,
 How that small barque could cross the stormy main.
 The daring feat was done ; her chart display'd
 The tedious track this little ship had made ;
 Her captain, Hudson, reputation gain'd ;
 His ship triumphant in the Hall remain'd ! †

Momentous year may SIXTY SIX be styled,
 With serious failings it may be reviled ;
 And heavy failures too will claim their day
 'Midst those of SIXTY SIX, now pass'd away.
 Great its vicissitudes, yet greater still
 That mystic spell which time and space doth kill ;—
 When words can fly with lightning's rapid speed
 Thro' space, in which there's nought that can impede ;

* In reference to this subject, the following is an extract from the *Athenæum* of February 23rd :—

“ In the course of making the physical researches necessary for ascertaining, by the passage of electricity through the Atlantic cable, the difference of longitude between America and England, it has been found that the time required for a signal to pass through the Atlantic cable is thirty-one hundredths (0·31) of a second. This is equal to a velocity of 6020 miles a second ; considerably less than the speed of the electric fluid through land lines.

† On the 16th of August she was anchored in Margate Harbour, 38 days from New York ; and in September was at the Crystal Palace as a curiosity. She has just sailed for Havre, and we understand is to appear at the Paris Exhibition. Her length is 28 feet.

When nation can with nation thus discourse,
 America and England have recourse,
 Each to her passing politic events,
 And thus communicate in every sense ;—
 Then indeed has blessing been bestow'd
 On nations which can thus improve the road
 Which to true civilization leads,
 To noble works, and to illustrious deeds !
 England with her children has thus been tied,
 Long may that happy union abide :
 Such the transcendent gift of SIXTY SIX,
 Not without evils still to intermix.

Evils indeed ! Vicissitudes of Banks,
 Large companies, and firms, have thinn'd their ranks,
 Where busy speculation stalks about,
 Serene, self satisfied, yet full of doubt,—
 How schemes may take, or measures prove correct,
 And sink or swim with speculating sect !

How shall the Muse descant on filthy gold ?
 How enter on account of "bought" and "sold ?"
 On those particulars, which character involve,
 Transactions dark, which capital resolve
 In air ! What once was tangible and sound,
 Financial crisis dashes to the ground !
 The merchants' failures all involve a crowd
 Of helpless mortals, who thus prostrate, bowed
 Down to the earth, are crush'd and left of late,
 With ruin'd fortunes to repine at fate !
 Alas, whole families have been thus serv'd ;
 The springs of trade itself have been unnerv'd :
 Incalculable loss has been sustain'd,
 And credit, too, that ne'er will be regain'd ;—
 Riches on riches to the winds are thrown,
 Some public made, but many more unknown.
 Such was the crisis of the month of May,—
 Preceded by bad omens in their way ;
 When companies of rich, high sounding name,
 Their *prestige* lost, and now to ruin came !

Who can forget, that witness'd the dismay
 Of crowds of faces on that dismal day,
 Which stands recorded as th' eleventh of May ?
 When families bereft of all they had,
 To beg were left in consternation sad :
 Their chiefs to do the toil of life again,
 If toil they could when life was on the wane,
 And for more business they might look in vain ;

For commerce paralyzed, 'twas then too late,
 Their day was gone, and they must yield to fate.
 Nor did the Bank of England too escape
 The pressure of those days in fiscal shape;
 When happily the Government stood by,
 And thus was hush'd that loud commercial cry.*
 Many a scene of sorrow pass'd unknown,
 Where affluence was gone, abundance flown,
 Nought but abiding love was left alone!
 And these were all thy works, dull SIXTY SIX;
 Yet one redeeming act thy claim will fix
 In mem'ry's grateful tablet of the mind,
 That thou didst come but to distract mankind.

Why should the Muse to thee impute the sad
 Transactions dark, that in thy course have had
 Their birth? Has it not been most truly said,—
 "Of every evil since the world began,
 "The real source is not in God, but man!"
 Go then, sad year, to predecessors go,
 The Muse confirms what all the world must know,
 While she records repeated tale of woe;
 'Tis not of God, but man will have it so.

ARRIVAL OF THE MISSING WHALESHIP "DIANA," AND DREADFUL SUFFERINGS OF THE CREW.

We find the following narrative in the *Scotsman* of the 11th April, detailing sufferings of no ordinary kind.

A correspondent in Lerwick favours us with the following account of the arrival at Shetland of the whaleship *Diana*, of Hull, which got frozen up in the ice at Davis' Straits last season, and respecting the safety of which grave fears were entertained:—

"Another dismal chapter in the annals of arctic voyages has been completed by the return of this ill-fated vessel. Last May she sailed from Lerwick with a crew of fifty men all told, of whom about thirty were Shetlanders and the rest English, and was last heard of beset in the ice in the month of September. On the 2nd instant, she sailed into Rona's Voe, in Shetland, with all her fifty men on board,—living, dying, and dead. No one was missing. Her captain, with nine of his men dead by his side, lay on the bridge. Five men were fit for duty, two were able to crawl aloft, and the remainder were lying below sick or dying. As the ship came into the port, another man died.

* This took place about the 16th of August, 1866.

“The sight which met the eyes of the people from the shore who first boarded her cannot well be told in prose. Dante might have related it in the *Inferno*. Coleridge’s Ancient Mariner might have sailed in such a ghastly ship,—battered and ice-crushed, sails and cordage blown away, boats and spars cut up for fuel in the awful arctic winter, the main deck a charnel-house not to be described. The miserable scurvy-stricken, dysentery-worn men who looked over her bulwarks were a spectacle, once seen, not to be forgotten. As the tidings of the ship’s arrival went through Shetland, the relatives of her crew journeyed to her to meet their living and to claim their dead; and by instalments, as they were fit to be removed, the survivors were brought to Lerwick or to their homes in the island. Some, not able to be transported, are still in the ship; but the bulk of the survivors have left her. Most pitiable sights of all were the ship’s boys, with their young faces wearing a strange aged look not easily to be described. We are enabled to give a narrative by one of the men in his own words, which in its simplicity and absence of all *ad misericordiam* statements is the more affecting. But we would not be justified in not publishing the name of the brave surgeon of the ship, who, by his unceasing exertions and admirable example, did so much to save those of his shipmates who have returned. ‘He was one of a thousand,’ said one of them; ‘we would have perished without him.’ His name is Charles Edward Smith, of London, once a student in Edinburgh University, and he deserves all the honour a brave man can be paid.”

Narrative of one of the Crew.

We left Lerwick on the 9th of May 1866, with a crew all told of fifty men, of whom about thirty were Shetlandmen and the rest English. We crossed Melville Bay in June, got two whales in Lancaster Sound, and were in Pond’s Bay (the chief fishing-ground) in July, but continued easterly winds prevented the fishing. Towards the end of August and in the beginning of September were beset in the ice, but got clear again, and ran to the southwards with every prospect of getting away, seeing nothing but open water for fifty or sixty miles around from the masthead, when one morning, at daybreak, we found the ship close on to solid ice stretching all to the southward, and almost instantly it closed around, and the ship was fast beset. We were then to the South of Coutt’s Inlet. The captain mustered us all aft and spoke to us, and we all agreed to go on half-allowance from that time. This was on Sunday, the 23rd of September, and next morning we began on that allowance,—namely, 3 lbs. bread, and 3½ lbs. meat, with one flour day, per week. I used to put myself on a smaller daily allowance in the first of each week, so that, in the end of it, I should have a little more to enable me to start better next week. Like, on Monday morning, when each man got his week’s allowance served out to him, I would break a biscuit in four pieces, and tie each quarter up in a corner of my handkerchief, and take one piece at each of the four meal times; thus I had a little over about Thursday or Friday, and could then have more. Many others did the same, but some wouldn’t husband theirs,

and would eat as long as it lasted,—so that on Saturday and Sunday they had none.

The *Queen*, of Peterhead, the *Intrepid*, of Dundee, and a steam whaler—too far away to be known—were the last ships we saw. The *Queen* was pretty near us, and so was the *Intrepid*, when we were beset; but the former got into a lane of water, and worked away down to the southward; and the *Intrepid*, having more steam-power than we, shoved through the ice, and in six hours we lost sight of her. Then we were left alone. All October and November the ship kept drifting in the ice to the South, at the rate of sometimes 17 miles a day at the fastest, and about 10 miles of daily average. Strong northerly winds pressed the ice to the southward most of the time. When off Exeter Sound Settlement, in October, we made a signal by burning oakum, pitch, and oil, slung to the main yardarm; but it was heavy weather at the time, and blowing hard, so it didn't flare up well, and we got no response.

On the 23rd December we were in Frobisher's Straits; and drifting between two islands, we got some heavy ice-nips, and the ship sprang a leak, so that we had to put on all hands to the pumps to keep her afloat; but being doubtful whether she could stand it any longer, thought it best to leave her and rig a tent on the ice,—which we did, and got all our clothing, bedding, and provisions out of the ship. In one way the tent was better than the ship; because, owing to the pressure of the ice on the ship, she constantly cracked and creaked with such a dreadful noise that you couldn't get a wink of sleep when you did turn in; but then the tent was so fearfully cold, as you had only one thickness of canvas to shelter you, that men couldn't stand it. Capt. Gravill was the first night in the tent, but suffered so much from the cold that he went back to the ship in the morning; but several Shetlandmen were two or three days and nights in the tent. The captain died on the 26th December at ten minutes past seven in the morning, and we dressed the body and wrapped it up in canvas, and laid him close to the port side of the bridge, so that if the ship was crushed in the ice we might easily drop him into a hole alongside. We made a coffin too for him, and had it ready in case we should get clear.

The want of fuel came now to be as hard on us as the scarcity of food. We had spent all our coal and a great quantity of spare wood in trying to steam out when we had a chance in the fall of the year, and now we burnt all spare spars, warps, and all our whaleboats but one. We allowed one oil cask every two days for the cooking, and we put that fire out for the day at dinner-time. Our beef got done in January; coffee and sugar about that time also; and our last tea was served out in the beginning of February. Tobacco was likewise all gone, and some of us tried to smoke tea-leaves and coffee-grounds. The tea-leaves burnt the mouth badly, but the coffee-grounds were not so disagreeable. I do assure you it was precious cold, specially at night, when your breath froze in the top of your berth, till the ice

came to be three or four inches thick, and we had a day every week to break it off and scrape it down with the ship's scrapers.

The men began to get downhearted, and some of them were so weak that they dropped at the pumps. The doctor did everything he could for them, and was all a man should be—taking his watch regularly and working as hard as any one; but he couldn't save them. Scurvy began with them, and then they couldn't eat what little food they had, owing to their gums being so bad; and many of them had dysentery. The first two who died—Forbes Smith and Mitchell Abernethy—we made coffins for, and laid up beside the captain on the bridge; but we hadn't wood for any more. The men were very quiet and resigned, though of course there was a difference among them, and some were more contented than others.

At last, on the 17th March, with clear moonlight, we drove out between Resolution Islands into the broken ice. There was a great deal of "young" ice broken by the heavy ice, which protected the ship very much, although she struck heavily at times, and damaged her rudder. William Lofley, one of the harpooners, acted as navigator. When we got into the open sea, and the ship began rolling and pitching, the leak got worse, and we had enough to do to keep her afloat, as there were not many able to work.

On Sunday, 31st March, we exchanged longitudes with a ship, and that very afternoon we sighted land, just two weeks from our leaving the ice. But, unluckily, we took the land we saw to be Orkney, and, wanting to go to Shetland, we stood away to the northward, along the West side of Shetland, all the time supposing it to be Orkney. We beat about there till Tuesday morning, when the mate said he would take the first harbour he could find, and we ran her into Rona's Voe that day at noon, finding to our surprise that we had been off Shetland all the time. Had we been out another night, none of us would have stood it. The night before, three of my watch dropped down at the pumps, and only four of us were able for duty, and they not much to speak of.

On Sunday night, when we were carrying on her with double-reefed topsails, the jib halyards gave way; and out of both watches, three were all who could go out to stow it, and they weren't fit, and it blew to ribbons. Only another man and I could go aloft to stow the main-topgallant sail when we brought up, and we were just able to crawl; and when we came down we were done up. We came into that port with nine corpses lying on the bridge, and after we had anchored, one of the sick hands called out from his berth—"Take away this dead man from me;" and then we found that he had been dead for some time; so that was the tenth, and we laid him on the bridge too. The people in the neighbourhood were uncommonly kind: I never met with so much attention in all my life. They would have done anything for us, and sent on board men to help us, and supplied us with all kinds of provisions. When I left the ship to come to Lerwick with the news of our arrival, a gentleman close by gave me his own topcoat to travel

in, and I found the good of it too. After I left the ship, another man died, and there are two or three more who won't live, I doubt; but the boys, although they are pretty bad, will get over it. I feel myself a deal better than I did when I landed.

Another correspondent sends an account of the arrival of the *Diana* and the sufferings of the crew; but the foregoing statement embodies all the details which he communicates, except the following:—

“On sighting the land, it was resolved to run the ship ashore in the came off to them from the shore. The man at the wheel was so excited first convenient place they came to. On entering Rona's Voe a boat when he saw the boat that he fainted. With the aid of the men from the shore the ship was brought to an anchor, and a messenger dispatched to the agent, who sent a vessel with coal, &c., and twelve men to bring the ship to Lerwick. About twenty of the crew are in a fearful state with scurvy, some not expected to live, and the rest quite unfit for work. Every possible attention has been paid to the men since their arrival. The ship sprung a leak in December, and has only been kept afloat by incessantly working the pumps. The surgeon, Mr. Charles E. Smith, deserves great credit for his exertions, not only in his own profession, but also in assisting to work the ship. Had it not been for his attention to the men, it is doubtful whether any of them would have survived. The captain called the crew together shortly before his death, and told them how he felt under the responsibility of having the charge of fifty-three souls, reminded them of what he had done for their rescue, and then prayed with them. The occasion was felt by all to be a very solemn one. Capt. Gravill was a very pious man.”

ROYAL NATIONAL LIFEBOAT INSTITUTION.

On Thursday, the 4th of April, this institution made the following distribution of funds with which they are entrusted for the object of saving the lives of seamen from wreck on our shores.

A reward of £13 10s. was voted to the crew of the institution's lifeboat stationed at Theddlethorpe, on the coast of Lincoln, for saving, after repeated attempts, the crew of sixteen men, a pilot, and a passenger from the barque *Centurion*, which during a heavy gale had stranded and become a total wreck on the Rose Sand, off Saltfleet, on the 18th of March.

£11 10s. was also voted to pay the expenses of the society's lifeboat stationed at Donna Nook, on the coast of Lincoln, in going off on the 10th of March in a gale of wind and very heavy sea, and rescuing

the crew of four men from the small boat of the schooner *Squire*, of Yarmouth, which had become a total wreck off Donna Nook.

£7 5s. was also voted to pay the expenses of the institution's lifeboat at Fowey, Cornwall, for putting off on the 17th of March, in reply to signals of distress during a heavy gale of wind, and bringing safely ashore the crew of five men of the schooner *Devonia*, of Padstow, which had anchored in Polkerris Bay. The vessel, fortunately, rode out the gale, and the men were again put on board the following day.

£13 was also voted to the crew of the institution's lifeboat at St. Ives, Cornwall, for saving the crew of five men from the schooner *Mary Lewis*, of Aberystwith, which had stranded and sunk off St. Ives Pier during a heavy gale of wind on the 17th of March. The Caistor lifeboat of the society was also the means of assisting to a place of safety the Prussian schooner *Louise* and her crew of seven men, which vessel was in a dangerous position in the Wold, off Winterton, on the 7th of March.

£7 5s. was likewise granted to pay the expenses of the institution's lifeboat at Selsey, in putting off during a gale of wind and bringing safely ashore the crew of the brigantine *Sarah Ann*, of Jersey, which had become a total wreck off Selsey on the 18th of March. The Holyhead lifeboat of the society was also the means of bringing ashore fourteen men from the stranded schooner *Nicolo*, near Holyhead, on the 30th of March.

£6 was also voted to the crew of the society's lifeboat at Drogheda, for saving three men from the schooner *Mary*, of Dublin, which during a fresh gale had driven on shore on the North Wall, Drogheda Bar, on the 23rd of March.

£18 13s. 6d. was also voted to pay the expenses of the society's lifeboat at Tramore, in rescuing the crew of ten men of the barque *Wild Horse*, of Windsor, N.S., which had stranded during a gale of wind on Tramore Beach on the 23rd of March.

£13 3s. was also granted to pay the expenses of the institution's lifeboat at Tyrella, in rescuing six of the crew of the sloop *William*, of Paimpol, which had stranded during a fresh gale of wind in Dundrum Bay on the 23rd of March.

£9 3s. was also voted to pay the expenses of the society's lifeboat at Wexford, in rescuing, with the assistance of a steam-tug, the barque *Loretto*, of Liverpool, and her crew of fourteen men, from a dangerous position near the Blackwater Bank, during a gale of wind on the 23rd of March.

£15 was also voted to the crew of the Appledore lifeboat, for going out in a gale of wind and heavy sea, and rescuing the crew of three men from the rigging of the brig *Harmony*, of Bideford, which had gone on the South Tail, Bideford Bar, on the 29th of March.

£21 was also voted to pay the expenses of the institution's lifeboat at Palling, in saving the whole of the crew, six in number, from the French schooner *La Prudence*, which, during a fresh wind and heavy sea, was wrecked off Palling on the night of the 30th of March.

Rewards amounting to £125 were also voted to pay the expenses of the society's lifeboats at Brooke, Poolbeg, Penzance, Plymouth, Howth, Donnanook, Sutton, Selsey, Pembrey, Aberystwith, and Cromer, for various other services to distressed vessels during the month of March.

£5 5s. was also ordered to be presented to seven men for putting off in a whaleboat belonging to the Howth coastguard station, and after repeated attempts saving six men from the schooner *William Henry*, of Barrow, which, during a heavy gale of wind, had stranded on Baldoyle Bank on the 18th of March.

Various other rewards were also granted to the crews of different shoreboats for saving life from shipwreck.

It was reported that his Majesty the King of Denmark had granted 200 rix dollars to the crew of the Ramsgate lifeboat, in addition to what the Board of Trade had previously given them, for the noble services which they rendered to the crew of the Danish barque *Aurora Borealis* on the 6th of January last.

Her Majesty the Queen had sent her annual subscription of £50 to the institution, and the same was gratefully acknowledged.

It was reported that the lifeboat which the institution had sent to the Paris Exhibition had attracted the special attention of the Emperor and Empress of the French.

New lifeboats were about to be sent by the institution to Falmouth, Exmouth, and New Brighton. The cost of the lifeboat for Falmouth had been generously contributed by the city and county of Gloucester.

Messrs. Rothschild had liberally increased their annual subscription to the institution to £10 10s.

An effort was being made by the ladies in Edinburgh to raise a sufficient sum to meet the annual expense of the Edinburgh Working Men's Lifeboat, stationed at Port Logan.

Payments of £2,200 were ordered to be made on various lifeboat establishments.

The plan of the safety fishing-boat of the institution was exciting considerable attention, and two of the boats which had been tested on the coast of Scotland had given great satisfaction.

A report was read from Capt. David Robertson, R.N., the assistant inspector of lifeboats of the institution, on his recent visits to its stations on the coasts of Norfolk and Suffolk.

The thanks of the institution, inscribed on vellum, were ordered to be presented to the Rev. Luke H. Wiseman and Thomas Smith, Esq., for their valuable co-operation, through the medium of the *Methodist Recorder*, in collecting nearly £800 to defray the cost of the *D. J. Draper* lifeboat.

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 31, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 222.)

All bearings are magnetic.

Name.	Place.	Position.	F. or R.	Ht. in Feet.	Dist. in Mins.	[Remarks, &c. Bearings Magnetic.]
17. St. Hellers, Old North Pier	Jersey	Channel	..	..	..	Est. 1st May, 1867. Discontinued and two Green lights substituted. (a.)
18. Aux Cayes	St. Domingo, S.W. coast	On E. end of I. Vache in 18° 4' 5" N., 73° 34' 5" W	F.	..	12	Est. 19th November, 1866. Light Red.
Jacmel Bay	St. Domingo, S. coast	On white cliff in 15° 12' N., 72° 34' W.	F.	..	12	Est. 19th November, 1866. To show position of Bay at night. Light Red.
Port au Prince	Ditto	.....	F.	..	..	In a position close to the islet for the use of Liverpool steamers. (b.)
19. Andaman I. Cocos, Table Island	Bengal Bay	14° 8' 5" N. 98° 18' E.	F.	200	20	Est. 15th February, 1867. (c.)
20. Gaspe Bay, on Peninsula	.....	N.W.b.N. 12 miles from Cape Gaspe	F.	40	..	Only during the navigation season. (d.)

F. Fixed. Fd. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

(a.) 17.—The two lights will be *green* lights, one, the outer, placed on the western angle of Albert pier, the other on the Esplanade parapet, and bearing from each other N.E. $\frac{1}{4}$ N. and S.W. $\frac{1}{4}$ S., distant 633 yards.

Directions.—The inner light will not be visible to vessels approaching the harbour from the eastward at low water until it comes on a bearing N.E. $\frac{1}{4}$ N.

The two lights in a line will lead midway between Hinguette and Grune St. Michael, but over a sunken rock which lies at a distance of 2 $\frac{1}{2}$ cables outside the high head of Hinguette, and over which there is only 7 feet water at low water springs; it also leads between the Oyster rocks and the Dogs nest and midway between the Cloches rocks, clear of all danger.

Variation 20° 50' Westerly in 1867.

(b.) 18.—This harbour light at Port au Prince is often more brilliant than, and can be seen before, the light on the point, navigators are cautioned not to mistake the one for the other.

(c.) 19.—*Directions.*—This Cocos light, at the southern limit of the Preparis S. channel, for vessels passing between the Gulf of Martaban and the Madras coast and between Calcutta and the Malacca Straits or China, will form a good point of fresh departure in the S.W. monsoon, while the Alguada reef revolving light, at the N. limit of the Preparis N. channel, is a good point of fresh departure in the N.E. monsoon. By shaping a course to make either of these lights, the dangers about Preparis island are avoided.

All vessels using these Preparis channels, in the S.W. monsoon would en-

deavour to make the Cocos light, and in the N.E. monsoon, the Alguada light, excepting powerful steamers between Calcutta and the ports of Pegu, which would use the latter in both monsoons.

Table and Skipper islands are steep to, with no dangers to seaward; there is a passage between them and the great Coco island, but it is not safe to attempt it without a pilot.

(d.) 20.—The following are bearings from it:—Cape Haldimand, South; Gaspé Basin, W.½S.

The light is intended to serve as a guide to vessels passing between Sandy Beach and the main land opposite.

Variation 26° 20' Westerly in 1867.

JAPAN,—West Coast.

The following information, dated January 1867, respecting a sunken rock recently discovered inside Wilson island, on the west coast of Kiusiu, has been received from Commander Charles Bullock, H.M.S. *Serpent*.

Serpent Rock, three quarters of a mile from and inside Wilson island, has only from 9 to 12 feet of water on it. From the rock the N.E. point of Wilson island bears N.N.W., the S. point W.S.W., and the N. point of Koko-sima E.N.E. The *Serpent* grazed over it whilst carrying 6 fathoms regular soundings in both chains.

JAPAN,—South Coast and Inland Sea.

The following additional information, having reference to the *China Pilot*, 4th Edition, on the South coast of Japan, and the Inland Sea, has been transmitted by Commander Charles Bullock, H.M.S. *Serpent*, October and November 1866.

Gulf of Yedo.—Submarine jets, 20 feet high, apparently of steam, were observed on October 6th, 10 miles N.E. of Cape Diamond near Simoda, about two miles off the land.

Redfield Rocks.—12 fathoms water was found when passing on the west side of these rocks, midway between the groups it is not correct that the water deepens as they are approached. Half a mile from the south and principal cluster there are 30 fathoms, rock. The flat rock is connected with the south rocks, and close to them.

Gulf of Suruga.—*Directions for Harbours* on west coast of Idsu peninsula.—Tago and Heda may be boldly steered for, but Arari is only fit for small craft, difficult of access and its entrance only 60 feet broad. It is close N.E. of Tago harbour, easily identified by two rocky islets off its entrance.

Heda, a safe accessible anchorage, can be recognized by the low stony barrier fronting it, with its line of dark pine trees.

Strong S.W. winds do not always blow home in the Gulf of Suruga.

Lady Inglis Rocks.—In a S.W. gale there is good shelter under the lee of Omæ-saki in 7 to 4 fathoms, but not closer in. A vessel may

pass inside the reef, giving the shore a berth of a mile. The reef covers at high water, and does not always break. It should have an iron perch or beacon.

Directions from Yokohama to the Westward.—After passing Rock island, take an in-shore passage, steering for Omae-saki, thence towards Kii-no-oosima, taking the greatest care to avoid the dangerous reefs off Sima, if at night. The *Serpent* carried a favourable current the whole way in October.

Inland Sea.

St. Vincent Channel.—There is a safe, easy, and deep channel north of the Conqueror bank, with one sand flat only between Nezumisima and Sayanagi, having as little as 6 fathoms on it at low water.

Directions.—Stand on E.N.E. between Nezumi and Sayanagi, passing nearer to Nezumi, and when between Kosima (Round Island) and Takami steer about E.b.N. $\frac{1}{4}$ N. to pass between Ten-foot rock and Hirosima, borrowing to the southward at first to avoid a steep bank joining Hirosima and Kosima, but hauling in again so as to pass nearer the island than the rock. Thence steer E.b.N. for the N. part of Usisima (Saddle island), hauling up mid-channel through the passage N. of it, to avoid a rocky ledge off its point, then steer along Siyako for the N. point of Yosima, hauling up E.b.S. with Kodutsi in line with S. point of the island off Yosima, and pass mid-channel between it and the Three Rocks.

A further examination has brought to light the existence of some dangers on the borders of this channel, which may be avoided by slight precaution. [November 1866.]

Three Islet Spit.—A narrow bank of gravel extends from the three rocky islets towards Sikayo. Its spit may be crossed in 10 fathoms by keeping Kodutsi, its own breadth open of the small round island off the S. point of Yosima (not marked in the chart).

Rocks, dry towards low water, extend one cable off the N. point of Usi-sima; steep to.

Siyako Ledge.—A rocky ledge extends 3 cables off the S. point of Siyako, at the outer part of which is a rock of less than 10 feet water. Giving the island a berth of half a mile, or passing outside the tide rip or heavy overfall generally seen there, will clear it.

Hiro-sima South Bank, steep to, is between Hiro-sima and Kosima, or Round island, projecting somewhat into the channel, therefore pass S. of Ten-foot rock.

Ten-foot Rock, so named, 20 feet high, and whitened, may be passed safely on either side at 2 cables or less.

Directions, from the Eastward.—Pass mid-channel N. of the three rocky islets, and haul up W.b.N. till Kodutsi is its own breadth open of the small round island off the S. point of Yosima, then keep S.W. b.W. along the shore of Siyako, on a mid-channel course between it and Usi-sima. When Ten-foot rock comes midway between Round island and Takami, steer for it, but pass 2 cables S. of it. Pass 2 cables

N. of Takami, and half a mile N. of Nezumi, the summit of Hiro-sima kept midway between Round island and Takami leading through in 7 fathoms.

Tides.—It is high water, f. & c., at Hiro-sima at 11h. 45m., and springs rise 11 feet, neaps 8 feet. The streams run regularly six hours each way; flood comes from East, and changes take place about an hour before the end of the tide. The tides are very regular.

Kurusima Seto.—*Southern Route.*—Named Kurusima Seto, or Strait of Kurusima. A singularly clear atmosphere and great mirage prevail in this part of the sea, under which circumstances the sun shining on the islands blends them with the mainland, the passage then difficult to make out.

Oki-sima, in long. $134^{\circ} 4'$, is high, and none of the islands about it are low, as stated in the *China Pilot*.

Tomo-sima is also high, with good anchorage in 5 or 6 fathoms on its S.W. side, Yosima bluff being open of its South point.

Skenezi or Ose Bank.—Not less than 6 fathoms could be found on this bank, of coarse sand. The fishermen did not believe in any bank of less than 7 fathoms.

Hasedasinose Bank extends 2 miles off the shore of Awadji, 3 miles N. of Morotzu; it is said with 3 fathoms on its edge.

Skanoze or Great Shoal is probably not so extensive as on the chart. The *Serpent* passed over the centre of it, 6 miles within the spit, in 11 fathoms, sand, but the S. edge in 13 to 18 fathoms was found to be rock. A good leading mark for passing between the banks is the Hiogo range just open of Yesaki.

Akasi Strait to Hiogo.—A shoal of 20 feet, is said to be about a mile S. of Mico on the Nipon shore. The *Serpent* found 10 fathoms, as marked on the chart by a Japanese naval officer, although it appeared very shoal from the extreme discolouration of the water in a heavy tide rip, caused by the ebb stream being deflected from the shore after sweeping out of the Akasi bight. There is probably a shoal nearer the coast, formed by the eddy.

Standing on towards Hiogo there are not less than 9 fathoms at a mile off shore; and Hiogo point, which is low, and has a round grey tower at its extremity, may be rounded at 1 or 2 cables.

Prices have much risen in consequence of the civil war. Good coal was supplied at Hiogo to H.M.S. *Bustard* at 12.50 dollars a ton. Charcoal, which ranged from 5 to 12 dollars a ton in 1861, ranges now from 17 to 37 dollars.

Cape Iyo, a long promontory of undulating hills, rises gradually from the point to a moderate elevation. Half a mile N.W. of it is a grassy island 20 feet high, and 2 cables outside the island a low reef which never covers.

Kosima, well cultivated, contrasts well with the barren hills of Osima behind it; a clump of trees is seen on the western part of its double summit.

The White-topped Rock is half a mile W.b.S. of the S. point of Masima, and the ground southward of it towards the village of Obama is rocky and uneven as far as a rock, awash at low water, 3 cables from the shore, and 6 cables S.S.W. of Masima. There is troubled water even outside this, which it would be prudent to avoid.

Directions.—When passing Cape Iyo, the western or junk channel will be seen open; proceed E.S.E. and round Kosima (thus opening the strait) at 3 or 4 cables till the course is S.S.W. [?], changing to S. when passing the W. point of Masima at 2 cables; after rounding the S. point of Masima at 3 cables, steer S.E.b.E., and giving the islets off Osima a good berth, haul up E.N.E. easterly, through the Bingo-nada.

There is much troubled water in the strait, especially off Kosima on the flood; a mid-channel course will avoid what appears dangerous.

From the Eastward.—After rounding the islets off Osima, the western or junk channel only will be seen open; steer N.W.b.W. for (or to the right of) the White-topped rock, and haul up N. between it and Masima. After passing the W. point of Masima, keep a mid-channel or N.N.E. course, and round Kosima at half a mile.

Anchorage may be had off Imaharu; also off the S. end of the village of Obama, one mile N. of Imaharu, in 6 to 9 fathoms.

Iyo-nada.—Keep the route recommended; it is the best passage, and no time is saved by passing N. of Nukusima, where the tides are very perplexing, especially to a vessel under canvas.

Kii Channel.

Tanabe, S. of the Daimio's residence, is sometimes a convenient anchorage; but better shelter in westerly winds would be found N.E. of the Binzli reef. Two sunken rocks have lately been discovered in the fairway to the above anchorage: one of 22 feet water is S. $\frac{1}{2}$ E. $4\frac{1}{2}$ cables from the islet off Maru-yama point; the other with 15 feet is S.S.E. $\frac{3}{4}$ E. at the same distance. To anchor, stand in for the green earthwork E. of the white wall of the Daimio's residence, bearing E.N.E. till Ebisima shuts in with the islet off Maru-yama point; then keep E. and anchor in 6 to 4 fathoms. The low rock of Binzli always shows.

Simonoseki Strait.

Tano Bank.—A better leading mark for passing between the Tano bank and the Kanabuse rock is—a large clump of trees on Takasaki, the S. point of Simonoseki town, in line with the high water of Mozi point. The so-called Custom-house is seldom to be recognized.

Variation in 1867, 4° O' W.

TELEGRAPH CABLE BETWEEN JERSEY AND FRANCE.

The telegraph cable between Jersey and France lies in a N.W.b.W. $\frac{1}{4}$ W. and S.E.b.E. $\frac{1}{4}$ E. direction, between Fliquet bay, Jersey, and Pirou, France. The shore end or landing in Jersey is marked by a white martello tower, on which is painted in black letters the word "Telegraph," surmounted by a green disc. On the French coast at Pirou the shore end is distinguished by a white tower 25 feet high elevated above the sand hills, on which is painted in black letters the word "Telegraph," surmounted by a green disc.

To prevent damage to the cable by the anchors, grapnels, oyster dredges, &c., used by fishermen, the following directions are given:—The course of the cable is distinctly indicated by the two towers, which, during the day, are a sufficient guide for clearing it. It can be avoided by means of the bearings given above. Fishing vessels on the coast of Jersey which have no compass can avoid the cable to the South by keeping Coupe point in one with the Tour de Rozel, and to the North by keeping the Guard-house in Bouley bay in one with the Tour de Rozel.

EQUATORIAL CURRENT OF THE INDIAN OCEAN,—*Bottle Paper.*

Batavia, Feb. 15th, 1867.

Sir,—The *Batavian Government Gazette* of the 12th inst. contains the following notice:—

"On the 1st of January last a bottle was picked up on Pulo Simo (Batu Islands) off Westevart, of Sumatra, containing the following memorandum:—Barque *Wynand*, bound to Colombo, 79 days out; light southerly airs last four days; meridian bar., 30°; therm. shade, 86°; lat. 1° 20' S.; long. 76° 0' E.

"WHARTON SMITH, *Master.*

"*July 17th, 1866.*"

To verify or ascertain current, send this to master-attendant of any English port, who will forward to *Nautical Magazine*.

As the above request might perhaps not be complied with, I now forward particulars for your information.

I shall be happy if I can be of service to you here, in return for which you will oblige by sending me copies of your numbers.

I am, sir, yours truly,

J. H. GROOS.

To the Editor of the Nautical Magazine.

We are much indebted to the author of the foregoing letter for his kind consideration in forwarding the copy of the bottle paper, which

confirms the easterly equatorial current of the sea by which it has been swept to the Sumatra coast. Assuming it to have been found as soon as landed, it would then have travelled eight miles per day. But it is more probable that for some days it lay unobserved, and its rate of travelling would then be proportionably greater. It is, at all events, a useful corroboration of an important fact.—ED.

OUR IRON-CLAD FLEET.

Our correspondent deals out in his playful verse some serious warnings on the subject of our iron fleet. The following extract from the *Daily News*, evidently by one who knows his subject, is one by no means flattering to our naval ideas of superiority, and it seems the safest way when an official and a non-official opinion differs on such important subjects as are treated on in the report just published, that a well selected committee is the proper party to decide which is right and which is wrong. The subject is most momentous when our very existence not to say our former naval prestige depends on our not losing the power of preventing the iron-clads of foreign nations from approaching our shores. We commend the following to our readers' attention, and agree with our author when he says:—

“ England! unto thy guardians belongs
To meet all this! nor trifle with such wrongs.”

What of the *speed* of our iron-clads, which the American admirals rate so highly. That element seems to be nowhere in our fleet, besides several other qualities.

Two important reports on the performance at sea of our iron-clad fleet have within the last day or two been issued. One of these refers to a cruise made so far back as the year 1864; the other is derived from the observations made during the trials of last autumn. But in many respects these independent results confirm each other, and the points of discrepancy are themselves of value. Admiral Dacres, on the former occasion, had under his orders the *Warrior* and the *Black Prince*, sister vessels of 380 feet in length; the *Hector*, the *Defence*, and the *Resistance*, of 289 feet in length; and the *Research* and the *Enterprise*, smaller vessels, on Mr. Reed's box principle. The admiral considered the larger ships very valuable for either sailing or steaming on long voyages, but subject to the serious drawback of being very unhandy. Their great length also makes them need double the ordinary space in time of battle, to afford them room to turn, for their circles are 1,000, instead of 500, yards diameter; and in narrow channels, or entering harbours, they are exposed to serious dangers,

These first built vessels had also the disadvantage of having their extremities unprotected by armour, and Admiral Dacres expressed considerable apprehension for the consequence of their receiving shot from the stern-chasers of an enemy, however inferior in speed, before they could close with her. On the whole he seems to have approved most of the medium class typified by the *Defence* and *Resistance* as being fairly fast, and greatly more under control. The *Research* he condemned as unsafe; but the *Enterprise* received high commendation.

The cruise of last year was under the command of Admirals Yelverton and Warren, and each officer has furnished a report, which, in their main points, agree. The fleet comprised the *Ocean* and *Caledonia*, converted wooden vessels; the *Achilles* of the *Warrior* class, but with the bow and stern protected at the water-line; the *Hector*; the *Lord Clyde* and the *Bellerophon*, two of Mr. Reed's larger vessels; the *Pallas*, his specimen of a crack smaller one; the *Research*; and the *Wivern*, one of the turret ships built by Mr. Laird for the Confederates and purchased by our Government. Of these, the *Achilles*, taken as a whole, was the finest. She was greatly the fastest under steam, she sailed well, and her stability was in very remarkable contrast to that of her consorts,—her rolling being only to an angle of 16 degrees, when the *Caledonia* went to the extent of 28 degrees, and the *Pallas* of 32 degrees. The *Bellerophon* held the next place in steadiness; and Admiral Yelverton gives a high character to this vessel in many respects, subject, however, to some serious drawbacks. One of the most interesting points in the trials lay in the great improvement noted in the *Hector* and the *Research* as compared with their condition in former years: the former, by lightening her ends, was made into a really good sailer and sea-ship; the latter, by the addition of a hurricane deck, was rendered at least safe and comfortable,—and she kept her place fairly with the fleet. The *Pallas* was almost always the fastest under sail, but she pitched and rolled heavily. Both she and the *Bellerophon*, of which so much was confidently prophesied, proved very moderate indeed under steam, and used a very large proportion of coal for their weights and speed. The converted wooden vessels, *Ocean* and *Caledonia*, were on the whole so fairly good, that Admiral Yelverton strongly recommends the utilizing in that way of more of their class.

The technical differences between each vessel, very carefully tested, and noted in elaborate tables, are matters which we must leave to the examination of professional men. No single vessel was so pre-eminent in all respects as to be capable of adoption as a type for our future navy. The same species of inconveniences which were noted in the previous trials as attaching to each class were confirmed in this. It seems established also that our iron-clads cannot be depended on to tack or wear without the assistance of steam up, and this necessity will confine their cruises to the period during which the supply of coal may last. Again, in the matter of firing their guns it was ascertained that, in anything of a sea, no tolerable practice could be made at all,

the ports rolling under water, the shot and even cartridges dropping out of the guns, and the guns themselves becoming unmanageable. Here both the admirals remark very strongly on the danger the whole fleet would have been exposed to had they been encountered in such circumstances by a single hostile turret ship. Such a vessel, they make no doubt, would have been able to fire with fatal effect, while they would not have dared to open a broadside port. For not only does a turret ship carry her guns higher (besides being able to work far heavier guns), but her weights being more central, and raised higher up, she is steadier both in pitching and rolling. And in this opinion of the relative superiority of a turret ship they were only confirming that which, on slightly different grounds, had already been strongly expressed by Admiral Dacres.

Here, however, there steps in a new authority to overturn all these practical conclusions of our most experienced seamen. Admiral Spencer Robinson, Controller of the Navy, and *alter ego* of Mr. Reed, Chief Constructor of the Navy, sitting in his chair at Whitehall, writes a commentary on all these reports, for the instruction of "My Lords," and the correction of the public mind. These curious appendices are devoted to proving that every favourable point noted by the commanders at sea in regard to a Reed-Robinson vessel is of conclusive authority, while every point on the other side is either founded on mistake or is unworthy of notice. Admiral Robinson observes—"Very high praise has been awarded to the *Achilles*. I am entirely responsible for all the features of that ship which differ from the *Warrior's*." This way of assuming responsibility for merits is an entirely new form of combining modesty with self-commendation. But in direct contradiction to the official reports on the *Bellerophon*, which declare that "she cannot be called a handy ship," that her rudder is greatly exposed, and that she is disappointingly defective in speed, Admiral Robinson declares that she is "by common consent the most formidable iron-clad afloat." Of the *Pallas*, he asserts that she "has fulfilled the expectations of her great speed," in the teeth of Admiral Yelverton's report that on the trial of full speed she only took the third place. But then Admiral Robinson has a convenient way of disposing of this fact by asserting that the full speed trial affords no indication of the relative merits of the ships. Admiral Yelverton had objected that the *Bellerophon* in pitching exposed her balanced rudder to such an extent that he must be a very bad shot who could not hit it. Admiral Robinson calmly settles this difficulty by the remark, that "the exposure of a large surface of this rudder, when the ship is pitching, is perhaps more an apparent than a real evil." As to the idea of plating any more of our useless wooden vessels, Admiral Robinson will not hear of it, which is a little curious when one keeps in mind his vehement support of Lord Palmerston's expensive crotchet that wooden frames for ships are far better than iron.

After all this indication of a peculiarity in judgment, it will surprise no one to learn that Admiral Robinson adheres to his doctrine that, not

only are the turret ships *Scorpion* and *Wivern* unfitted for going to sea, for which, indeed, they were never intended, but that "he cannot agree with Admiral Yelverton, that they are even well adapted for coast defence." And it follows quite naturally that he entirely dissents from the opinion of our practical naval commanders in reference to the superiority of a turret vessel in power of firing in bad weather, and demonstrates quite to his own satisfaction that "these advantages are not altogether so great or so decisive as they might appear at first sight." And he insists that it is only in turret ships "designed by the Admiralty, (and not approved by the inventor,)" that any advantages appear at all. Such is a specimen of the authority by which in naval matters we are ruled, and our best officers are overruled. The cynical critic of human nature would find in it food for laughter, but the tragic issues involved repress the thought of ridicule. The fleet of England, in the opinion of her ablest seamen, is in danger of defeat, because certain prejudiced heads of departments allow their own personal likes and dislikes to distort the evidence of facts, and resort to subterfuges in order to evade compliance with duty.

QUEEN ADELAIDE'S NAVAL FUND.

A meeting of the friends and supporters of this fund took place on the 18th of last month, on the occasion of the retirement of its founder, Mrs. Skyring (the widow of Commander Skyring, R.N.), to confirm the regulations on which it has been conducted, and other business. And here we had the satisfaction of seeing a most valuable institution, the origin of which is set forth in our volume for 1850, doing good charitable service, and contributing its little harvest annually to general produce of the numerous societies to be found in our land. We look on this as a most valuable auxiliary to the larger societies for the benefit of the orphan children of naval and marine officers, and regret to find that it is not so widely known as it should be. In a future number or two we propose to allude to it, and show some of its good deeds; and we trust that the officers of those services whose widows and children are the special objects of its solicitude, will be found more numerous than they are in the list of subscribers. A day's pay or half-pay is but a small modicum of subscription, but even this from all would enlarge the operations of the fund, and soothe the sorrows of many whom it is painful to see refused its assistance.

TEXT OF TREATY BETWEEN JAPAN AND UNITED STATES, GREAT BRITAIN, FRANCE, AND HOLLAND.

The text of the new treaty made between Japan and the representatives of the United States, Great Britain, France and Holland,

has been published at Washington. The treaty went into force on the 1st of July, and as direct communication with Japan will be opened in January, its provisions may be given in brief. As the *Colorado* will touch here in March on her return from China and Japan, goods can be ordered and procured by her:

1. Permits for the landing or shipment of cargoes in Japan will hereafter be issued free of charge.

2. The Japanese government will warehouse imported goods, without payment of duty, at the ports of Kanagawa, Nagasaki, and Hakodadi, and will be responsible for their safe custody so long as they remain. On removal, the importer or owner must pay the duties fixed by the tariff, with storage charges.

3. All articles of Japanese production may be conveyed from any place in Japan to any ports open to foreign trade, free of any tax of transit duty, other than the usual tolls, which are levied equally on all traffic for the maintenance of roads or navigation.

4. All foreign coin or bullion in gold or silver will be exchanged into native coin of the same intrinsic value, deducting only the cost of coinage.

5. The Japanese Governor at each port will make arrangements with the foreign Consuls for the prevention of frauds by labourers, and for the protection of goods in transit.

6. Any Japanese subject is free to purchase at home or abroad, any kind of steam or sailing vessel, to carry passengers or cargo. Ships of war may be obtained under the authorization of the Japanese government. All foreign vessels so purchased shall be registered as Japanese vessels.

7. The former restrictions upon direct foreign trade by Japanese merchants are removed, and all Daimios, or persons in their employ, are free to visit any foreign country. All Japanese subjects may ship goods to or from any port in Japan, or to or from the ports of any foreign power, either in vessels owned by Japanese, or in the vessels of any nation having a treaty with Japan; and by taking passports, may travel abroad for study or trade.

8. The open ports will be provided with lights, buoys, and beacons, at the expense of the Japanese government.

CHARTS AND BOOKS PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in April, 1867. — Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

159.—Italy, West Coast, Sheet 3, Civita Vecchia to Naples Bay, M. Darondeau, F.I.N. 1856, (1s. 6d.)

250.—Africa, North Coast, Fratelli Rocks to Mehediah, with views, Commander Wilkinson, R.N., 1865, (2s. 6d.)

2,082.—Africa, South Coast, Sheet 1, Table Bay to Agulhas Cape, Captain Dayman, R.N., and others, (2s. 6d.)

2,578.—Philippine Islands, Sulu or Mindoro Sea, Eastern part, Spanish Surveys, 1863, (2s. 6d.)

EDWARD DUNSTERVILLE, *Commander, R.N.*

Admiralty, Hydrographic Office, 20th April, 1867.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

JUNE, 1867.

GREENWICH HOSPITAL; WHAT TO DO WITH IT.

DEAN SWIFT'S "Tale of a Tub" might as well be applied to Greenwich Hospital as to the Church, for the moral it was intended to convey. The wrangling and contention which that great satirist described as existing between different parties about Church discipline, and about the real meaning of the words of the Founder of Christianity are, and have been, often reproduced in smaller matters. If the founders of institutions and charities could only now and then start from their graves and see with their own eyes, and hear with their own ears, the interpretation placed upon their own words, it might fairly be concluded that they would be surprised. And in many cases, if founders of charities could by the means of some respectable medium be induced to re-appear to their descendants, they might be edified and abashed to find how much unnecessary trouble they have given. It is rather a hard thing to adhere strictly in every instance now to the terms of an agreement made centuries ago; and even where it is not hard it is sometimes foolish to do so. The very circumstances which called a charity into life years ago may, after the lapse of a generation or two, have ceased to exist; and new circumstances may also have arisen making it very advisable to give it a new direction altogether.

Greenwich Hospital in common with several other very respectable charities is in this condition. It is indeed, a matter of doubt how far it would be right to carry out to the letter in the present, the provisions of some of our great charities. Take a large and a national school like Christ's Hospital, or take any of the great schools of

England, and the question arises as it has already been made, whether in justice or wisdom the original terms of their foundation should be now carried out. An amusing instance of this kind occurred not long since in a small country village not far from one of our seaport towns. A clergyman whose energies were in inverse proportion to the size of his parish, and were as overflowing as his flock was limited, found that a deed upon which some alms-houses were founded about four centuries ago, subjected them to the control of himself and a sister of mercy, and he had serious qualms of conscience as to whether the matron who at the time superintended the establishment ought not to be superseded, and a sister of mercy put in her place. What the result would have been if he had carried his ideas into effect it would be impossible to predict, but this small instance only shews how very difficult it is to reconcile modern actions with ancient ideas. Anthony Trollope's best story, the "Warden," is founded on the difficulties which arose when an ardent young reformer found that there was a serious discrepancy between the actual disposal of the funds of a hospital and the terms of the founder's bequest. It becomes indeed a matter for serious consideration, whether anybody should be allowed to leave money at all for the foundation of any institutions, or in any way except that which is purely private. The storm of indignation which followed Mr. Gladstone's attempt to criticise the management of public and private charities shewed how difficult this restriction would be. But Greenwich Hospital, not two centuries old, has given one more notable instance of the difficulty of reconciling old ideas with modern usages.

What however, is to be done with it? Various schemes have been lately suggested, and many very specious claims have been preferred by those who fancy that they have a sort of right to benefit by its funds. Moreover the funds and the property are so large that it is felt it would be hard to let the government appropriate them to its own uses without a strong effort in the contrary direction. But when people carry out beautiful sentiments materially, difficulties are certain, sooner or later to arise. All that can be said is, that it is fortunate that rich and powerful Englishmen are more material than sentimental, and that the country though troubled occasionally, cannot be said to be overburdened, with the maintenance of costly sentiments. Still Queens have a sort of prescriptive right, not only to indulge in sentiment, which is the peculiar privilege of all women, but they have the power and the luxury to carry out their special sentiments. Queen Mary, whose memory all Englishmen respect, had a strong sympathy with sailors, and she lived in a time when the navy had asserted its own honour and the power of the country by the victories it had won. To the battle of La Hogue Greenwich owes its Hospital; and, with the victory which our navy then gained, the Queen saw an opening for developing her charitable scheme, and it was carried out accordingly in a truly royal way.

At the best the object which the Queen had in view could only serve a temporary purpose. She desired to find a home for the many

crippled, battered, old sailors who, in the many battles which occurred in her reign, needed a shelter, and could justly claim it, for the rest of their lives. But wars are not chronic, and crippled, maimed, and even aged seamen cannot be supplied annually according to order, without some violation of the ordinary rules which regulate human affairs; therefore the original object in the foundation of the Hospital soon came almost to nought. To serve therefore a temporary and a pressing need, the charitable Queen continued the erection of a costly building which had been intended as a palace, and which was not finished by the time that all her special protégés were in their graves.

The original charter is dated the 25th of October, 1694, and the buildings were not completed till 1758. In case the original charter is not well known the following extract will be sufficient to explain the idea which Queen Mary had in founding the Hospital. "Whereas it is Our Royal intent and purpose to erect and found a Hospital within our Manor of East Greenwich, in the County of Kent, for the relief and support of seamen serving on board the ships or vessels belonging to the Royal Navy of Us, our Heirs, or Successors, or employed in Our or Their service at sea, who by reason of age, wounds, or other disabilities, shall be incapable of further service at sea, and be unable to maintain themselves; and for the sustentation of the widows, and the maintenance and education of the children of seamen happening to be slain or disabled in such sea service; And, also, for the further relief and encouragement of seamen and improvement of navigation; Now, to this end, our Royal purpose, etc." This extract is sufficient to shew what was the original idea of the royal founder of Greenwich Hospital. It supposed the perennial existence of a number of absolutely disabled and aged men, totally incapable of maintaining themselves; of men, who would have no homes to go to, no relations to look after them, who would be incapable of any enjoyment of life, and who would require to be looked after both as to their bodies and their souls. But in place of these delicate hothouse plants which war gave us, a race of hardy annuals came, living to a green old age, capable of enjoying life as long as it existed, hardened by the labours of their early lives, and never permanently disabled on this side of the grave.

It was found at length that, not only was the Hospital converted into a sort of alms-house for old men, but that it was difficult to obtain a sufficient number of old men to fill the wards. Then officers were introduced, for whom it is doubtful whether any provision was intended; and lastly, when it was found that the administration of the funds was unsatisfactory, and the pensioners had the option of staying or of going where they liked, with a money allowance in lieu of their board and lodging, they elected to go, leaving but a few hundreds of the halt, the maimed, and the blind, to testify to the existence of the Hospital as an asylum for seamen. This was after all but in accordance with the fate of other similar institutions. The Trinity House maintained some alms-houses at a considerable cost, and provided their inmates with all sorts of allowances in the shape of

coals, candles, etc., and with luxuries such as a doctor, and nurses ; but when the maintenance of the houses was found expensive, and the men had the option of going with a money allowance instead of a home, they preferred the former and walked, leaving, contrary to eastern custom, their beds behind. In fact, the facility of travelling is now so great that a man finds it as easy to go to where his friends live or to his home, as the case may be, as to go to Greenwich or to any other place where there is an asylum to receive him.

But in the case of Greenwich Hospital, though circumstances have altered and times have changed, the old building still remains ; and the difficulty of knowing what to do with it is still unsolved. A practical man might suggest that, if the building were not really wanted, the best plan would be to pull it down, sell the materials, and build upon the ground. This solution of the difficulty would be practical and, no doubt, profitable, but it is doubtful if it would give general satisfaction. Every one who knows the building at all, knows also what a shame it would be to pull it down. To every Londoner, whether he is merely on a journey by the steamer to Greenwich, and inspects it carefully before he proceeds any farther ; or whether he is a pleasure seeker on his way to Gravesend ; or whether he is a traveller on a long or a short voyage, and only sees it in passing, it is a building of great interest and of pleasant associations. It is the first pleasant sight he has after he has left London Bridge. Its symmetry and beauty attract his attention at once and make him feel that it would be a shame to destroy it while it was possible to put it to any use.

The Government animated partly by this feeling, and partly by an objection to destroy anything inconsiderately, did what they thought best at first, and retained as pensioners all men who were too infirm to be sent away. They thus restored it to its primitive use. But, unfortunately, the numbers were terribly small, and did not exceed or even reach four hundred, and the best part of the Hospital was left quite empty. This large building, therefore, which is capable of accommodating nearly three thousand men has had to be maintained and kept in repair throughout for less than four hundred ; and the expense of its maintenance has been rather a drag upon the funds. It is no wonder then that the cost of keeping the few men who are now provided should seem great, not only as compared with other Hospitals, but even with the excessive cost of maintaining a much larger number of men on the old system. At present the estimated cost of keeping up this establishment for the ensuing year is £46,843. But we may deduct the cost of the establishment at the Admiralty, and of the Office of the Comptroller of the Estates, as they have no direct reference to the maintenance of invalids in the Hospital ; and the expense will accordingly be reduced to £44,118. The number of inmates which may fairly be considered the average for the year is 380 : and the cost of keeping each man is therefore £116 per annum. Here again an item of £1631 for superannuation allowances is included, which would exist whether these invalids remained as inmates or not, and which may also be struck out of this calculation. The charge then per man

per annum, would be £112. The "*Times*" and other newspapers find the average cost of maintaining each man at £114; but the basis of their calculation was not given, and it is not clear how it was arrived at. So then we find that, at present, by keeping up the Hospital as an asylum for invalid seamen, it actually costs about £112 to keep a man there for a year. Of course this charge includes the cost of keeping the buildings in repair, and purchasing provisions, etc.

Supposing however that we make some further reductions still, and only charge the proportion for the repair of buildings for 365 men, and see then what the result will be. Greenwich Hospital has room for 2,710 men; and, as these repairs extend to all the buildings, it will be fair only to take the proportions of the expense which applies to 365 men, the number actually now borne. This proportion is £813, which will leave the sum of £5,227 to be abated from the total estimate as not applying to the present inmates, and as representing, in fact, the cost of repairing those parts of the Hospital which are now unoccupied. The same plan may be adopted with regard to provisions; the estimate being for 500 men; but as the actual force is only 365, the amount we may abate is £3,267. Pensions amounting to £3,000 may also be abated; also superannuation allowances amounting to £1,631; and lastly, the proportion of washing and medicines for the difference between the estimated and actual number of inmates, which amounts to £648. The result is that the estimate will be reduced now by £13,773, and will leave the estimate for maintaining 365 men at £30,345, which gives an average of £83 2s. 9d. a man. This calculation is based on the supposition that the number of inmates is the same during the ensuing year as on the 1st of March last; and that the charges for keeping up the establishment and for meeting demands for superannuation are not included. But, if we allow the 500 men which the Government estimate is supposed to allow for, only charge the proportion of charges for repairs for 500 men, and deduct money and superannuation allowances, the estimate will be reduced to £34,561, and will give an average cost per man of £69 2s. 5d. And, if the money allowances of £3000 be included, the average will be £75 2s. 5d. per man.

Now we may turn for a moment to the old state of things, and see what the cost was under the former system. On turning to the report of the Royal Commissioners of 1859, we shall find there the total expenditure of the Hospital per annum, was £99,577, and that 1,676 men were provided for; so that each man cost during the year about sixty pounds. This was including all the charges for repairs, for nurses, clothes, allowances, and every other expense directly connected with the Hospital.

It is not forgotten yet, how strong was the expression of indignation at the extravagant cost of the management under the old system, and how virtuous was the horror which first viewed it and then determined to expel it. The result would seem to be with the Hospital, as with the young man in the parable, who had his house in his absence swept and garnished, but who when he returned brought with him

seven devils worse than himself, and made the state of the place worse than before. So it would appear with poor old Greenwich Hospital. Commissions have sat upon it, Committees have examined it, and for once in a way the Admiralty, seemingly galvanized into a sudden and apparently artificial and unnatural burst of life, rooted up the whole framework of the institution, with a determination which would have seemed reckless did it not bear the stamp of forethought; and with a hastiness which, but for the never-failing and necessary gravity of the Board in exercising its public functions, might have been mistaken for levity. However, the changes were made in hot haste—Commissioners were either killed or sent about their business, and like the American soldiers after the war, were absorbed into the “general prosperity of the country.” Officers received the happy or unhappy despatch as the case might be, and that their bodies and souls might still be provided for in their new homes, they were allowed something per annum, in addition to their pensions, for medical attendance and pew rent, in lieu of the Doctor and the Church, which an “indulgent” Admiralty had allowed them when living in the Hospital. Pensioners left in shoals with no trace behind but a few unpaid scores at some favourite public houses. And Greenwich—Greenwich—even-handed even in its frailty, wept with one eye and smiled with the other: it had lost friends and custom; but it had also lost a nuisance.

Yet, in spite of all these rapid changes, the result does not seem bright. The extravagant cost of affording the old seamen an Asylum was the chief ground of complaint; and now that reform has been carried out with a strong hand, behold, the cost is double. If a pensioner under the old system cost £60, he now does not seem to cost much less than £120.

It is not to be wondered at then, that numbers who take a delight in picking holes in public expenditure should gloat over such extravagance as this. To them it is an unexpected windfall, that the Admiralty, first finding fault with the mal-administration of the funds of the Hospital, carrying out extensive reforms, then finally with an air of superb condescension taking the management into their own hands, should now be found to be more extravagant than their persecuted predecessors. Others again, assuming that the management is economical and that the expenditure is necessary, but that empty rooms and bare walls are hardly worth supporting for any intrinsic worth however great, pour suggestions with a generous liberality for turning the vacant buildings into use. Agitators of this class are worth listening to though their suggestions may be hazy and bear the mark of being one-sided. At all events they take up a more practical ground than the financial critics. It is but fair, after all, to assume that the Government in saddling itself with the funds and responsibilities of the Hospital, had no other object than to manage them wisely; and to allow that they have not neglected their self-imposed labour. Therefore the only point which is worth looking into is that which refers to the appropriation of the buildings themselves.

The most prominent suggestions which have been made refer more

or less to applying the wards to Hospital uses. On one hand it is urged, and the claim has been admitted, that the Merchant Seamen are fairly entitled to be considered. A claim they certainly have, for their forefathers or those who have gone before them contributed liberally to the funds. The Registered Seamen's Act of 1695, provided that every seaman should contribute sixpence a month to the Hospital; and, until 1834, this Act was in force; so that for a hundred and thirty-nine years the Merchant Service had a personal interest in the Hospital and a direct claim upon its funds. Bare justice may therefore be said to be now granted, when Merchant Seamen are supposed to be allowed some benefit in its advantages. The justice is however very bare, for admission is only given to those who are wounded in action or in encounters with pirates. Various other claims have been set up by those whose only interest in the place and only right are that they live in the neighbourhood. The sick poor of Greenwich and the surrounding districts have claimed to be considered and on no other grounds.

These petitions point one and all, more or less, to making the Hospital one large receptacle for invalids of all classes. No doubt the petitions mean very well, and their idea is that the Government will be unwilling, if they are not positively unable, to depart from the terms of the Acts of Parliament under which the Hospital was founded. But we are only shown here that no allowance is made for changes in language which two or three centuries invariably introduce. The old idea of the word "hospital" has not much in common with its modern use. In the present day, we associate nothing but sickness and disease with the word, and describe all houses for the reception of the sick under this common title. Now, without quoting authorities or Special Acts of Parliament, the extract already given has only to be referred to, to prove that Greenwich Hospital was meant not as a Hospital for the sick, but as an Asylum for the infirm and aged. What need is there of Acts of Parliament to prove this when there is a very substantial proof within a few yards of the Hospital in shape of an Infirmary, an Infirmary specially erected for the reception of the aged and infirm who might be ill at any time. Besides, the idea of flooding Greenwich with two or three thousand men suffering from every manner of disease, would soon make a very respectable borough perfectly uninhabitable. If in considering the best means of settling the redistribution of seats in Parliament, the Government are anxious to find an easy means or excuse for disfranchising any naughty borough, such as Reigate, Totnes, or Yarmouth, here is a way open to them. Introduce a large infirmary with a couple of thousand diseased poor, and any borough would speedily disenfranchise itself, for we may be very sure that, at the next election nobody would be left to vote.

What however, is to be done with this vast building if infirm and helpless seamen will not enter it? There seem to be only two ways out of the difficulty which are satisfactory and sensible. In the first place, it is open to the powers that be to pull down the buildings and sell the ground; in other words "deconsecrate" it as it is now

termed. The only other plan is to carry out the original Acts of Parliament differently ; regarding the wishes of the Royal founders of the Hospital, as being unsuited to the present day and impracticable.

Take a wide view of the intentions of the founders, and it need not be deemed impossible to carry out their ideas, though not perhaps in the way which would have occurred to them. The Hospital was built for the benefit of the Navy, and to that object let it and its funds be devoted. A hospital once meant what we now understand by the word "Asylum;" it has altered its meaning now so as to be applicable only to houses for the sick. Let it in future have another and a better meaning than either ; a meaning more material and more practical. Let it mean a temporary dwelling for those who are well and strong, but who often want it more than the weak or the diseased. In the present day community life is bad for the infirm, dangerous for the sick, but valuable and useful to the active and the strong. Barrack life is being urged and demanded more and more for the Navy ; and here seems a solution of the difficulty.

Barracks for seamen have been as yet tried only on a limited scale, and may be considered an innovation. But, without suggesting anything new or impracticable let us look at what has been tried, and is now, actually wanted. The marines lead a life which alternates between barracks ashore and barracks afloat. Yet, valuable a body as they are, we are forced, with great reluctance, to reduce them because we have not ships enough to send them to sea in, nor sufficient barrack accommodation to keep them when on shore.

Before enlarging any further upon the idea of converting Greenwich Hospital into Marine Barracks, it will be well to see whether accommodation is really wanted. Upon turning to the navy estimates for the ensuing year it appears that no decrease is proposed, and that the number enrolled during last year it is still proposed to retain, namely 16,400. At present there are six dépôts on shore where barracks are established—one each at Woolwich, Chatham, Plymouth, and Deal, and two at Portsmouth. But so limited is the accommodation at these stations that it is proposed to spend £45,220, this year to increase it. This sum is to be divided between Portsmouth and Plymouth, which are the principal dépôts for marines. The Portsmouth division claims £21,700 of this sum for the construction of officers' quarters within Fort Cumberland, as well as quarters and barracks for twelve hundred officers and men of the Royal Artillery outside the fort. The total cost of this work was originally estimated at £167,801, of which the sum of £138,000 has already been spent. At Plymouth £180,000 was voted some time ago to purchase ground for additional barracks which were wanted, with schools for the children and gymnasium for the men ; and of this sum £124,957 has been spent, which leaves the present, and next year to divide the task of completing the work by incurring an almost even expenditure of £23,500 for each year.

As far then as can be gleaned from public records the country has been asked, and has promised, to pay about £350,000 to increase the

accommodation for the marines. No Englishman who has the interest of his country or the welfare of the Navy at heart, would, for a moment, grudge this expenditure. The marines, as a body, have existed for nearly three centuries, and during that time have been renowned for their loyalty and steadiness. In war they have been the first to shew themselves as good soldiers as sailors; in peace they have shewn themselves orderly and useful; in times of turbulence and mutiny they have ever sided with authority. On all these grounds then it is felt by everyone in power, and this feeling has been always expressed strongly both in and out of the House, that the marines are entitled to every consideration, and that as a part of our Navy they are more than useful, they are necessary. When the suggestion was made last year to reduce them it was generally considered that a mistake had been made. But it is clear that with the limited accommodation for them at present no other course is open; at all events, if to reduce their number is not requisite, to increase it is almost impossible.

Greenwich Hospital seems then, here, to supply a want. Is it absolutely impossible to devote a part, if not the whole of it to marine accommodation, and let Greenwich have a division of marines? It would thus be close to town and be ready in any emergency for active service. It would interfere with no other military body by being placed there, and would not necessarily be offensive to the inhabitants. Worse than the poor old pensioners they could not be, and a more orderly and respectable set of men they most certainly would be. Greenwich has long been associated with the Navy by tradition and through its Hospital; and by converting this Hospital from an asylum into a barrack of marines, the law of association would not be violated, and local traditions would be unimpaired.

By employing Greenwich Hospital as a Marine barrack the Acts under which it exists would not be violated. For, if a war broke out, the marines stationed there would probably be the first to be sent to sea; the wards would be empty and capable of conversion into a hospital again for the reception of wounded and disabled seamen. And, even if no war broke out there need be no real violation of the principles upon which the Hospital is founded. As seamen do not care to make a home of it, pensioners who are entitled to do so if they wish receive instead pensions of ninepence a day to those above seventy years of age, and fivepence a day to those whose ages are between fifty-five and seventy. The funds in fact are to be devoted to making allowances of money to men instead of providing them with a home. But the funds at present are not sufficient to defray the claims of all pensioners who are entitled to these advantages; for, it is impossible to grant pensions to men now who are less than sixty years of age, although applications for pensions from men between fifty-five and sixty are very numerous. Therefore, as the marines have no direct claim to Greenwich Hospital as a barrack, the Admiralty might rent it and apply the money in pensions. The Building is peculiarly adapted for barrack accommodation, as there is plenty of

room for officers and men, while there is an infirmary close at hand for the reception of invalids. The Admiralty therefore would gain considerably even if they paid for the use of the Hospital for a fresh body of marines.

At present, as a Hospital, it is almost useless. Its expenditure is not only excessive but profligate. To keep three hundred and sixty-five poor old men at a cost of about £45,000 requires no comment, and, after all, the only object of keeping these poor old souls is for the sake of sentiment or to preserve an idea with which the memory of Queen Mary is supposed to be associated. Now there can be no harm in sentiment when it does not cost too much, and when it does not stand in way of what is absolutely useful. There is, indeed, not so much objection to the first as to the second of these propositions; for sentiment like every other luxury, is when cheap sure to be nasty. But, when a building like Greenwich Hospital, is really useful, and is urgently wanted, sentiment has no business to stand in the way.

There are many ways to which its funds could be well and properly applied, all good and all reasonable, but none apparently so good and so rational as to Marine Barracks. The foundation of a new division of marines would not be very costly, would add lustre to the old Hospital, and certainly not tarnish its reputation; while the country would feel that, to a certain extent one of its great institutions was being well used, and that to a certain extent even its Naval power was undoubtedly increased.

MONITORS VERSUS IRONCLADS.

WHILE the Monitor affords a steady platform in a heavy sea for her monster guns in bad weather, which it is natural she should do, and such weather (according to the reports of our own officers), in which our ironclads in consequence of their rolling properties could not fire a gun, who can doubt which has the superiority as a man of war. The Monitors are steady because their heaviest weights are amidships. The broadside ship rolls because her heaviest weights are and always must be at the sides. The very change to monster artillery of late renders the Monitor system of ship the first essential to the command of the ocean. Such is the opinion we have long entertained, and now we find some good confirmation of it in a daily print.

The *Daily News* is no less happy in its arguments than conclusive in its reasonings on the subject of turret-ships *versus* ironclads. And we not only thoroughly subscribe to that reasoning but will bring an opinion or two from across the water; from those shores where ironclads and turrets have already tried their strength, and the latter established themselves in the estimation at least of American officers.

The report of Admiral Goldsborough on this subject appears in our volume for 1864, wherein he says, in page 637, "A difference of

opinion is found among seamen, as well here as abroad, as to whether it is better to use the guns of a plated ship in a turret or in a broadside with a deck over them. For my part I have no doubt on the subject, particularly if the ship be of modern dimensions, so that with her swiftness she might manage to find a favourable moment to enable her to act as a ram sufficiently to crush any enemy's sea-going ship. To wish for more is in my opinion, merely superfluous.

"I consider the turret as decidedly preferable for the following reasons:—

"The turret ship renders a single cannon equivalent at least to two others of the same class that might be in a battery in parts, and that with a very large diminution of crew.

"She allows the use of much heavier guns.

"She does not require of necessity so superior a degree of swiftness.

"She affords better protection to her guns and their crews, and besides she allows the use of much longer guns, *even at sea.*"

So says Admiral Goldsborough, and in our volume for 1865 we find some remarks thoroughly confirming all, and more than Admiral Goldsborough has said. It appears that Admiral Porter had four Monitors under his inspection, and that he reported on their behaviour* in a sea gale which they experienced. Anchored in a seaway off the coast, the Monitors rode out the gale well, while all the transports "cut and run." "As to the *Monadnock*, he says, she could ride out a gale at anchor in the Atlantic Ocean. She is capable of crossing the ocean alone, and could destroy any vessel in the French or British Navy, lay their towns under contribution, and return again (provided she could pick up coal) without fear of being followed. She would certainly clear any harbour on our coast of *blockaders*, in case we were at war with any foreign power." So says Rear-Admiral D. D. Porter, of the American Navy. Is this warning enough for us or shall we do nothing in the Monitor way until the day should come (which let us ardently hope it never will) when we are to have the fact forced on us by experience. Let us imagine a *Monadnock* (which would ride out a gale in the Atlantic) anchored in a gale off any of our ports doing with them what she pleased. None of our plated channel fleet if they were outside could face them by our own report in our last number. They could not cast loose their guns because they roll so deep. The heavy sea running prevents all that, while the Monitors, or the *Monadnock*, or the *Ironsides*, or *Miantonomoh*, has a steady platform, and her huge guns do all that she requires.

"These vessels," says Admiral Porter, "have laid five days under a fire from Fort Fisher, anchored less than eight hundred yards off, and though fired at a great deal, they were seldom hit, and received no injury except to boats and light matter about decks." * * * Then he adds, "I have only to remark that the principle is a good one, if the vessels are all built like the *Monadnock*.† The fire of these vessels

* His Letter will be found in p. 165.

† It was the *Miantonomoh* which came to Spithead.

continued with the fire of such vessels as the *New Ironsides* and heavy frigates is very effective, particularly against heavy plated vessels, bombproofs, and stone or brick walls."

Here then are the opinions of two American Admirals. Officers be it not forgotten who have had the experience of these vessels in their late contests in the Confederate war. If we will not believe them, and profit not by their information, we shall well deserve to see the vaunted prowess of England on her own element gone to the winds, gone with her once famed wooden walls to the shades of oblivion, and be at the mercy of any power who can adopt their mode of warfare to the fashion of the age without sticking like Chinese to old fashions because they served well in the days of their forefathers.

The ships of war of former days (although they are even in use in these piping times of peace) are gone by. Turrets will be as we have long since said, the future bulldogs of the sea, and well will it be for that nation which has them. They will do the heavy work, such as disposing of ironclads, and ironclad forts; some few heavy gun frigates will serve as rams and be the active workers of destruction, while torpedoes will do the essential after another fashion, so that warfare on salt water will be as brief as the needle gun has made it on shore, or as the Schneider rifle will hereafter make it. Words of warning have not been wanting, even from these pages,* and if we are not found ready in these new fashioned means of warfare, England must put up with the consequence. But let her look out ahead.† When war does come in earnest it will be sharp and short.

* See abundance in our last volume.

† We gave an account of the future ship of war, the *Miantonomoh*, in our last volume. But here is an account of a special visit to her by the Lords of the Admiralty and others as she lay at Spithead last year, on a very interesting occasion.—“The monitor *Miantonomoh* will, after a short stay at Cherbourg, for which she sailed on Saturday, arrive in the Thames, though this was not contemplated when she left America. In their visit to the *Miantonomoh* at Spithead on Friday last the Lords of the Admiralty were accompanied by Mr. Fox, Captain Cowper Phipps Coles, R.N.; Captain Bythessea, R.N., V.C., Naval Attaché to the British Embassy at Washington; Lord John Hay, M.P.; the Earl of Wilton, commodore of the Royal Yacht Squadron; Mr. Westley Richards, etc. The Duke of Somerset, with the controller and other members of the Board of Admiralty, having been conducted over the ship by Captain Beaumont, and minutely inspected her on deck and below, took up a position on the raised hurricane deck, in company with the Hon. Mr. Fox, to witness the firing of two shots from the enormous 15-inch smoothbore guns which form her turret armament. The officers and crew of the ship took up their respective positions at general quarters, all hatches were securely battened down, the supply of air below was provided for by setting the ventilating fans in motion, and the ship in every respect prepared for action at sea. These preparations having been made, a visit to the deck below demonstrated clearly enough that, although in certain portions of the 'tween deck the atmosphere felt slightly oppressive after just leaving the open of the upper deck, the air was really cool, as proved by the thermometer ranges, and the ship might be fought through a long summer day's action under the same conditions without distress to any on board from heat below beyond what would necessarily be found in any ordinary steamship of war. The first gun fired was charged with a 35-pound powder cartridge and a sabot live shell, at extreme

However we must not lose sight of our original intention, which was to preserve the following remarks of the *Daily News* :—

“ A Lecture by Captain COWPER COLES, followed by a discussion on the merits of turret ships, is an event which has not the attraction of novelty to render it interesting ; yet the large audiences which have been for two successive evenings drawn to the United Service Institution by such a programme testify to the deep concern taken in the subject by the *naval profession* and the public. This concern is not abated, but strengthened, by the fact that Captain COLES is still obliged to explain his views by words and diagrams, since our authorities have denied him the opportunity of showing them in operation in a sea-going ship. The truth of his principles has taken hold of the minds of the most competent judges, the partial specimens which have been allowed to illustrate them have fully confirmed their soundness. Officer after officer of the highest consideration has declared that they indicate the system which must be adopted in the future fighting navies of the world, and therefore the cold shade of Admiralty discouragement has not extinguished the eagerness with which the old details, familiar already for years, are still listened to when urged by the indefatigable inventor. And the position the question has attained is now formally confessed by the fact that the highest dignitaries of the department of naval construction, the Comptroller and the Chief Constructor of the Navy, have found themselves compelled to come down from the serene regions of official reserve, and to condescend to debate the merits of the question with the inventor, and with the mere executive officers who have got to fight our ships. If these personages should in so novel a position spend a good deal of time in reciprocal testimony to the extraordinary merits of each other, it must be conceded as only a reasonable use of an opportunity for doing that which nobody else can be found to do.

“ What Captain COLES has really to relate of novelty is comprised in what *foreign Powers* have done in the direction which we have neglected. Since 1862 twenty vessels on his principles have been designed and built in this country for other States. These vary in size, from dimensions little exceeding that of a gun-boat to those of first-class ironclads. They have crossed the Atlantic, rounded Cape Horn, been in action in the Baltic and up the South American rivers, and in all cases have behaved admirably, and thoroughly realized the good points expected from their design. America also has adopted the system, and has sent to Europe a specimen of the class of ship *with which she means hereafter to fight her naval battles* (from experience gained in the Confederate war !) And whoever, whether in England or elsewhere, has fairly studied the question has come to the

elevation. The effect was very grand as the vast globe of metal, propelled from the mouth of the gun with a deep hoarse roar, went hurtling on its course until it fell at an estimated distance of about 3,500 yards from the ship. The second gun was charged with 35 pound of powder, a solid iron shot of 460 pound, and fired point blank. If the last shot was grand, as exhibiting the flight of a 15-inch shell, this was more interesting, as exhibiting—what we have as yet made no provision for in rifling our heavy naval artillery—the perfection of *ricochet* firing. The immense ball spun along its course over the surface of the water as truly as the cricket ball passes over the smooth green sward towards the wicket. The noise of the explosion, the concussion felt, and the smoke which entered the turrets on the firing of the guns were neither more nor less than would be naturally expected in firing 35-pound powder charges.”

conclusion that vessels of such a character are far *more formidable than any broadside vessel we can turn out*. They have the advantage of being cheaper in first cost, of throwing a heavier weight of metal to tonnage, of needing fewer men, of exposing the men less, of affording a steadier gun platform, and of being able to fight when other ironclads *dare not open a port*. All these advantages are confessed and insisted on by the most distinguished of our practical naval authorities. Yet in spite of all the fact remains, that in this year of grace 1867 we have not got one single specimen of a sea-going turret ship.

"When the professed reasons for this state of things, adduced on the Admiralty side in the late discussion, are examined, they show by their shallowness what must be the true causes. Mr. REED objects that Captain COLES does not take an impartial view of the subject. Suppose he does not, is that any palliation for the Admiralty refusing to act on the recommendation of our most eminent admirals and captains? Mr. REED says Captain COLES misrepresented the merits of his own broadside ships. Suppose Captain COLES did, is that an explanation why broadside ship after ship has been built, while Captain COLES has been denied a single fair experiment? Mr. REED demurs to the alleged cost of his Bellerophon, as compared with turret "Captain," contracted for by Messrs. LAIRD, because the interest of plant and the share of the dockyard chaplain's salary have been added to the outlay for work and materials in his ship. But does Mr. REED expect the public to believe that Mr. LAIRD's charge does not include anything for the use of *his* plant, and if not a chaplain's salary, a certainly much greater sum for contractor's profit? Mr. REED in one sentence protests that he is a sincere friend of the turret system, and in the next breath he warns his hearers that officials have their sentiments of honour, and if much badgered will refuse to budge! Mr. REED deprecates the designation of the Admiralty as the Anti-turret party, because he says, *they found the broadside system existing, and are only sticking to it*; as if obstinate resistance to improvement entitled people to be treated with extra reverence! Mr. REED defends Admiral ROBINSON'S honour and devotion to his duties, when the charge is not of dishonour but of prejudices, and not of laziness but of wrongheadedness. When he comes to the merits of the turret ships he is equally infelicitous in his excuses. He says that their armour is not carried so deep below the water-line as in his vessels, blind to the fact that when his ships *roll twenty-five degrees* their unarmoured bottoms will be exposed to shot, and that *they dare not cast loose a gun*, while the turret ship, *rolling only seven degrees in the same sea*, will neither expose her bottom nor be prevented from fighting her helpless antagonist. He cites the Wyvern as proof that a turret ship will roll too, deliberately oblivious of the fact that before the Wyvern went to sea Captain COLES protested against her being considered any fair specimen of his principle, proposed improvements to adapt her to service, and received from the Admiralty an official acknowledgment of the receipt of his letter, with an intimation that it would not be acted on.

"Admiral ROBINSON, if a more plausible, was by no means a more successful, apologist than his coadjutor. But his defence had at least the merit of startling boldness, for he declared that he alone was the true friend of the Turret principle, and that Captain COLES was its worst enemy. When this dream came to be expounded, it resolved itself into the assertion that Captain COLES believes the principle applicable, with suitable adaptations, to every purpose of a ship of war; while Admiral ROBINSON declared, that though it is undeniably the best for purposes of coast defence, or of attack of harbours or rivers, it is incapable of

application to cruisers. Now, it is at least curious, that if admittedly so valuable for the important services of attack and defence in the Channel, we should possess as yet but two specimens of it adapted to such services, since the Scorpion and Wyvern, disclaimed by Captain COLES, are scouted also by Admiral ROBINSON. One would certainly have expected that in six years of preparation and panic, when we have, for the sole purpose of defence, raised a volunteer army, and spent five millions in granite forts, we should have obtained more than two imperfect examples of this acknowledged best class of ship for the protection of our shores. But when we turn to Admiral ROBINSON's objections, we find them as irreconcilable with his reasons as his approval is with his actions. He says, height of the gun above the water is necessary to enable it to be aimed at an enemy when the sea runs high, while a low freeboard is necessary to steadiness. He forgets, in the first place, that if on any occasion the gunner in the turret could not see the enemy, much less could the enemy see the low vessel which carries the high turret. But he next forgets that the very peculiarity in the turret is that *it carries the guns far higher than ordinary lower deck ports*, and as high as may, in fact, be thought desirable, while the sides of the turret ship may be cut down lower than any broadsider's ever can be.

"The public, which cannot follow the details of official jealousy, will judge in this debate from the broad and palpable facts. Mr. REED has been indulged with the construction of a whole fleet of armoured broadsiders (for the designs of which he, in receipt of a large and permanent salary, curiously complains he has not been paid); he has been allowed to alter and patch them regardless of expense, and to try all manner of experiments with a view to get a favourable result out of some; while the practical result is summed up by his friend Admiral ROBINSON in the comforting prediction that ironclads will never fight a battle in a seaway. Captain COLES has been prohibited from the construction of one vessel according to his own models, though they are models which, when adopted in private yards for the use of foreign Powers, have turned out ships that can go anywhere and fight in all weathers. For Mr. REED there has been every official indulgence and protection, so long as he would stick to fixed boxes in place of revolving turrets. For Captain COLES there has been an Admiral ROBINSON, who sits up aloft to twist the report of every seaman who calls for turrets as preferable to boxes into evidence that seamen don't understand their business, and are ridiculous in wanting to fight in bad weather, or to save their men from being picked off at their guns by rifle balls through the open ports."

The curious fact still remains before the world, that a naval officer of this country produces an invention which is carried off to America, and perfected by that Government as the most formidable means of Naval warfare; which is also reproduced in this country (although not to the extent that it is in America) at the desire of several foreign Governments, to carry on their *little* wars, and to add to their own navies; while our own Government, hesitating and doubting, and even denying its efficiency at length allow the inventor to build *one*. Our rolling ironclads are laughed at. The Americans laugh at the idea of any vessels blockading their ports in the face of their Monitors which they have obtained from ourselves, of course improving on the principle.

CIVIL LAW AND MARTIAL POWER.

*(Continued from page 249.)**No. III.—The Crown has no power to suspend Civil Law in the Colonies.*

THE concurrent authority of the great lawyers of the last two centuries has established that "martial law," in the sense of any lawful government by military authority, is wholly alien and unknown to our system; that martial law means nothing but the lawless exercise of force; that if the names of Coke, Mansfield, and Tindal retain their title to respect, the law of England, whether statute law or common law, may be *violated*, but cannot be *suspended*.

So far as England is concerned, I assume that so monstrous a prerogative will never again be claimed, even to serve as an expedient of debate. But a vague impression remains that some such power exists in the colonies; and it has, undoubtedly, been exerted. It is with this aspect of the case that I now propose to deal. I will try to justify the rule that *the Crown has no power, and can delegate no power, to supersede civil law, either in Great Britain or in the colonies*, and that Jamaica proves no exception to the rule.

It is a fundamental rule of English law—I would almost say of our civil society—that when subjects of England settle beyond seas, they carry with them the essential features of the law they live under, and they no more abandon the English law than they put off their natural allegiance. They remain subjects of the Crown; they retain their customs and rights. I say nothing of matters of detail not appropriate to their new situation, nor of petty exceptional cases in which civil society can scarcely have begun. I hold it to be beyond dispute, that wherever there exists an English settlement large enough to mirror and imitate the system of our country, there the citizen takes, as his inherent birthright, the grand customs and rights of his home, and renews, so far as can be renewed, the civil and social life of this island. He takes his allegiance to the Crown, but the Crown does not become, by the change of place, a despotic power; nor does the subject become by transplanting his home, a slave. As between king and subject the same leading relations remain; as between subject and subject the same great principles of law prevail. Details peculiar to place expire; the essential attributes of civil rule and a definite constitution survive. In a word, it is too certain for argument that the law and statutes of England existing at the date of settlement, not being inapplicable to its condition, and not repealed by its local legislation, form the law of every colony of the Crown.

Now, is it possible to argue that, in these essential features of our system, the right of civil justice, the freedom from arbitrary punishment, the abhorrence of martial law, and the nullity of royal prerogative, were not included? Will it be pretended, for instance,

that in Australia the Crown found itself in the position of the middle ages, and the colonists in the place of the yet unchartered subjects of King John? If it were not for claims deliberately made, it would almost be childish to insist that the first and most vital of all the attributes of citizenship was the first thing which English settlers take with them—the indefeasibility of civil justice, and subjection to a *limited Executive*.

Now men are found to contend that Jamaica forms a singular exception; that the settlers left behind them this cardinal right of citizenship, as totally inapplicable to the condition of the colony; and for the same remarkable reason the Crown always had there a power of vicariously suspending the laws. One would think that some worthy descendants of Jeffreys and Noy, of the men who sold their prostituted skill to tyranny, had survived somewhere in that island. Let us see how the case really is. I read in a special treatise on the constitution of the colonies—"In Jamaica, as in all other British colonies similarly acquired, all English laws existing prior to its occupation, and applicable to the colony, are binding."* The island, though conquered by Cromwell, was not regularly settled until Charles II., who, in a proclamation, did

"Publish and declare that all children of any of our natural-born subjects of England to be born in Jamaica shall, from their respective births, be reputed to be, and shall be, free denizens of England, and shall have the same privileges, to all intents and purposes, as our free-born subjects of England"—

always excepting, we are assured, the privilege of not being put to death at the king's good pleasure. Then, by a statute of George II. (1 Geo. II. c. 1. s. 22, substantially renewed by 8 Vict. c. 16—Jamaica), it was enacted that

"All such laws and statutes of England as have been at any time esteemed, introduced, and accepted or received as laws in this island, shall, and are hereby declared to be and continue, laws of this, his Majesty's island of Jamaica for ever."

And we are now asked by learned jurists to believe that the provisions of the *Charta*, of the Petition of Right, of the common law, as to exemption from arbitrary arrest and military punishment, never had been introduced, accepted, or received as law in Jamaica. Let the shades of Scroggs and Shower be at rest: they were not the most servile of all English lawyers!

But unluckily for the Showers of this age (those servants of the Crown held high office, too, in their day), Lord Mansfield, in two of his most celebrated judgments, refers to and approves of two cases, both of them from the Island of Jamaica, and both of them bearing on the constitutional rights of the settlers.† In the one case he gives his

* Mills' Colonial Constitutions, p. 233.

† See XX. State Trials, 232 and 326.

opinion that the colonists were not liable to taxation by the Crown, for the same reasons that all English subjects are free; in the second case he expressly points out that the Governor of Jamaica is responsible in England for acts of arbitrary imprisonment. From all these considerations together I still retain the opinion, in spite of the *obiter dicta* of the leader of the House of Commons, that the English citizen of Jamaica possesses in the fullest measure the first of all the franchises of every English citizen—the freedom from arbitrary punishment.

I turn to the question if that freedom has been voluntarily surrendered by his own legislative Act—if the citizen of Jamaica has passed acts to destroy that personal safety under the law which his English ancestors passed Acts to secure.

We come to the inquiry with this proviso, that the settlers of Jamaica enjoy to the full the common birthright of English citizens, and that the English law knows nothing of "martial law," except as military violence. Now, it is most certain that the Jamaica legislature emanates, not from Parliament, but from royal commission; and the Crown could not give it, and has not given it, the power to abrogate the first principles of the statute and common law of England. The Jamaica legislature has attempted nothing of the kind. We are told, however, that a certain clause in the Militia Act of Jamaica (9th Vict. c. 35 s. 96) has had this tremendous effect. This clause empowers the governor, with the advice of a specified "council of war," to declare martial law in particular districts, and he is forbidden to declare it except under such advice. There is no definition, account, or statement of what martial law means, no explanation of its scope, power, or effect; what it may imply, what it authorizes, what it abrogates. There is, in the existing statute law of Jamaica, no single Act which does this—which limits, or explains, or defines it. If it be a thing recognized in law, the law must have some mode of explaining it. You are driven back to the common law to explain it, and the common law has a very brief explanation to give. The common law declares that "martial law" is military force; it knows of nothing else under that name—of no recognized system, of no lawful body of rules, nothing that has a place in civil society. Martial law is to civil law only as something which it abhors, knows not, defies. It is as if you might speak of "mob law" or "Lynch law;" it is the rule of the stronger. It simply means the recourse to the operations of war. In this sense the statute is intelligible and right. It empowers the governor, in cases of invasion and public danger, to proclaim that a *state of war* exists; that the rule of the stronger has commenced; that force is about to be used by the Government in defence of itself and the public—a duty which no one has ever denied to any Executive, but a duty or a right which neither suspends, nor abrogates, nor supersedes civil law as a right (though it forcibly arrests, it may be, its procedures, by sheer violence); nor withdraws for one instant, or in any particular, any citizen, official or not, from complete liability to account for every act in a civil court, so soon as their ordinary procedures are resumed.

Such is the meaning of "martial law" when a Governor proclaims it, or a statute authorises it, and the common law is left to interpret its import. It is a notice that the law is about to be *violated*, by resort to measures of war. But the new doctrine insists that the missing explanation may be supplied elsewhere—that the statute authorizes a state of things, the effect of which may be gathered from without. From whence? From some darkly-coloured picture of a state of things which may possibly exist, and which is vulgarly supposed to be lawful when an Austrian general proclaims a state of siege, or a Russian governor dominates in Poland—a real unquestioned and unquestionable absorption of all the civil powers of the community into the hands of a general; a lawful, because an unimpeachable, rule of force; a systematic law of the sword. Or are we to be told that this law is to be explained by some ancient "custom" of the island; that martial law has always been known in the island of Jamaica as a time of legal licence, a period for the lawful putting to death of black men by white; a recognized and organized reign of terror, during which civil law was dormant, and into which, on its awakening, it never could look back? Are we asked to believe that an Act of a Parliament of Englishmen embodies, and must be explained by, some despotic practice well known and thoroughly understood at Warsaw or Cayenne; some "custom" of the country long in use amongst the slave-drivers of the island to punish their refractory slaves? I would as soon believe that any act will, in an English court, be interpreted by the light of a custom of "martial law," as exercised by West-India planters, as I should believe that an English judge would interpret a statute by the light of, and with reference to, the "custom" of Dahomey.

But a startling claim has been made by the Attorney-General of Jamaica and the legal adviser of its late Government, that this right to the exercise of martial law is an old privilege of the island, and is authorised by one of its earliest statutes. "I will undertake to say," he tells us, "that the sun never rose and set upon Jamaica as a country in which the English law prevailed in regard to martial law."*

Let us examine this Act. It runs thus (33 Car. II. c. 21):—

"And be it further enacted, by the authority aforesaid, that upon every apprehension and appearance of any public danger or invasion the Commander-in-Chief do forthwith call a council of war, and, with their advice and consent, cause and command the Articles of War to be proclaimed at Port Royal and St. Jago de la Vega, from which said publication the martial law is to be in force; and then it shall and may be lawful for the said Commander-in-Chief *to command the persons of any of His Majesty's liege people, as also their negroes, horses, and cattle, for all such services as may be for the public defence, and to pull down houses, cut down timber, command ships and boats, and generally to act and do, with all full power and authority, all such things as he and the said council of war shall think necessary and expedient for His Majesty's service and defence of this island.*"

* Report of Jamaica Commission—Evidence, p. 323.

So far the Act is entirely consistent with all that we maintain. It has reference solely to war, and it authorises the Governor to take measures absolutely needed for the public defence. But the statute does not stop there. As if foreseeing the dangerous use to which these words were hereafter to be turned, it provides—and this proviso is carefully omitted by the Attorney-General in his evidence:—

“ Provided also, and it is hereby enacted and declared by the authority aforesaid, that nothing within this Act, or any clause therein contained, shall be deemed, construed, or understood to give any Captain, General, or Commander-in-Chief *any power or authority for the sending any person or persons off this island against their will, or to do any other act or thing contrary or repugnant unto the known laws of England or this island.*”

This statute was repealed by various recent Acts, and lastly by a general repealing Act in the sixth year of the Queen, but it was in force from the reign of Charles II., the date of the settlement of the island, until late years. It is plain that, during that period, whatever martial law might be in Jamaica, it was limited by law most carefully to the *impressing* men and animals for the public defence, and expressly excluded even the illegal banishment of a citizen, or any thing repugnant to the known laws of England. That Act is not now in force, and the statute which limits the proclamation of martial law does not contain the proviso and definition of the original Act. But if any one maintains that the fact of that omission authorises “martial law” in a sense which it bears at Warsaw, or in any arbitrary sense he pleases to invent—the whole notion being abhorrent to English common law—I think it will be a masterpiece of legal ingenuity. All we ask is, that the advocates of martial law shall tell us what they consider it to be either in England or in Jamaica, and in what authority they find that definition. In England, martial law is expressly forbidden by statute; in Jamaica it is forbidden in the only sense in which they claim to enforce it. I have almost done with this subject, and I believe that, to a jurist, in all the striking features of this case, the truly fascinating problem will be to ascertain what human acumen will contrive to unearth as an argument for this doctrine.

Every thing in the history of the island, in the statute-book of Jamaica, in the actual proclamation of Governor Eyre, combines to prove that the “martial law” which the Act of the Jamaica militia empowered had reference to the *conquering of an enemy in the field, and pressing civilians into the public service.* The history of the island is full of the sudden invasions of Spaniards and other public foes. The island was frequently thrown by invasion and by insurrection into a state of war. It was the duty of the executive to repel force by force, and to kill and slay enemies and rebels in the field. No one denies it, or doubts it. It was quite right that this state of war should be notified, and the statute empowers the Governor, under due conditions, to proclaim martial law. The statute itself does not define it, but previous legislation had strictly limited it to the necessity of war, so that nothing illegal was done. And how does this actual proclamation

run? It proclaims, in the name of the Queen, "that our military forces shall have all the power of *exercising the rights of belligerents* against such of the inhabitants, etc., as our said military forces may consider opposed to our government and the well-being of our loving subjects." It proclaims a state of war with rebels in the field, and the assumption of the rights of *belligerents* against them. Neither the Governor nor the Queen could do more. But what are the rights of belligerents? Killing enemies in the field. Can you try belligerents for treason? Are belligerents capable of indictment upon constructive charges of conspiracy? And now, under the effect of a statute and a proclamation dealing with a state of war, and giving forces in the field the rights of war, and no word more, on the strength of a repealed statute, strictly confined to acts otherwise lawful in themselves, we are told that the whole machinery of civil government was suspended; that civil and criminal justice was superseded; all civil functions, including the trial of civil crimes and the powers of civil magistrates, passed into the hands of soldiers; that a civilian who had done no overt act was rightly dragged out from the shield of civil law, summarily charged on the most solemn and formidable of all civil crimes, committed, as they charged, before even the proclamation of martial law was issued; and lawfully, without appeal, put to death, long after the very runaways had disappeared, and no act of war or violence was visible. Monstrous and insolent pretence!

But, in order to show that the proclamation of martial law in Jamaica not only did not supersede, but did not even disturb the exercise of civil justice, I draw your attention to an Act of the Jamaica Parliament, constantly renewed, which runs thus:—11 Vict. c. 7 (Jamaica):—

"Whereas it is highly expedient during the existence of martial law to prevent indebted persons from quitting the island, to *sanction and enforce criminal process*, and process for the preservation of the peace, to enable justices and vestries, and other parochial officers, to exercise their functions, and landlords to recover their rent in arrear: be it enacted, etc.

"2. That it shall and may be lawful for the chief justice of this island, and the assistant judges of the supreme court of judicature, and all and every the justices of peace in this island, to *act in their several stations and capacities in all criminal matters cognizable before them respectively*, by committing or bailing the offender or offenders, or binding over parties or witnesses to prosecute, in the same manner as they or any of them might have done *in case martial law was not in force*; and the coroners of the several parishes of this island, or any of them, are hereby likewise empowered and required to execute his or their office in every respect, *notwithstanding such the continuance of martial law*.

"3. And whereas many and great inconveniences may arise from possessions being forcibly taken and afterwards forcibly detained in time of martial law: be it enacted, etc., that it shall and may be lawful for the chief justice of this island and the judges of the supreme court

of judicature of this island, in cases of forcible entry and detainer, to sign writs of restitution and writs of possession, and to act and do therein as shall seem to them necessary and expedient, according to law; and the justices of the peace in this island shall also have and hereby have full power and authority to act in all cases of forcible entry or detainer in as full a manner as any of them could have done in case martial law was not in force; and the provost-marshal and his deputies and the several constables are required to execute all writs, warrants, or other process and orders that shall come into their hands for the purposes aforesaid, under the same penalties, and subject to the same punishments, as if martial law was not in force."

The Act 21 Vict. c. 20 (1857) recites the foregoing Act, and then enacts that—

"The recited Act of the 11th Victoria chapter 7, and every article, clause, matter and thing therein contained, except in respect to the power or authority of the justices and vestry of the several parishes of this island to raise parochial taxes, shall be, and is hereby continued in force from the 31st day of December, 1857, until the 31st day of December, 1867."

This statute appears to me of critical importance. It proves that, whatever the Assembly contemplated by a proclamation of martial law, it never intended the suppression or even the interruption of civil and criminal justice. I think we may justly complain that, in all the official statements, an act of importance so great has been studiously ignored, and that, with such a law staring them in the face, servants of the Crown in the island, at home, and in Parliament have dared to offer us the miserable and dishonest defences we have heard. By the light of this statute, the statements of ministers on martial law and its necessary consequences are seen to be a daring fraud, hazarded only with the hope that the public would never detect it. It is not very difficult to see the explanation of these two statutes of Jamaica. The one empowers the executive to proclaim martial law; the other provides that, when it is proclaimed, the whole machinery of civil justice shall remain undisturbed. The effect of proclaiming martial law I have shown by the old laws of the island was strictly confined to impressment for service. If it is attempted to give it a wider meaning by reference to a custom, I reply that a "custom" arising out of slavery, and the infamous train of its results, no English advocate would dare to plead before the bench of an English judge. Whatever it was, it was utterly extinguished by the Act for the abolition of slavery; which Act has destroyed all separate rights of colour, and entitles every subject of the Crown to the same civil rights and protection. But, whatever may have been the intention of these Acts, in Westminster Hall they can be read only in one way; and that way is utterly destructive of the outrageous claims of "martial law" we have heard.

This statute provides that every act of civil justice shall proceed as if martial law did not exist; it shows that martial law refers exclusively to war, and not to civil or criminal justice; it proves that no reason exists to make the ordinary criminal courts impossible under martial

law ; it establishes that this reference to popular notions about martial law, and to the ancient " customs " of slave-drivers, is as worthless as it is degraded ; and I think it makes out that the leader of the House of Commons maintained, not a special prerogative of Jamaica, but a doctrine of constitutional law as unworthy and as wild as any ever uttered in those walls.

No. 4.—Military Courts can never have Jurisdiction over Civilians.

At a moment like this, it is of paramount importance to define the powers of the Executive in dealing with rebellion by the sharpest lines of the law. We, who stand waiting for the storm from the West to break upon our shores, as men wait for the tempest which the signals foretell ; who desire, when that storm bursts on us, to see a real, a strong, an irresistible government ; who believe that the moral forces are stronger than bayonets, that the consciousness of right, duty, and self-restraint gives to rulers a higher strength than all the power of mere lawless fury ; we are doubly bound to insist that the functions of lawful government shall be known and sustained in all their integrity. Let us, therefore, continue the inquiry into the duties and rights which attach to the exercise of military force against citizens of an English community.

We have done with the wretched pretence that the Crown or its officials can ever lawfully suspend civil law, or the least fraction of the common or statute law of the land by any expedient whatever, in England or in any dominion of this empire. The " suspending " power is the abrogating power, the legislative power. The " suspending " power is the mere corollary of the " dispensing " power : both must lie in the limbo of extinct monstrosities. To talk about any emergencies, any necessity whatever, as conferring the lawful exercise of this right without liability to account, is in a legal sense simply puerile. Who is to determine when this necessity arises ? The executive who is to exercise it, or the loose expression of public opinion ? The mere form of declaring that a " necessity " has arisen can neither increase nor reduce the legality of the act of suppressing the law. Times will occasionally arise when the law cannot possibly be obeyed. Force, necessity, then itself violates the law. But the duty of deciding when this moment has arrived remains indefeasibly with the law.

Let us pass to the practical question—what are the duties and the liabilities of a government suppressing an overt rebellion ? At the outset, let me insist that it forms no part of my argument to deny that every Executive is empowered, or rather is bound, to exert the whole force at its disposal to suppress violent resistance to lawful authority. Nor do I pretend to deny that, for even tremendous breaches of law, it may have a valid defence. Nor, lastly, do I venture to say that, in every case of such breach, it is desirable to put it to establish that defence. The maxims I maintain are these :—

1. Every official, like every citizen, whether acting under orders of

superiors or not, remains individually *liable to trial* for every breach of the law.

2. When put on his trial he may prove as a perfectly valid defence that his act was the only possible mode of fulfilling a lawful duty, or an act of absolute necessity arising from the nature of the case.

3. This absolute necessity is a pure question of fact, which nothing can withdraw from the inquest of a jury.

4. There can be no preliminary bar to such trial, but the plea of a strict Parliamentary indemnity.

5. Even when this indemnity is pleaded, and, *à fortiori*, when it is not, it always remains for a jury to decide if the act charged be tainted with personal malice, and was an abuse of a power defensible and lawful in itself.

Let us see what powers and what liabilities are created by these rules as regards an Executive. But in the first place we must remember that in the eye of the law an official is a citizen, his acts are the acts of a citizen; insurrection, civil war, revolution, are periods when law is extensively violated. Official immunity, prerogative, "reasons of State," and "martial law," are, legally speaking, monstrous fictions, existing only in the notions of ignorance or oppression. Under these rules, then, every official, from the highest to the lowest, civil or military, is bound to account for his acts in a civil court, if challenged; and not even the existence of a notorious civil war can relieve him of this responsibility. It is his duty to put down by force all resistance to lawful authority in every shape; but it is his duty to do nothing more. He commits a crime when he does any act of violence of which the direct object is not the suppression of unlawful resistance. If he pleads necessity, this necessity must be very strictly proved. It must be a real necessity, admitting of no alternative; and not an obvious expediency, admitting of opposite opinions. It will be no answer to a gross breach of law, that it was a very tempting opportunity of reaching a very desirable end. The true test of the act is, that it is the *sole*, and also the *direct* means of effecting a lawful end. The one justification is necessity, and the moment we admit an alternative which was not tried, or an indirectness in the conduct pursued, the necessity becomes a matter of opinion, and vanishes into air. If I kill a man who is in the act of killing me, I am clear. If I kill a man whom I detect in a conspiracy to kill me, I am guilty. It is neither the sole means nor the direct means of lawfully preserving my life. If a governor kills ten thousand men in open rebellion, it may be no more than his duty. If he kills one man in order to discourage the rebels, he commits a civil crime. It is neither the sole means, nor a direct means of suppressing rebellion.

The reason of this is obvious. A licence to commit a crime is so tremendous a condition that nothing can support it but sheer overwhelming palpable necessity. Civil society could not exist under less stringent protection. If I am attacked by a footpad in the road, I may lawfully kill him in self-defence; but I cannot lawfully kill a man whom I believe to be a footpad. If every man were left to judge who

are his dangerous enemies, and when a paramount necessity existed, civil-law would speedily pass into Lynch-law. Now the violation of law by rulers is far more dangerous and abhorrent to law than its violation by private men. The rules by which both cases are guided are precisely the same. If an Executive were left to decide who are the enemies of the State, and what necessity exists, political society would cease to be free. Cases, of course, may exist, both in civil and political crises, where a bold act of violence may be the salvation of numbers. A captain of a ship might kill a party of seamen whom he knew to be meditating mutiny; a ruler might arbitrarily arrest the proven leaders of a treasonable conspiracy; but in neither case can the law pronounce him guiltless of crime. It is quite in accordance with the wisdom of the law, that he who assumes of his own will these tremendous functions should lie under the constant check of entire liability to punishment. The law can deal only with generals, and not with extraordinary exceptions. They are cases for honourable pardon, and not for legal acquittal.

The only real instance of the exercise of martial law in these islands, for two centuries, is that of the Irish rebellion of 1798. In May of that year martial law was proclaimed by the Lord-Lieutenant of Ireland in the midst of a violent rebellion. An Act of Indemnity was then passed for all things committed under that proclamation. And in 1799 an Act was passed by the Irish Parliament, by which martial law was formally authorized. Now those Acts, and the cases under them, entirely justify our view. Of course it will not be lost sight of that an Act of Parliament can do any thing. No one for a moment contends that a statute may not make martial law or military justice, in every one of its meanings, lawful. The fact that an Act is passed to establish it in a distinct form is a sufficient proof that it is unlawful without it. Nor, again, would an Act of the expiring moments of the servile Irish Parliament be any authority for the repeal of an ancient common-law right, and a clause of the Petition of Right, nor are the saving clauses of royal prerogative inserted by Crown lawyers as mere surplusage in an Act very adequate proof of the prerogative itself. But the Irish statutes tell wholly for us. The Act of Indemnity declares that deeds had been done under the state of martial law which had no justification at law. It thus recognises our claim that a proclamation of martial law offers no immunity from civil liability, and that the suppression of a notorious rebellion may be a good defence, but is no bar to trial. But the Irish Act (39 Geo. III. c. 11) which authorises martial law, is perfectly explicit in its clauses. It defines what are the duties, powers, immunities, and liabilities of the military authorities; what is the scope of their jurisdiction; and what is their relation to civil courts. It gives tremendous powers, which may possibly have been warranted by the nature of that terrible crisis. As emphatically it implies that such powers would be wholly illegal without it. It saves the king's prerogative, as it calls it; but it explains this to mean (section 6) the power "to resort to the exercise of martial law *against open enemies or traitors*;" and again, "to suppress

treason and rebellion, and to do any act *warranted by law for that purpose.*" Exactly: throughout it contemplates a state of war and an open enemy in the field. It is concerned exclusively with the *suppression* of that rebellion, and not with its *punishment* when suppressed. It gives to the Executive tremendous powers, wholly unknown to the law, which it carefully limits and explains. For form's sake, it saves the prerogative; but it is plain that this prerogative was never supposed to include a power of suspending the law, or the statute itself would be superfluous. It states the powers of an Executive to be the suppression of rebellion by acts "*warranted by law.*" It admits the liability of the Executive for all such acts as exceed this limit. And now this statute is relied on to justify the assumption by Government of such unbounded powers under some general "*prerogative*" of the Crown, or the simple phrase of "*martial law*" in an old militia statute, and that at a time when a petty riot which had existed was totally suppressed, and order remained undisturbed!

And now let us turn to the cases under these Irish Acts. In the first place, there is the famous case of "*Wright v. Fitzgerald.*"* Martial law was in full vigour under this proclamation of 1798, when Mr. Wright was unjustly flogged by the Sheriff of Tipperary, Mr. Fitzgerald. The Act of Indemnity was in force, but the victim recovered a verdict against his assailant. The judge thus laid down the law: "*The jury were not to imagine that the legislature, by enabling magistrates to justify under the Indemnity Bill, had released them from the feelings of humanity, or permitted them wantonly to exercise power, even though it were to put down rebellion.* They expected that in all cases there should be a grave and serious examination into the conduct of the supposed criminal, and every act should show a mind intent to discover guilt, not to inflict torture. By examination and trial he did not mean the sort of examination and trial which they were now engaged in, but such examination and trial the best the nature of the case and existing circumstances would allow of. * * * It is required that one should not exceed the necessity which gave him the power, and that he should show, in his justification, that he had used every possible means to ascertain the guilt which he had punished; and, above all, that *no deviation from the common principles of humanity should appear in his conduct.*"

The second case is that of Wolfe Tone, in 1799. The rebellion was in full activity, and the state of martial law in force, when the famous leader of the Irish insurrection was taken on board an enemy's ship of war, in an enemy's uniform. He was tried by a court-martial and sentenced to death. But the Court of King's Bench instantly granted a writ; and, by a noble exertion of the judicial authority, tore a notorious criminal from the illegal fangs of a military tribunal. It established that the most flagrant traitor was amenable to the law, and not to the sword; that martial law exists only in reference to operations in the field; that civil justice will confront and arrest the red weapon of the soldier on service, in defence of the meanest of those who are committed to its keeping.

* XXVII, State Trials, 65.

Now, what is it these two cases establish? The first shows us, that neither the existence of civil war, of martial law, or an Act of Indemnity, relieves the authorities from liability to account for their conduct, and the necessity of showing that it was governed by substantial justice. The second establishes that neither do these conditions at all affect the immunity of civilians from military courts. It is imagined that the law, as established against Governor Sabine, may apply in peace, but not under a declaration of martial law. The case of Wolfe Tone proves that no distinction of the kind exists. Martial law itself relates exclusively to operations of war, and therefore can do nothing to affect the rights of civilians to be tried in all cases by civil courts. Courts-martial, or rather mere military committees for the information of the officer in command, may possibly inquire if a prisoner be actually a prisoner of war. They may possibly sentence him to death, as they may any other prisoner. The only offence they can try is that of being a belligerent. The only punishment they can inflict, is the ordinary punishment on belligerents. But the story should be told only in the dramatic and stirring language of the original report.

Mr. Curran rushed before the Chief Justice (himself destined soon to fall a victim of the rebellion), and said—

“I do not pretend to say that Mr. Tone is not guilty of the charges of which he was accused; I presume the officers were honourable men: but it is stated in the affidavit, as a solemn fact, that Mr. Tone had no commission under His Majesty, and therefore *no court-martial could have cognizance of any crime imputed to him*, while the Court of King's Bench sat in the capacity of the great criminal court of the land. In times when war is raging, when man is opposed to man in the field, courts-martial might be endured; but every law and authority is with me whilst I stand upon this sacred and immutable principle of the Constitution—that martial law and civil law are incompatible; and that the former must cease with the existence of the latter. This is not the time for arguing this momentous question. My client must appear in this court. He is cast for death this day. He may be ordered for execution while I address you. I call on the court to support the law. I move for a *habeas corpus* to be directed to the provost-marshal in the barracks of Dublin, and Major Sandys to bring up the body of Mr. Tone.” Lord Chief Justice Kilwarden—“Have a writ instantly prepared.” Mr. Curran—“My client may die whilst this writ is preparing.” Lord Chief Justice—“Mr. Sheriff proceed to the barracks and acquaint the provost-marshal that a writ is preparing to suspend Mr. Tone's execution.” The sheriff reported that the officers refused compliance. Lord Chief Justice—“Mr. Sheriff, take the body of Tone into your custody. Take the provost-marshal and Mr. Sandys into custody, and show the order of this court to General Craig.”

So nobly did the judges of that day assert the supremacy of civil justice against military usurpation, even in the heat of the Irish rebellion. The very mention of that word at this moment must make us tenfold more anxious to insist that the sacred principles of civil justice suffer no diminution from us.

VOYAGE OF THE "PIONEER."—No. 6.

(Continued from page 256.)

SHORTLY after we had anchored, the wind suddenly flew round to the eastward, in the midst of a crash of thunder, blowing as hard a gale as before, and bringing the spray of the breakers. This came flying over us like showers of star-beams, all ablaze with the lightning, and was driven by the storm far astern of us, appearing like a train of meteors, lighting up the raging surface of the sea, until lost in the distance of darkness. It was an awful night, yet I felt that the worst was over, and that our danger was light compared with what we had passed through, and that the wind having shifted so as to bring the shoal ahead of us, there were now good hopes of saving the vessel.

The crew had behaved well all along, and had kept the deck day and night during our perilous run for the Sands, but now that there was nothing to do except the work of the pumps, they sank down one after another on the deck wearied and worn—

"To dream of the dangers,
They bravely had borne,"

and little cheery Tom fell asleep, singing his favourite hymn,

"I hear a voice when rough the waves,
Fear not, my child, upon the sea,
The Angel of my presence saves,
Each one who puts his trust in Me."

The gale blew its hardest during the first watch, with thunder and lightning such as I had not known, even in the gulf of Mexico, or on the west coast of Sumatra. The lightning was especially remarkable for the variety of its colours, and the length of its zig-zag chain over the entire heavens. The harder it blew, the more thankful we felt for the shelter of our breakwater of sand, which was so close to us that there was no drift for a sea to get up, and our two anchors held on without dragging.

As hour after hour of this wild night passed away, and the gale began to moderate in the middle watch, there was anxious longing for daylight, that we might look about us and see if we were near the entrance of any creek or river, for beyond the fact that we were off the sea face of the Sunderbunds, all else was uncertain.

Watching for break of day in a position of danger is a well known event in the life of many a seaman, and from the time of a certain remarkable shipwreck off the "Island of Melita," where four anchors were cast over, and they "wished for day" down to the present hour, no passage in a seaman's life is likely to be better remembered. In reading the record of that shipwreck, we are led to desire that as in that case of imminent peril, so in all others some one or more might be found on board trusting in Divine help; but while it is so much the

custom among English seamen to begin a voyage without asking God's blessing, and to end one without giving Him thanks, it seems too much to expect, or to hope that it should be so in these degenerate days.

As the day dawned the wind veered to the South, right fair for the shore, and we hove up the second anchor and got all ready to make sail as soon as we could see our way. At daylight we saw the tops of jungle trees, and a break in them which we took to be the mouth of a river, for which we presently steered, and after passing over a spot where the rollers were high, the last of them swept us clear of the shoal into smooth water.

As we neared the shore the gap widened, and we found it to be the entrance of a river, but what river there was no means of discovering, as there had been no observation since the day before making the Jauggernaut Pagoda; and on the whole of this coast at the head of the Bay of Bengal there are no distinguishing land marks whatever to help mariners to ascertain their position. However, we cared little about this at the time; the great thing for us was *shelter*, and we felt that to be in any river whatever it might be, was to be safe; and although the shore is as desolate as any shore can be, there was nothing but light hearts on board, from a sense of danger left behind and done with. We entered the river just after sunset, and cast anchor in its sheltered waters with a feeling of thankfulness to God for our remarkable deliverance, not I hope to be forgotten, as the *Pioneer* now took her final leave of the great ocean, on which she had encountered so many perils, and from which she had had so singular an escape.

Here we had a quiet night, and a good sleep for all hands for the first time since leaving England, after a passage of five months, and no one on board except the commander troubled himself to think about where we were, or how far we might be from the port of our destination.

Next morning we tripped our anchor and stood up the river for four or five miles, until we came abreast of a creek on the port side leading to the westward; so here we dropped our anchor to explore.

I went away with the life boat, and after pulling a few miles up the creek to see the trending of its reaches so as to compare them with a chart of the "Sand Heads," which fortunately I had on board, I found the river we were in to be the "KAGGA." Therefore as soon as this was discovered, a boat was got ready to start for Calcutta to obtain assistance, in charge of the first officer with a picked crew.

The S.W. monsoon had set in strong after the gale, but there was no use waiting for better weather, and the boat was sent away the next morning with the chart, on which was marked the *Pioneer's* anchorage, and with instructions to make Westing whenever possible, so as to reach the Hoogley, and it was arranged to fire a rocket and burn a blue light on board every night at twelve o'clock.

The weather was so bad after the boat left us, that when the tenth day had come without our hearing anything, I had got uneasy and began to fear that the boat was lost, or that they had missed their

way in such difficult navigation as that of the "Sunderbund" rivers and creeks, which are like an interminable net work.

On this day all hands were placed under the engineer, and a start was made to try and get a paddle fitted on one side so that we might steam to the westward if no assistance should reach us.

On the eleventh day the engineer reported two boats pulling down the creek, and the second officer also said he saw the boats, and so certain were they, that the latter asked leave to take the jolly boat to meet them, and bring on board the letters.

This turned out to be a very singular optical delusion, resulting in part from an excited imagination—two pieces of drift wood were all that could be seen when the jolly boat got into the creek, and the men returned much sadder, if not wiser than when they started. When on the following day a steamer was actually seen coming towards the *Pioneer*, none of us on board, I expect, felt so much as the day before when the shout was heard "two boats coming down the creek," for there are some emotions too powerful ever to be repeated, as no doubt many have experienced, and this was an instance of the kind.

On the twelfth day (June 30th) just before dark, the sound of paddles was heard, and soon afterwards a steamer came in sight and sheered up alongside of us, bringing our boat's crew and a stock of fresh provisions, and more than all else our *letters* from home. We were indeed now restored again to the world, brought as it were to a sense of life.

We started under tow of this steamer at daylight the next morning for Calcutta, and nothing worthy of note occurred on the way, excepting our seeing an unusually large tiger swimming across a creek through which we were passing, most likely in chase of deer which are very abundant in these jungles, and on which the tigers chiefly feed.

After three days' detention in one of the rivers waiting for a more powerful steamer to tow us, we arrived at Calcutta on the 7th of July, and met with as much welcome and generous reception as we could have desired on the part of those interested in the vessel, who had given us up as lost.

W. C. P.

BUOYS AND BEACONS.

THE first question which naturally presents itself in the use of buoys or beacons is the purpose for which they are intended. The answer of course must be to render danger conspicuous. The next query then is,—why are they not made themselves as conspicuous as possible, and placed on the surface of the water, instead of being half, or most frequently more than that, below it, buried in it, and themselves of a form, which becomes less conspicuous from this circumstance. In our

estimation we do not know a subject which is more open to reform than that of the form of buoys, which implies their being readily distinguished in general. And yet the means of achieving this first of qualities are very well known. Why is the antiquated fashion of using half-sunken cask-shaped buoys (of the first class too) so religiously (we might say) adhered to, when the compact upright high floating buoy, known in these pages long ago, and found in some few favoured parts of our coast, why we say, is not this buoy which really fulfils its purpose entirely, and certainly in a manner superior to all others, why is not this employed generally? It is as capable of being painted as any other. It is as capable of carrying a beacon of any form, and more so perhaps than any other, and that beacon too in the shape of balls, tubes, triangles, etc., all which may be varied at pleasure in number and combination. Who that has strained his eyes and his patience in a nasty chopping sea with disappointment at the end of a long search, wet with seas or misty weather, in endeavouring to make out the buoy of some important shoal that defied all the scrutiny of the most practised eyes, and when that much desired buoy would bury himself in the wash of the sea and disclose his ugly form only when it was almost within hail. But this is a common occurrence and is (it appears) likely to continue so. We delight in making difficulties. Perhaps it is a part of our duty. But give us Herbert's buoys: they are honest and not afraid of being seen as the others are: they stand conspicuously out of the water instead of wallowing and concealing themselves in seas at a time when of all others, buoys are most wanted.

But our subject has run away with us, and here is Captain Bedford's plan of buoying the coast with the present abominably shaped system in which plan he adopts districts of coast or divisions, taking a centre for each: thus England is portioned into three divisions;—then these divisions have centres, head centres! to work from: thus of England the centres and limits of the divisions are,—

1st. The Mersey between the Mull of Galloway, and St. David's Head.

2nd. The Severn between St. David's Head and the Land's End.

3rd. The Thames between the Land's End and St. Abb's Head.

We gather also from the scheme before us that "all the General Outer Fairway of the navigation is proposed to be buoyed as *to* and *from* (we italicise for clearness) a district centre." We thus get the use of the centres, but all harbours, lochs, and estuaries, as *to* and *from* the principal port therein, such as *to* Stranraer in Loch Ryan;—then it follows we presume, that *to* and *from* these centres, the buoys marking the channels would be black on one hand and white on the other.

The laws proposed by Captain Bedford never to pass between two chequered buoys nor buoys of the same colour, excepting when either has a mark—and a mark on a buoy denoting a turning point may be very good—but we dislike colour and would have only black and white; for a red and white or black and white chequered buoy at a

distance under certain skies would look the same. Yet we do not object to an entire red buoy, and we consider also that a vertical stripe black and white would be far more effectual, that is conspicuous (for therein to us lies the first approach to effect), than any chequered buoy.

We confess that we are not friendly to the system of centres, for not only the places which are to be considered centres of the divisions or districts, but the very limits themselves of these districts, are not always to be remembered. And why encumber the seaman's mind with such matters when he has enough besides of channels, bearings, and lights to attend to—in addition to the buoys themselves to make out first if he can. In our opinion he would exclaim vigorously against them. We would rather proceed if we could on the broad ground of the *seaface*, or that side of a shoal off a coast facing or presented to the sea and that facing the shore, each to be distinguished by black or white, or without or with beacons, or balls, triangles, etc., if such a system could be devised. But the principle of facing seaward or landward for shoals should be simple, and the centres are not so easily remembered because more numerous than seaface and landface everywhere. We are not here alluding to estuaries of course such as that of the Thames. But the whole subject in our estimation requires thorough revision, and we trust that should it soon arrive at that stage, the point of conspicuousness in any buoy may be placed at the head of the good qualities which it shall possess—and that we shall see no more of those miserable can buoys or double cones and barrels burying far more in the water than they shew out of it.

In corroboration of these views we find the following passage in "The report of the Committee of the Society for improving the condition of Merchant Seamen," that we have received since the foregoing was committed to paper. Under the head of *Buoys*, the Committee observe in their appendix—"The best description of *buoys*, viz., those which float *upright* and *can be of considerable height*, should be adopted more generally, *as has been done*, with great advantage at Liverpool. We italicise the words that there may be no mistaking them. Will this recommendation ever meet with attention? We shall be both surprised and gratified if it does so far as to be carried out.

NAVIGATION AND LIGHTS ON THE COAST OF BURMAH.—AMHERST POINT AND JUNGLE FIRES.

Maulmain, March 5th, 1867.

Sir,—Some twenty years since, or more, you were so good as to publish some Notes and Remarks on the Coasts of Burmah, which I have reason to believe have been found useful by navigators. But as nobody thinks of looking into an "old Magazine" for such information, and as the light houses lately erected on these coasts have modified to

some extent the observations then made, you may think it worth while to revert to the subject again, just by way of a "refresher," although what is said now may have, in substance, been said before. Disclaiming the sort of mock modesty that begins by apologising for inability to do justice to the subject, and so forth, my claim to be heard is based on a life-long acquaintance with the Bay of Bengal, its coasts and rivers, winds and currents, on which subject I have been no stranger to the *Editor of the Nautical Magazine!* and I know no part of the world where a careful study of these essentials of navigation will better repay the mariner, and through him the ship owner. What follows has special reference to Maulmain. As for Rangoon, the directions may now be summed up in these few words:—"Run up to the Light Ship, and take a pilot or anchor." There is absolutely nothing in the way to prevent it, and both the tides and the swell are moderate, very moderate as compared with Maulmain.

The system of Lights on the coasts of Burmah is, or will be, when that on the "Krishna Shoal" (Barrague Point of old) is completed, as perfect as any part of the world, England not excepted. There are no dangers but what may be avoided by ordinary skill and prudence, *save one*, and that is on the coast, between Rangoon and Maulmain which no human contrivance can ever obviate. The *tides* here run with a velocity exceeding belief by a stranger, but never to be forgotten by those who have, like the writer, been once caught in them.

Premising that the Light on Double Island, about ten miles to the South of Amherst Point can be seen twenty miles off, a ship approaching Maulmain from the southward, may make in for the land, which is all mountainous, and to be seen afar off, anywhere to the northward of the Moscas Islands. Then coast along at about ten miles distance, or nearer at pleasure, except in passing the sands that lie about five miles off Hinzai Inlet. At this distance the Light House on Double Island will be readily made out, and having made it, if too late in the afternoon to get a pilot on board and *enter the river*, it will be best *not* to anchor; but keep under way for the night, with the Light on any bearing from N.E. to S.E.; or get into Calagoock Harbour, for the tides run so strong even at Double Island, that they would test the best "ground tackle," there will be no difficulty in keeping within these bearings during the night, although the flood tide at some seasons runs much stronger than the ebb. At daylight, or earlier according to circumstances, close in to within five miles of the land, and proceed to the northward where the pilots will pick you up; if not, then, if it be flood tide you *must* anchor, say about five miles off, with the flag-staff on the Point bearing to the northward of E.N.E. North East is a safe and convenient bearing to anchor on, but during the S.W. monsoon, or from March to October, it is very rough riding at best. Since the pilots have been placed on the competitive system they are always out in search of ships, and the delays incurred previously in waiting for the pilot in turn for sometimes two or three days, do not occur now.

A ship coming to Maulmain from the Westward by the Prepario

Channel, has no business to go near the coast of Pegu at all, but should keep well off, say twenty or thirty miles, until past Barague Point, and then steer for Double Island; or, to make sure of not being set to the northward, steer for Calagook, until the Light House is seen. The soundings are not a sufficient guide for a stranger hereabouts. But should she get to the northward, in say ten fathoms, or if coming from Rangoon, the utmost vigilance will be required to prevent being set on the sands lying off this dangerous part of the coast, as the flood tide sets directly on the sands, and with a velocity, especially on the eastern half of the distance, that anchoring is the last, and almost a hopeless, resource. I speak from experience in this matter, having once rode out an April flood tide there with three anchors down, and although the ship was light, the tide rushed in at the hawse holes and inundated the deck; in fact she threatened to go down by the head; she was driving all the time and had she touched the ground would of course have been lost, with probably all hands. I recovered two of the anchors, and was glad to leave the other behind and escape on the ebb tide. The remembrance of those few terrible hours of that flood tide will last as long as I live, and I mention the circumstance because even one fact carries more weight with most people than generalities do.

By bearing in mind what has been above stated, the navigator will find the coasts of Burmah safe to approach by the Admiralty Chart, which by the way had formerly, by some mistake, placed a Light on Amherst Point, where there certainly used to be a lantern, but *no light*; in fact, a "Will-o-the-wisp," now abolished. But there is still a Blue Light, burnt hourly on the Point, which is useful for the coasting steamers. But sailing vessels should take no account of it, at least should not *seek* for it, for by doing so they may get into danger. It should also be abolished, for all the use it can be of to steamers is over, and is balanced by the danger it holds out to sailing ships that may be induced to seek for it knowing that it is there. Another thing peculiar to this coast is Jungle Fires, prevalent during the dry season, which were previously perplexing to strangers. But they cannot well be mistaken for a Coast Light, although they were often mistaken for the old lantern on the Point, even by coasters and steamers, and several of them came to grief thereby.

Our river is a very bad one, and it is to be regretted that little has been done for bettering it, although it might be considerably improved at little cost, but that too, will doubtless be done sometime hereafter.

J. H. MILLER.

[It is with much satisfaction that we recognize in the letter of Capt. J. H. Miller, the clear and seamanlike directions of our old correspondent, by whose valuable information, found in many of our earlier pages, his brother seamen have full often profited. It reaches to some twenty-five years ago. In our volume 1842, stands some highly important information at the time on his adopted port, that of Maulmain, and it is with pleasure we find him reverting to his subject and shewing those changes that mark its present condition. We assure

Capt. Miller that his remarks are no less useful now than they were at the period to which we have referred. We are glad to find he has not forgotten his old adopted work, in which we can assure him his name will be handed down to posterity, as one of those officers of his profession who have done it essential service by promoting the cause of navigation, and holding out to his brother seamen excellent nautical advice, and improving their charts, by doing which, he benefits his country, saves the lives of seamen, and does honour to his memory.—*Ed. N.M.*]

FUEL FOR STEAM SHIPS.

[THE economizing of fuel for the use of steamers on long voyages is yet a question of much importance, and all progress towards its solution a subject of much interest. We find the following remarks on the employment of petroleum for this purpose in a Canadian paper, where it is very well known large stores of it are to be found, and which we consider are worthy of preserving for future reference in our pages.]

SUCCESSFUL EXPERIMENTS ON PETROLEUM AS FUEL.

DURING the last twenty years, as steamers have constantly increased in number, and have been steadily taking the place of sailing vessels on coastwise and other short voyages, and to a great extent for the transportation of passengers and freight to and from Europe, most earnest efforts have been made by engineers and other scientific men to discover the best method of economizing fuel. For this purpose, propellers are superseding side-wheel steamers, and the merits of all kinds of boilers have been tested and discussed.

To the present Chief of the Bureau of Steam Engineering in the United States Navy, B. F. Isherwood, the commercial world owes much for very valuable information on this point. Quick of apprehension, clear of thought, prompt to act, he has kept a watchful eye upon all matters affecting steam navigation, and has demonstrated by experiment the value or worthlessness of hundreds of claims. That he has made some mistakes, is true, but that he has developed more facts in engineering than almost any other man now living, is also true.

But all the researches of talent and experiment have failed to so reduce the amount of fuel required as to enable steamers to make long voyages without frequently coaling, or to make them at all to distant parts of the globe, without first transporting coal by sailing vessels, to various points along the route, where the steamer can call and take it; and thus all commerce around Cape Horn, and the Cape of Good Hope, is practically left to slow sailing vessels. The difficulty is not so much in the expense of coal, although its increasing scarcity and

cost cause grave apprehension, as in the great bulk and tonnage occupied. In fact, nearly one-half of the carrying capacity of European steamers, and more than that on longer voyages, is taken up by the fuel transported.

The high price of all vegetable and animal oils, of course, prevented any efforts to introduce them into use. But soon after the discovery of large amounts of petroleum in this and other countries, attention was called to its great calorific power, and constant efforts have been made to utilize it as a heat generator in steam boilers. It is generally agreed that the heating power of petroleum is about four times as great as that of anthracite coal, of equal weight and bulk, if both could be wholly burned, and all the heat utilized. But experiments have shown that the coal, after deducting ashes, cinder, dust and the gasses lost in smoke, only about one-half of the heat therein can be practically used; so that if any expedient can be devised whereby all the heating power of petroleum could be saved, a gain of some eight or ten to one would be effected.

With this view, experiments are now being made in the dockyards of England and France, also in the Navy Yard at New York, and by private individuals in various parts of this country. We have watched these experiments with great interest, but have refrained from expressing any opinion because in all the reports of the trials, both in Europe and here, the results have been unsatisfactory. The fires have been imperfect, have smoked and been dangerous and difficult to manage.

The difficulty which has so long troubled merchants and engineers, seems now in a fair way to be solved, and it has been demonstrated almost to a certainty, that another great discovery has been made, which will be of vast importance to the world, and create an entire revolution in the method of heating marine and locomotive boilers—a discovery which amazed us by its simplicity of action, and the great advantages it possesses over all the methods now in use for safety, economy, volume of heat, and tractability.

Last fall, Col. Henry R. Foote, of Tennessee, who commanded a Union regiment in the late war, patented an invention for burning petroleum in steam boilers, upon which he has been at work some two years, and on which he has spent many thousand dollars. Col. Foote associated with him Mr. J. H. Winsor, of Pennsylvania, and they came to Boston, and set up a locomotive boiler in a little building on Chardon street, and for several months ran an engine with this new fire. During this time they made the acquaintance of Stillman B. Allen, Esq., of this city, who is well known as having energy and determination, which rarely fail to accomplish whatever he undertakes, and he became a joint owner with them in the invention, and has entire charge of all the business arrangements of the concern. He called the attention of the Navy Department to the subject, and forwarded certificates from Alban C. Stimers, of New York, a well-known engineer of high standing; of George B. N. Tower, late chief engineer, U.S.N., and Chief of Marine Engineering Staff at Charleston, and of unquestioned ability; of Captain Anderson, of the Cunard steamer

Africa, and of Governor Andrew, Professor Rogers, and several engineers who had examined the fire on Chardon Street.

Mr. Isherwood at once ordered a board of three chief engineers to examine the apparatus. They did so, and reported most favourably, and recommended that it be at once placed on board some steamer in the Navy. An order was then issued to fit up the iron steamer Palos, a beautiful little gunboat of the fourth class, at the Navy Yard here, for full and complete experiments, and Alexander Henderson, Chief Engineer of this Navy Yard, an energetic, accomplished, and skilful officer, was appointed President of a Board for experiment, consisting of himself and Chief Engineers Moore, Baker, and Kellogg, and eight Assistant Engineers.

Their experiments are now in progress. Having heard very wonderful accounts of the success of several preliminary trials there, we made a visit to the yard a day or two since, went on board the Palos, and made a personal examination of the whole apparatus and all the machinery of the boat, which was in motion with a full head of steam.

The apparatus is simple and inexpensive, consisting of a small iron box or retort located in the place of the grate bars, and having burners all around it. Its bottom is kept hot by burners beneath. The oil is carried into it by a small iron pipe and vaporizes as soon as it enters. Steam is then introduced through a coil of iron pipe filled with filings and located over the burners, where it is intensely heated and decomposed, and its gases enter the retort, into which air is at the same time forced, and the whole forms a gas which escapes from some nine hundred burners, where it burns with a clear intense blue flame, completely filling the furnace and extending into or through the flues. The heat is very great. It emits no smoke, can be increased or diminished in a moment, or be entirely extinguished by turning a stop-cock.

The apparatus is very simple, and any part of it, if broken, can be repaired or made anew by any mechanic. No alteration of boilers is required. It will burn wherever coal will, and the fire can be run by any man of ordinary intelligence after an hour's instruction.

It dispenses with all coal heavers and requires but one man to every two or three fires, to keep them in perfect order. It is clean and convenient, and saves the time and trouble of taking in coal and disposing of ashes, and, there being no sulphur in the oil, as there always is in coal, the boilers and flues will be more durable, notwithstanding the greater intensity of the fire. But the great value of this invention, in steamers is the gain in space and tonnage. The amount of fuel required is only about one-seventh of the weight and bulk required of anthracite coal, and the inventor is satisfied that after perfecting his apparatus it will take less than one-tenth, leaving all the remainder for freight or passage room. If this fire succeeds, as we believe it must, it will enable ships to steam from sixty to one hundred days, and to visit ports in all parts of the world from which they are now excluded, while the direct gain will be immense. For instance, the Cunard

steamers take 1,200 tons of coal on every passage and burn about 1,000. Now, two hundred tons of petroleum, costing about the same as the coal, will do the work better, saving one thousand tons freight. This at eighteen dollars a ton would amount to thirty-six thousand dollars on each trip, and in the eight trips made in a year to nearly three hundred thousand dollars, to which must be added the extra expense of wages and food, of coalheavers, wear of machinery, and journals by coal dust, wharf room for coal, etc. The enormous saving which this method makes in freighting vessels is a consideration of first importance, and must cause its immediate introduction into nearly all steamers as soon as its utility becomes generally known. It is equally applicable to locomotives, an important desideratum in localities where wood and coal are scarce, as for illustration, upon the new Pacific Railroad, which, when completed, would require fuel trains in constant operation to keep wood and coal stations supplied; while, with this invention, the tender of a locomotive can carry a sufficient supply for three to five hundred miles.

There is another advantage of which we cannot now speak at length. On board the *Palos*, during the trials with screened anthracite, the highest number of revolutions they were able to give the propeller, with all the coal they could burn, was less than forty, while on a preliminary trial with Col. Foote's apparatus, she easily gave over fifty revolutions for several hours, and fully held her steam, thus showing that, with this fire, a boat can run from two to four knots faster than she can with wood or coal, and as the heat is equally distributed along the crown sheet and through the flues, but little if any "foaming" is caused. This must shorten the distance to Europe about two days, and a steamer's time from St. Louis or Cincinnati, to New Orleans and back, from three to six days, and save all wooding up along the route. We predict that the first line on the Mississippi which adopts this fire, will do the largest business, and as oil can float down Oil Creek, the Allegany, and the Ohio, it will be cheap in the West, and soon all steamers there must use it.

Our first question on the *Palos* was, "Is it safe?" But after examining the apparatus, we were fully convinced that, when properly managed, there is no more danger than from coal. The oil is to be carried in double iron tanks, the outer space of an inch or so filled with water, and stowed in separate iron compartments in remote parts of the ship, and having small pipes carrying overboard any gasses which may rise, while the oil itself is carried to the fires by a half-inch pipe. It seems almost impossible that an accident should occur except through gross carelessness. Mr. Stimers, who, in a written report to Mr. Allen, says, "Colonel Foote's process is the most philosophically correct one for burning any fuel I have ever known to be tried in a steam boiler," adds "I can see no difficulty in carrying petroleum safely in steamers. The only thing to be done is to stow it properly. I cannot see that more care need be employed for petroleum than for coal, but it must be of a different kind."

The working of this invention has been examined by many eminent

and practical men who have endorsed it in the strongest manner: indeed, the whole operation is so remarkably simple and free from complication, as to require but little explanation; and the spectacle which presents itself, of the great furnaces of a steam vessel in full blast, and driving the engines at their full speed, with only two men sitting quietly on camp-stools in a clean fire-room, in comparative leisure, and increasing or diminishing heat by simply turning a faucet, with no coal, cinders, ashes, or rubbish about them is such an unusual one to those who have been accustomed to the dust, noise, and confusion of coal passers and firemen, the continual opening of furnace doors, and consequent deadening of fires, the exhaustive labour and number of men employed, that one sees at once, in this invention, an enormous stride forward in steam navigation.

We understand that, after the wharf trials are concluded, a trial at sea is expected to be made, for the purpose of subjecting the invention to the severest test possible. We shall watch the whole experiment with great interest, and will advise our readers of whatever we learn, either for or against it. Should any of them desire to learn more of the invention than the space of a newspaper article can give, we presume Mr. Allen will promptly answer all inquiries. Our thanks are due to him and to Col. Foote, and the naval officers and engineers on board the *Palos*, for courtesies, enabling us to witness all the details of working the machinery, and of the invention, on that ship.—*Boston Commercial Bulletin*.

REPORT OF THE COMMITTEE OF THE SOCIETY FOR IMPROVING THE CONDITION OF MERCHANT SEAMEN, ETC.*

OF all our institutions, that of the mercantile service afloat of this country, we will even venture to say, requires, more than any other, the most watchful care:—because its well-being, in all its details, is essential to the safety of our land. No institution, the produce of men's heads and hands is free from evil; and that of our mercantile service has, *happily* we may say (for the correction of that evil must thereby follow) been so enormous and so glaring, that it has given rise to a self-constituted honorary committee, at the head of which is a British Admiral, that we trust will become a powerful means to eradicate it. This evil is really a many-headed monster, sapping the very foundations of our strength. We see in it the fangs of the serpent at every turn. The vices of avarice, injustice, tyranny, deception, might be shewn up in abundance from the mercantile service of this country, while the insurance office encourages those

* London: Harrison and Sons, 89, Pall Mall, 1867.

who prey on the lives of seamen and the loss of the crazy old craft which year after year go to their graves in the ocean. It is well, we repeat, that all this huge list of ill-doing should have gained its present condition to have produced a committee bent, and we hope effectually, on crushing its enormities. That they will entirely succeed we do not believe, for what law is there established, by Act of Parliament itself, that will not be broken as soon as made. But that much of it will be removed we think and hope to be more than probable. How often have we contributed to show up its deformities, and there is one in regard of the seaman's birthplace to which we find no attention has been given, that we again repeat it from our number for February last. It stands thus recorded on an authority in which we have entire confidence. After remarking that Bethnal Green has its Sewerage Commissioners and other Boards to look after its general welfare, but the forecastles of merchant ships are beneath the notice of the Board of Trade, he observes:—

“Not long since, a surgeon from the West Indies informed me that he was called to attend several cases of fever on board a steamer trading there. He found the patients lying in a close lower fore-castle, so badly lighted that he was compelled to examine them by lamplight, although a tropical sun was blazing on deck over head. As there was overpowering effluvia of night soil, he enquired the reason, and was informed that the water closets were placed in the after part of the fore-castle. When reporting the condition of the sick to the commander, he made the following remark: ‘Were I to take the healthiest man in the town, and permit him to sleep for one night in this ship's fore-castle, he would assuredly rise with fever,—medical skill is useless under such circumstances,’ and he added, ‘This is no uncommon case; and when it is known that the habits of seamen are not over cleanly, we need not be surprised at the result.’” May we wonder whether anything will ever be done to remove this monster evil arising from all the sources to which we have alluded. Yes, we may wonder and be not surprised at its endurance and continuance! for even the report before us does not allude to the state of things pointed out. But we shall have to refer to this report hereafter.

WHILE on this subject of mercantile shipping, we turn to a Parliamentary paper just published, being “An Abstract of the Returns made to the Board of Trade during the year 1865, of the number of wrecks and casualties which occurred on the shores of the Channel Islands, on the shores of Her Majesty's possessions abroad, and to British ships at sea; and of casualties reported by Her Majesty's consuls during the same period, with a chart.” If there really be satisfaction in viewing a melancholy picture, here it is. The enquirer into statistics has here, to his assistance, the number of wrecks specified which may be attributed to all parts of the world frequented by British shipping.—British, did we say? we should have said

“supposed” (a more fitting name we may find hereafter), for how many may be attributed to that wretched scheme we have introduced into our ships of allowing two-thirds of the crew to be foreigners? How many, we say, may be attributed to that imperfect intercourse which must occasionally happen between English officers and foreigners, the former ordering, and neither understanding each other's language. How many are lost from this condition to which English ships have been reduced for the purpose of swelling the trade returns and making a *prodigious show*? Our mercantile commanders would perhaps be the best to form a good opinion of that number, and we ourselves may be able hereafter to form an opinion of the effects of that measure by the continually increasing scarcity of British seamen.

Satisfactory, however, as far as it goes, as this return may be, it is yet sadly deficient: some coasts give returns for even ten years, while others do so for only one year, indeed the register is acknowledged should “be taken only for what it is worth.” However, the beginning is made, and although much of the returns include foreign ships as well as English, there may be a kind of consolation that however large the number of the latter may be, two-thirds even of them are not English, although sailing under the British flag. An English ship may contain English cargo store, but two-thirds of her crew are foreign, and it may also be some consolation that of the 1258 lives lost as stated in this return, a few more perhaps than four hundred were really English seamen. However, the return, although most imperfect, has its uses, and we shall on many occasions hereafter have to refer to it.

RULES OF THE ROAD IN CLOSE CHANNELS.

THERE seems to be a somewhat too general impression that, since the repeal of the rule laid down in the 298th sec. of the Merchant Shipping Act, it is not incumbent on steamers, or other vessels navigating narrow channels, to keep the starboard side. To those who are still under this impression we commend the perusal of a judgement delivered in the Court of Admiralty, in a cause of collision, and reported in *Mitchell's Maritime Register* of last week. An action and cross action were brought by the screw steamer *St. Bede* against the steamer *Nile*, and by the *Nile* against the *St. Bede*, for damages alleged to have been sustained by reason of a collision in Limehouse Reach in January last. The case for the *St. Bede* was that, when the casualty occurred, she was proceeding up the Reach near the Middlesex shore, when the *Nile* was observed coming down about a point on her starboard bow, and distant about a quarter of a mile; that the *St. Bede* immediately ported, and as the *Nile* approached, the engines were stopped and reversed; but, nevertheless, the *Nile* came on, driving her port bow against the stem of the *St. Bede*, and doing considerable damage. The *Nile* pleaded

that, when the *St. Bede* was first seen, she was bearing a point and a half on the *Nile's* port bow, and was distant about half a mile; that the *Nile* at once ported, and kept her port helm, whereas the *St. Bede*, instead of porting, starboarded, and, notwithstanding that the *Nile* put her helm hard a-port, and stopped and reversed, she could not avert the collision that ensued, and which resulted in damage so serious, that the *Nile* was unable to pursue her voyage, and was compelled to return to London for repairs. The conflict of testimony in this case was very great, so much so that the Court found it difficult to put the case before the Elder Brethren in an intelligible shape. The learned Judge, however, arrived at the conclusion that there was truth in the statement that the *St. Bede*, after the vessels sighted each other, was for some time, at all events, under a starboard helm, and that to that circumstance was mainly, if not altogether, to be attributed the collision which ensued. But, inasmuch as it appeared that there was some reason to believe that the *St. Bede* starboarded in order to avoid a galiot that happened to be in the stream, the fact of starboarding would not have decided the case against the *St. Bede* but that the starboard helm appeared to have been continued so long as to take the *St. Bede* not only off the north shore, but south of the mid-line, where the collision unquestionably occurred. To this point his Lordship directed especial attention, and it proved to be the turning point in the whole case. "I think [said his Lordship] the evidence for the *Nile* proves, what I consider to be an important point for her, namely, that the collision did take place south of mid-river. If the collision did take place south of mid-river, then the *St. Bede*, from having been on the northern shore prosecuting her course up the river, must have got to the south by starboarding her helm." The Court found the *St. Bede* solely to blame for the collision on this ground, his Lordship distinctly stating that the leading fact in the case upon which the judgement rested was—"that the collision took place to the south of the mid-line, and there was no satisfactory explanation how the *St. Bede* ever got there, except improperly."

Here, then, we have a distinct announcement that, in the opinion of the Court of Admiralty, a vessel ascending the Thames is bound to keep to the north shore; and if she is passed to the southward of mid-river, and a collision occurs, the fact of her being in the wrong position makes her solely to blame, and puts her out of Court. In other words, the Court of Admiralty holds that it is the duty of steam-vessels, at least, navigating the Thames up and down, to keep to the starboard side, and that, if this duty be neglected, the vessel by whom it is disregarded becomes solely responsible in the event of a collision. It is well that shipmasters and other persons in charge of steamers should know this. The rules and bye-laws of the Thames Conservancy are not so explicit as they might be on the point. By a sort of mutual consent the generality of vessels going down the river keep to the south side, and coming up to the north, but there does not seem to be any distinct rule compelling them to do so. The 36th rule of the Conservancy directs that "every vessel shall, at all times, while passing

on the river, be navigated in a careful and proper manner, as well with regard to the safety of such vessel, as of other vessels passing and re-passing on the river." This direction, it will be seen, is too general, and something more explicit seems to be required in order to keep vessels in their proper position, and prevent them incurring the risk which has proved so unfortunate in the case of *St. Bede*. The effect of the judgement to which we have just called attention will be, no doubt, to make those who see it, or our remarks upon it, careful to keep their own side of the stream; but where it does not happen to meet the eye of a shipmaster or pilot, vessels may continue to be navigated under circumstances which may at any moment subject their owners to serious consequences, in the event of a collision. Seeing that the Court of Admiralty has taken so decided a view with respect to vessels keeping the starboard side, we cannot but think that it would be well for the Conservators to introduce a specific regulation on the subject, which would set the matter once for all at rest, and not leave those in charge of vessels to find out what their duty is at the close of a cause of collision in the Court of Admiralty.—*Mitchell's Maritime Register*.

SAN FRANCISCO.

"OUR readers may have observed in the late San Francisco papers, an account of the destruction of Rincon Rock, in San Francisco harbour, by means of powder explosions. The powder is simply laid on the rock in a tin canister, and exploded by means of a wire, thus blowing the rock into atoms. The experiments have been very successful, comparatively inexpensive, and have resulted in removing a dangerous obstruction to navigation. There are several places in our harbour where rocks exist, which can, no doubt, be destroyed by this process. The gentleman who has been engaged in removing Rincon Rock has offered to visit Honolulu and remove any harbour obstructions there may be here. The experiment is certainly worth a trial. Just off the point of the Esplanade is a troublesome rock, which should be removed, as it prevents large vessels from coming up to the wharf. Another lies at the point where the new steamboat wharf is to be extended to, which may possibly be blown up, and allow the extension of the pier in a straight line five hundred or six hundred feet further on. As our harbour is small, every fathom of space that can be rendered serviceable to shipping is so much gained, and all experiments with that end in view must meet public approbation."—*Sandwich Islands Paper*.

The process mentioned in the foregoing extract seems to be peculiar to the American engineers, and certainly beneath the attention of ours. A ridiculous attempt was made by us to remove a rock at the entrance of Plymouth Sound, about fifteen years ago, by blowing up an old

cylinder of powder, which produced no effect whatever on it. But the way that we go to work, and the way the Americans did at New York, as recorded in these pages now many years ago, are two distinct operations. Commend us to our American friends on occasions where patience and perseverance are required, rather than to the off-hand work of our clever engineers.

HONOLULU HARBOUR—*Sandwich Islands.*

THE prospect of the harbour of Honolulu being a point of call between Panama and China, for a new line of American steamers, has induced the authorities there to turn their attention towards preparing a landing pier with an appropriate depth of water, which seems likely to be effected by the following extract from a Sandwich Islands Paper.

“We understand that the Hawaiian Government will act with becoming liberality towards the new enterprise, and will immediately set to work to extend the wharf on the Esplanade so that a new pier may be in readiness by January next, or as early thereafter as is possible. It is now proposed to extend the present steamboat wharf south on a line with its present front, say one hundred and fifty feet, making a wharf of two hundred and seventy feet for the steamers to lie at. The China steamers are three hundred and forty feet in length, but, as they remain in port only a day or so on each stoppage, this wharf will amply accommodate them. The depth of water alongside varies from twenty to twenty-four feet, but it will be dredged to a uniform depth of twenty-four feet. As this wharf lies at the head of the channel, the steamer will reach it without the necessity of turning around, and, when ready to leave, has simply to cast off the bow lines and head out to sea.

“The bar at low water has twenty-one feet, and at full tide twenty-three to twenty-four feet. It is stated that the steamers will draw, when fully loaded, only twenty-one feet. Excepting in the event of southerly storms, which seldom occur, there can be no difficulty in the ships entering and leaving in any ordinary half-tides. The bar and channel are very smooth in all weather, except during southerly storms, when the swell is heavy, as is usual at all entrances when exposed to the wind. It is understood that efforts will be made to deepen the channel as soon as arrangements can be perfected.”

NEW BOOKS.

MADAGASCAR REVISITED: *describing the events of a new reign, and the Revolution which followed, etc., etc.* By Rev. W. Ellis, author of *Polynesian Researches, etc., with illustrations.**

Considering the very important progress, which this work describes, in the particulars of missionary labours, the patronage of Her Majesty is most worthily extended to it. And we hail with satisfaction the very important fact, that, such labour by its own fruits mainly, has even progressed through a revolution in Madagascar; and is keeping its onward course under the protection of a new government, which has succeeded that by which it was even permitted and encouraged. It is no less remarkable too, that the revolution, which Mr. Ellis describes, arose from habits in the king that the Christian missionary did not fail to condemn, and that the real benefits of Gospel teaching were so evident, that the heads of the people, in drawing up the agreement which was to regulate the government of the island on the revolution being completed, declared, that "Her Majesty the Queen of Madagascar, from her friendship for Her Britannic Majesty, promises to grant full religious liberty to all her subjects." This great boon was originally granted by Radama the Second, and which was the occasion of Mr. Ellis revisiting the island. The present queen, his successor, has well followed it up; and it is a high satisfaction to the Christian reader to follow the narrative of Mr. Ellis in reference to the great progress of Christianity in that important island.

We shall find some opportunities hereafter of returning to this interesting work, and shall have something to say as to the sudden occurrence of the revolution:—one, which we consider that proves there is much good sense after all among the leading people and nobles of the island, considering the few steps by which they are removed from a state of barbarism. A bad law, which the king desired to carry out, led to much disapproval, and even to a remonstrance on the part of the higher classes, who fortunately had with them the commander-in-chief of the army. Thus the revolution was resolved on before the king had been a few months crowned; a determination encouraged by his unfortunate weakness for strong liquors, although he was always an enemy to bloodshed, and the ordeal of the tangena.

How that revolution was effected, Mr. Ellis here informs us. Still he had had the great satisfaction of seeing the spread of the Gospel by means even of native preachers, and an unbroken repetition of the observance of Sunday, in a most satisfactory way, at various places in the neighbourhood of the capital Antananarino. But on one of these Sundays, he says, "The sun rose, the next day, upon a scene very different from those which Sunday mornings in Antananarino had for some time presented. A few women met together early in one or two

* London: JOHN MURRAY, Albemarle Street, 1867.

chapels for prayer; but the men were in the city. To have been absent would have excited suspicion, and rendered such absence perilous.

“ A number of the menamaso (king’s advisers) had sought shelter with the king; and the nobles and heads of the people sent to demand that these should be delivered up and put to death. The king’s messengers with the royal banner in charge of four men soon afterwards came to the residence of the prime minister, where the leaders of the movement were assembled, with the king’s answer refusing to give them up. Another demand was then sent to the king, backed by the augmentation of the troops in the neighbourhood of the palace, which was now surrounded, and every entrance guarded by the troops and their adherents.

“ We did not deem it prudent to go out, but met together in the house, to call upon God in prayer. More than once the royal banner was seen by us, being carried towards the enclosed courtyard of the minister which overlooked the plain, now filled with armed men; and this could have presented no hopeful spectacle to the messengers of the king. Parties of officers and men were repeatedly seen to leave the place and proceed towards the palace. The keepers of the idols, also, went and offered to bring out the idols before the people, but the minister told them to keep the idols at home, that they did not want them. Messages were brought to us from time to time throughout the day. At length, after repeated demands for the menamaso on the one part, and refusal to deliver them up on the other, and threats of forcibly entering the palace gates, and preparations for assault and resistance, we heard that the king had agreed to deliver up the menamaso, on condition that their lives should be spared; and that the nobles required that they should be deprived of all honours and emoluments and be banished in chains for life.

“ This was a compromise with which it did not seem likely either party would be satisfied; but there was not much cause for fear of conflict now. A little patience appeared to be all that the nobles required to secure their object. The king and his companions though holding the palace, were in reality prisoners. There were not more than five hundred of the king’s guard, and their resistance to the thousands of their comrades was very doubtful. There was but little ammunition in the palace, while the minister and his brother the commander of the forces, had charge of the magazines. The disposition of the citizens, though some were loyal to the king, was not to be relied upon, under the existing state of feeling to support any movement which Radama might now attempt to resist the force arrayed against him. * * * * *

“ We heard during Monday forenoon, that after every effort to save his friends, the king had agreed to their degradation, the deprivation of all their property, and banishment in chains for life, with this only condition in their favour, that their lives should be spared. It was also added that they were to be delivered up that day. The number of slaves passing across the plain, with rafters, posts, timbers, floors,

doors, windows of houses, bedsteads, tables, and other articles of furniture, were evidences of the demolition and plunder of their dwellings. Soon after noon we heard that the menamaso, who had been surrendered to the nobles by the king, were about to be led to Zoma, the large market place to the north, to have the irons fixed on their persons, and in a short time a few soldiers preceding them, entered the broad path on the western side of Andohalo.

“The prisoners who were nearly stripped of their clothing, walked two abreast dejected and silent between the soldiers. Their eyes were bent on the ground, and they scarcely appeared to notice any object, or the crowds of spectators by the sides of the road, along which they passed. The day had become overcast with clouds, and it rained at the time. The water running off their bare heads, and unclothed persons, added to the sadness of the spectacle. * * *

“Instead of being put in irons, these men all fell under the spear of the executioner that same evening. * * *

“Thirty-one of the menamaso, and officers of Radama, were sentenced to die, ten were killed on the first day, fifteen on the day they were given up by the king, two were afterwards captured in the South, two subsequently cast themselves on the sovereign's clemency, and four escaped. * * *

“The evil advisers of the king, the authors of all the bad counsel which had led him astray; and as it was said, were fast conducting the country to ruin, had been removed, never to return. The great body of the people thought that blood enough had been shed, and that no more lives would be sacrificed; and concluding, that, as the purpose of removing the evil advisers of the king was now accomplished, they supposed that the business to which the king and the nobles would now apply themselves, would be to arrange such principles, and employ such agency of government, as should be more satisfactory to the several bodies of the people, and more beneficial to the country at large.”

However reasonable all this might have been, we speedily find matters totally different. We are told that—“Some short time after sunset, on the same eventful day, two high officers from amongst the nobles went to the king within the precincts of the palace and desired an interview. His majesty sent word, that, it was too late; and that he would see them in the morning. About midnight they repeated their visit, and their request, when the king sent word that he was in bed, and could not see them until the morning. Soon after cock crow on the morning of the 12th May, 1863, these two officers went, as it was reported, with a number of soldiers, and four or five other men, to the house in which the king had passed the night, when one of them, a carpenter, forced an entrance, and they then proceeded to take the king.

“The queen, who was in the room, endeavoured to protect Radama by placing herself between him and the intruders, earnestly imploring them to depose him if they wished to do so, but not to take his life. All parties who were at all likely to know, whether Radama's enemies

or friends, and how much soever in other respects their accounts might differ, concurred in testifying to the great and unremitting endeavours of the queen to protect the person and save the life of the king, until at length she was forcibly removed. When they then proceeded to seize the king, he is reported to have said, 'Do not injure me, my person is sacred. God will call you to account.' To which those who were about to take him replied, 'We do not know that; but we know that you have injured the kingdom.' I also heard, that, when they seized him, before the mantle was cast over his head, and the girdle passed around his neck, he exclaimed, 'I have never shed blood.' No answer was returned, and the herculean arms purposely engaged for the deed tightened the twisted band, which stifled for ever all utterance; and after a few struggles, a lifeless corpse was all that remained of the humane young ruler, whose accession to the throne had been hailed as the light of morning by the different races of his own country, —to whom the sovereigns of England and France had despatched letters of congratulation and presents, and had sent their representatives to his recent coronation. So perished within the precincts of his own palace, and chiefly by those who had been instrumental in placing him on the throne, the Second Radama, king of Madagascar. * * *

"The body of the king remained in the house in which he had been put to death until midnight, when, about eleven o'clock, it was carried forth in darkness and silence along that same broad road, over which attended by representatives of the sovereigns of civilized Europe, and surrounded by gazing and exultant thousands, under the clear and brilliant light of noon, he had passed to receive the homage and fealty of the nation, on assuming the crown of Madagascar. Now the melancholy procession pursued its way silently, and as it were clandestinely, to the royal village of Ilafy, about six miles to the north of the Capital, where the body was interred within the court of the Government House, and a small thatched building was erected over his tomb."

Thus terminated the reign of Radama the Second, which had been marked by a happy freedom from the numerous dreadful executions of a blood-thirsty queen, a general permission for the exercise of religion, in which our missionaries had wonderfully prospered. A proclamation immediately followed, nominating Rasoharina should be his successor, as queen, provided that she subscribed to certain articles of which the first was, "The Sovereign shall not drink spirituous liquors,"—a habit which had done its part in sealing the fate of her predecessor. Mr. Ellis's narrative embraces so much important information concerning the progress of Madagascar that it cannot fail in attracting numerous readers.

The reader of the "Nautical" will no doubt remember some interesting particulars we gave of the journey from the coast to the Capital in our volumes of 1862 and 1863, with some remarks on the characters of the leading men of the Government as well as the nature of the country, on the occasion of a visit to be present at the coronation of the late king Radama the Second.

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 81, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 290.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen Mls	[Remarks, &c. Bearings Magnetic.]
21. Ft. Lonsdale	Australia	S. Coast	F.	...	10	Est. 25th Feb. 1867, appears <i>green</i> seen between N. b. W. $\frac{1}{2}$ W. and N.W. $\frac{1}{2}$ W. and <i>red</i> between N. W $\frac{1}{2}$ W. and W. b. S. See note (a.)
22. Spessia	Harb. Italy	West Coast	F.	26	9	Est. 20th April, 1867, Extremity of pier now constructing.
Castello de Plana	G. Valencia	39° 58' 7 N. 0° 0' 3 E.	F.	26	9	Est. 10th February, 1867.
Berdiansk	Sea of Azov	Replaced by two lights on S.E. & N.W. Extreme of Breakwater	F.	17	...	Est. 1st October, 1866, <i>Red</i> .
			F.	17	...	Ditto " " <i>Green</i> .
23. Buoys on Irish Coast	...	...	...	...	...	See note (b.)
24. Coast of Sweden	...	...	...	...	...	Ditto (c.)
25. Pater Noster Rocks	Swedish Coast	57° 53' 7 N. 11° 28' 5 E.	R.	...	...	To be Est. during present year. Also a flash alternating with an interval of darkness—length of it not stated.
Off Stockholm Skaren	Kattegat Entrance	59° 35' N. 19° 45' E.	...	...	...	Ditto From the Light vessel the Svenskar rock will bear W. N. W.
Orskar Understen Svartklubb Soderarm Gottland	Entrance to Gulf of Bothnia	...	...	...	...	The Lighthouses will be painted with two horizontal <i>red</i> belts.
	...	...	...	...	...	See note (d.)
26. Owers Buoy Spithead	Boulder Wreck buoy	...	...	...	...	See note (e.) See note (f.)
27. Georgetown Timballier Bay Light	...	...	...	...	...	To be Est. 1st May, 1867. To be Discontinued, Light apparatus, &c., being destroyed by a storm.
28. Port Natal	S. Africa	29° 52' 8 S. 31° 3' 6 E.	R.	...	...	See former notice. In lieu of former notice, No. 60, p. 6's, last vol: See note (g.)

F. Fixed. Fl. Fixed and Flashing. R. Revolving. I. Intermitting. Est. Established.

(a.) By referring to the chart it will be seen that the N.W. $\frac{1}{2}$ W. line passes near the Lonsdale and Lightning rocks, and navigators are therefore cautioned to be on their guard before the colours begin to change, as the blending of the red and green lights will indicate close vicinity to the line which passes from the lighthouse over these dangers.
Variation 8° 20' E. in 1867.

(b.) **ADDITIONAL LIGHTS AND SEAMARKS.**—The Swedish Government has given Notice, that during the present and next year (1867-8) the following lights (exhibited from lighthouses now in the course of construction) and beacons will be established on the Swedish coast:—

Alternating Light on Wäderobod.—A light will be exhibited on Wäderobod, Wäder islands, Bohus bay, on or about the 1st day of September, 1867.

The light will be an *alternating red and white* light.

The illuminating apparatus will be dioptric or by lenses.

The position of the lighthouse, as given, is in lat. $58^{\circ} 32\frac{1}{2}'$ N., long. $11^{\circ} 2\frac{1}{4}'$ East of Greenwich.

Fixed Light on Faludden, Gottland.—In or about the month of October, 1867, a light will be exhibited on Faludden, on the south-east coast of Gottland.

The light will be a *fixed red* light.

The illuminating apparatus will be dioptric or by lenses.

The position, as given, is in lat. $56^{\circ} 59\frac{1}{2}'$ N., long. $18^{\circ} 25\frac{1}{2}'$ East of Greenwich.

Lights at Bokö Sund, Ledskar, and Femersö.—In or about the month of October, 1867, the following lights will be established in the interior fairway between Stockholm and Brawiken; viz.,

Bokö Sund, in lat. $58^{\circ} 51'$ N., long. $17^{\circ} 36\frac{1}{4}'$ East of Greenwich.

Ledskar, in lat. $58^{\circ} 42'$ N., long. $17^{\circ} 14'$ East of Greenwich.

Femersö, in lat. $58^{\circ} 39'$ N., long. $17^{\circ} 7'$ East of Greenwich.

Alen Beacon. A pole beacon will be erected on the Alen rock, in lat. $58^{\circ} 32\frac{1}{4}'$ N., long. $17^{\circ} 2\frac{1}{2}'$ East of Greenwich.

The lights will not be visible far to seaward, as they, with the beacon, are intended for the guidance of vessels proceeding along the coast inside the rocks.

Rute Missloper. A pile of stones will be built on this rock in lat. $57^{\circ} 46\frac{1}{4}'$ N., long. $19^{\circ} 7'$ East of Greenwich, having a red belt in the middle.

(c.) **IRELAND—EAST COAST.**—**ALTERATION OF BUOYS BETWEEN THE KISH AND TUSCAR LIGHTS.**—The Corporation of the Port of Dublin has given Notice, that on or about the 15th day of August, 1867, the following alterations will be made in the Buoyage of the Sand banks along the East Coast of Ireland, between the Kish and Tuscar Lights, viz.,—

Kish Bank.—*North Kish Buoy* will be changed from a can to a conical buoy, coloured *black*, surmounted by a staff and ball, and lettered “Kish Bank, No. 1.”

Middle Kish Buoy.—An additional can buoy, coloured *black*, and lettered “Kish Bank, No. 2,” will be placed midway between the north and south buoys of that bank.

South Kish Buoy will be changed from a can to a conical buoy, coloured *black*, and lettered “Kish Bank, No. 3.”

Codling Bank Buoy will be moved about two miles N. by W. $\frac{3}{4}$ W. of its present position, and changed to a can buoy, coloured *black and white*, in vertical stripes, instead of a black conical buoy, surmounted by a staff and ball as at present.

India Bank Buoy will be changed to a conical buoy, coloured *black and white* in horizontal bands, instead of a black can buoy as at present.

Arklow Bank.—*North Arklow Buoy* will be coloured *red*, surmounted by a staff and ball, and lettered “Arklow Bank, No. 1,” instead of black and white stripes, with staff and ball, as at present.

Intermediate Buoys.—Three can buoys coloured *red* will be placed at

equal distances from each other, between the North and South buoys of this bank, and marked respectively "Arklow Bank, No. 2," "Arklow Bank, No. 3," and "Arklow Bank, No. 4," instead of the two can buoys striped black and white as at present.

South Arklow Buoy will be a conical buoy, coloured *red*, and lettered "Arklow Bank, No. 5," instead of black and white stripes as at present.

Blackwater Bank.—*North Blackwater Buoy* will be changed to a *black* conical buoy, surmounted by a staff and ball, and lettered "Blackwater, No. 1," instead of a black can buoy as at present.

Intermediate Buoys.—The two intermediate buoys will be changed to can buoys, coloured *black*, and marked respectively "Blackwater, No. 2," and "Blackwater, No. 3," instead of conical buoys coloured black as at present.

South Blackwater Buoy will be changed to a conical buoy, coloured *black*, and lettered "Blackwater, No. 4," instead of a can buoy as at present.

Long Bank.—*North Long Bank Buoy* will be conical with staff and ball, coloured *red*, and lettered "Long Bank, No. 1," instead of a black conical buoy as at present.

Middle Buoy.—An additional *red* can buoy will be placed equidistant from the North and South buoys, and lettered "Long Bank, No. 2."

South Long Bank Buoy will be changed to a *red* conical buoy without staff and ball, and lettered "Long Bank, No. 3," instead of the present black conical buoy surmounted with staff and ball.

(d.) *Fishing Lights on Gottland.*—Permission has been granted for the fishing stations on the island of Gottland to exhibit lights for the guidance of fishing vessels, on condition that two such lights placed at a distance of from 80 to 100 feet from each other, bearing North and South, and both at the same height above the level of the sea, shall be kept burning at the same time.

In connection with the foregoing, the Swedish Government notifies that—According to the regulations now in force, the Swedish light vessels are every year placed out at such times as danger from ice shall have ceased and taken in again when their security is threatened from the same, and that whenever the stationing or removing takes place, or the exhibition of a new light, information thereof will be given.

(e.) The Corporation of the Trinity House, London, has given Notice, that a *black spiral buoy* marked *Boulder* has been placed on the south-western edge of the Boulder bank, Owers sand in 10 fathoms water at low springs, with the following bearings and distances:—

Medmery barn in a line with Chichester spire N.E. by N.

Nab light vessel N.W. $\frac{1}{2}$ W., 6 $\frac{1}{2}$ miles.

Owers light vessel S.E. $\frac{1}{4}$ E., 6 $\frac{1}{2}$ miles.

(f.) A *green* can buoy, with the word *Wreck* painted on it, has been placed on the west side of a wreck, that appears 3 feet above water at low springs and lies 4 cables N. by E. $\frac{1}{2}$ E. from the Horse fort, on the western edge of the Horse sand, Spithead.

The buoy is moored in 2 $\frac{1}{2}$ fathoms water.

Variation 21° Westerly in 1867.

(g.) *Directions.*—The light on Cape Natal not being visible from the Aliwal shoal, care must be taken on making for Port Natal from the south-west not to approach the shore nearer than 4 miles, or to a less depth of water than 40 fathoms, until the light is well made out from the deck, when in standing in it may be brought to bear N.E. by E., this will lead outside all known dangers while to the south of Umlazi river (9 $\frac{1}{2}$ miles from the lighthouse); but when to the northward of the Umlazi

river the light must be brought to bear more to the northward, keeping a long mile from the land. When the light bears W.N.W., haul in to the northward for the anchorage, anchoring in 8½ to 10 fathoms water, with the light bearing S.W. or S.W. ¼ S. distant one mile.

Variation 27° West in 1867.

NEW ZEALAND—NORTH ISLAND.—HOKIANGA BAR. The Harbour-master at Hokianga has given Notice, that the *bar* at the entrance of that river has *shifted* since the last survey, and that where the Admiralty Chart shows a depth of four fathoms water, a vessel struck drawing ten feet water. Mariners are, therefore, cautioned of the danger attending the navigation of that port without a pilot, or until further information has been received.

THE JAMAICA TRIALS.

WE alluded in our last to the condemnation by the Lord Chief Justice of the extreme illegality of the proceedings lately carried on in Jamaica on account of the *so called* rebellion. We find the following relating to them in the *Daily News*, and we have learned with regret since that the Grand Jury itself was not without a taint:—The Charge of the Lord Chief Justice of England to the Grand Jury at the Central Criminal Court in the case of the “Queen against Nelson and Brand” has just been published (at Ridgway’s), edited by Mr. Frederick Cockburn, of the Crown Office. The report has been prepared from the shorthand writer’s notes taken at the trial, and has been revised and corrected by the Lord Chief Justice himself, with the addition of legal and historical notes. It will be remembered that the Grand Jury on ignoring the indictment made a formal presentment strongly recommending that Martial Law should be more clearly defined by legislative enactment. The Lord Chief Justice could not directly endorse this suggestion consistently with the opinions he had expressed in his charge; but he is led by it to make some very decisive remarks on the necessity of settling the whole subject of Martial Law by legislation. He observes:

“I am reluctant to take leave of the subject * * * without protesting, so far as in me lies, and with whatever of weight and authority belongs to the office I have the honour to hold, against the exercise of martial law in the form in which it has lately been put in force. Thrice in little more than half a century—to say nothing of the horrors perpetrated in putting down the insurrection in Jamaica in 1760—in Ireland, in Demerara, in Jamaica, has martial law been carried into execution under circumstances of the most painful character. A man must be dead to all sentiments of humanity—must have banished mercy from the catalogue of human virtues—who can read the history of the Irish rebellion at the close of the last century, the history of the slave insurrection in Demerara in 1823, and of the punishments then inflicted under martial law, as detailed in Mr. Martin’s history of the colonies, under the head of British Guiana, or

the account of the executions and scourgings after the recent outbreak in Jamaica, as shown by the report of the royal commissioners, without shuddering to think what human nature is capable of, when, stimulated by the fierce passions engendered by recent conflict, or by the sense of present, or recollection of past, fear, vengeance is let loose in the shape of martial law, to be exercised by a dominant class on an inferior and despised race."

Having reviewed the circumstances of the outbreak in Jamaica, pointing out that the insurrection was put down in a single day, and that after that had been done 1,000 persons suffered either death or torture, he proceeds :

"Assuming the legality of what was thus done under martial law—as to which I purposely abstain from expressing any opinion, lest any further judicial proceedings should take place—reserving to myself in such an event the exercise of a free and unfettered judgment on future discussion—I advert to the events in Jamaica only as showing the necessity for legislation if martial law is ever again to be put in force. Assuming, in like manner, that credit is to be given to the governor and the military authorities for perfect integrity of purpose in declaring and continuing martial law, and for having been actuated in so doing by no other motive than an honest desire to do what was best for the safety of the island, it seems to me that, the more the honesty of their conduct is insisted on, the more important it becomes to place restraints on the exercise of so despotic and dangerous a power, lest sudden panic, or undue fear, or unreflecting zeal should again lead to its immoderate use, and to the unnecessary sacrifice of human life, or infliction of human suffering. And the fact that among the educated classes of this highly civilized community persons can be found to uphold and applaud such proceedings—though I believe very few persons who do so have taken the trouble to read the report of the commissioners, or the evidence taken by them, or to make themselves acquainted with the facts—seems to me to render the necessity for legislation to prevent such barbarities in future only the more apparent. But of still greater importance is it that, if martial law is to be put in force, rules should be fixed for the procedure to be followed on trials under it. Above all, that where a case turns upon circumstantial evidence, time and opportunity shall be afforded to the accused to meet the charge.

Speaking of Gordon's trial, he says :—"No one, I think, who has the faintest idea of what the administration of justice involves could deem the proceedings on this trial consistent with justice, or, to use a homely phrase, with that fair play which is the right of the commonest criminal. All I can say is, that if, on martial law being proclaimed, a man can lawfully be thus tried, condemned, and sacrificed, such a state of things is a scandal and a reproach to the institutions of this great and free country ; and as a minister of justice, profoundly imbued with a sense of what is due to the first and greatest of earthly obligations, I enter my solemn and emphatic protest against the lives of men being thus dealt with in the time to come."

THE ADMIRALTY AND GREENWICH HOSPITAL.

WE find the following in the *Hants Telegraph*, all of which would be set aside by the adoption of the course proposed in this number.—The decision of the Admiralty with respect to Greenwich Hospital has at length been communicated to the Seamen's Hospital Society, and the verdict is given in favour of Queen Mary's quarter. The arbitrators, however, express the opinion that this quarter cannot be made available for the reception of patients without considerable expense; and there is a deficiency of officers' quarters, and that Queen Anne's wing has great advantages in that respect, as well as in its close proximity to the river. The senior medical officers of the Seamen's Hospital Society have been recently called upon by their committee for the expression of an opinion as to the respective merits of the two wings. Dr. Barnes and Dr. Stephen Ward, the physicians; forwarded written statements in favour of Queen Mary's quarter, subject to the important condition that the necessary and expensive alterations above-mentioned can be carried out. But Mr. Busk, F.R.S., consulting surgeon, and Mr. Rooke, the surgeon, have given decided opinions in favour of Queen Anne's wing, the former emphatically declaring that the *entresol* of Queen Mary's quarter is useless, and that the kitchen and bath accommodation are so large as to indicate an excessive and very wasteful expenditure of income. With a knowledge of these very conflicting opinions the sole conclusion to be drawn is that after a large outlay the wards of Queen Mary's quarter might be made habitable, but that financial difficulties, the absence of a river frontage, and the possession of immense and cumbrous kitchen ranges will so cripple the energies of the Seamen's Hospital Society as to render Lord Derby's liberal concession to the sick seamen in the mercantile marine all but valueless.

COLLISION WITH AN ICEBERG.

THE *Eastward Ho*, from New York, which arrived on Saturday, met with a most serious misfortune on her passage, of such a nature that it seems almost incredible that the vessel with her entire crew were not lost, leaving no record of their fate. The ship left New York on the 17th of October, with a cargo of general merchandize, for this port. The usual gales incidental to the season were met with in the high latitudes, but nothing of serious moment occurred until when off the Cape of Good Hope, on the 4th of January, in latitude $46^{\circ} 30' S$. The vessel was under single-reefed topsails, whole courses set, and spanker, and bowling along before a strong gale at eleven knots per hour. At half-past 9 p.m., suddenly an island of ice, 200ft. high, was discovered right ahead, close aboard; the helm was promptly put down and her headway partially deadened, but there was no room to clear the danger, and with a terrific crash her bows struck against the floating mass, completely driving in the fore part of the vessel. The sheer-rail was

carried away as far as the foremast on both sides; knight-heads, timber-heads, and bitts, together with the stem and forefoot, ground into splinters; the spar deck started from under the plank sheer eighteen inches for twenty feet around each bow, and the port bow stove in to the waterline. The bowsprit and foremast, with everything attached, went over the side, together with the maintop gallant-mast and head of the maintopmast, which in its descent passed through the maintop-sail and main course, there being nothing in the helpless ship but the spanker and mizentopsail; it was blowing a violent squall at the time, the barometer indicating a change. The shock is described as resembling a heavy clap of thunder, and the terror that must have possessed every mind may be more easily conceived than described. Such means as were at hand were promptly brought into requisition, and, as all worked with a will, spare sails were quickly got over the bows to stop the water from getting below. Fortunately, the gale abated in a few hours; the repairs were more nicely carried out, juremasts got up, and the ship kept $1^{\circ} 20'$ further north, and kept on her course for Sydney. On February 18th, in lat. $43^{\circ} 30' S.$, long. $122' E.$, at 2 a.m., she was found, by the aid of a bright moonlight, to be among the ice islands again, through which she ran all day, clearing them at dusk, the last one seen being about twenty-two miles to the south-west; the vessel was then hauled to the northward for eight hours, and again kept on her course. That the temperature of the sea does not note the proximity of ice has, on this passage, been successfully demonstrated, as the thermometer stood at 52° both close to the bergs and at a distance from them. Viewing the ship as she now lies in Darling harbour, it appears truly wonderful how she escaped total destruction.—*Sydney Morning Herald* (March 11).

ABUSES ON BOARD EMIGRANT SHIPS.

IN view of the impetus which the troubles in Ireland and the political complications in Continental Europe have given to emigration, the alleged abuses on board emigrant ships should be inquired into, and if the complaints that have been made, in this connection are well founded, the remedy should be promptly applied. It is alleged, among other things, that, in some cases, insufficient water and food are provided; that cooking privileges are denied unless bought at a high price; that hospital accommodations are not at all sufficiently furnished, and that, in general, passengers are very badly treated. As the warm season sets in the fear of engendering cholera in the holds of crowded ships ought to prompt an early and emphatic correction of the abuses specified. Under the British Passenger Act the emigrant may seek for redress through British government officials in this country as well as in London, Liverpool, or Glasgow. And even if heavy penalties were not awarded in every instance where a suit was brought, the case would at least be officially investigated and officially reported on; which of itself would be of manifest advantage in checking the evils of over-

crowding, insufficient provisions, and extortion in whatever form it might be attempted. Some of the accounts of a passage in the steerage across the Atlantic read like the story of the horrors of "the middle passage." It would appear, that not only are emigrants from European ports in great numbers often crowded into close, contracted, and utterly insufficient quarters, to their serious discomfort, but the stifling and unventilated quarters are fearfully conducive to disease and mortality. We need the labour of hundreds of thousands of this element of European thrift to secure the development of our almost limitless material resources, and no means should be omitted to stimulate the exodus from the Old World to the New. The distinguished statistician, Hon. S. B. Ruggles, of New York, lately published an interesting paper on immigration, in the form of a letter to the Secretary of the Interior, in which he estimates the cash value of every foreign European emigrant to this country, independent of any property he may bring with him, at 1,000 dollars. Of course, if the foreigner is something more than a labourer—if he is master of a trade, it follows that his pecuniary value to the country is still greater. The annual accession, therefore, of even 10,000 foreigners to our people would add to the wealth of the United States 10,000,000 dollars. He further shows that the arrivals here may reasonably be expected within the next twenty years to amount to over five million. The accumulation of wealth to the United States from this source alone is truly prodigious, amounting to more than a third of the present national debt. In view, therefore, of the advantages accruing to our people and government from immigration, it is clearly our policy to encourage it by every means in our power. And no better means, to this end, can be afforded than to render the transit of the immigrant to our shores as easy and as pleasant as possible. Investments in this direction will return to the investors a hundredfold.—*New York Shipping and Commercial List.*

TO CORRESPONDENTS.

The Communication from Adelaide, Australia, has reached us.

CHARTS AND BOOKS PUBLISHED BY THE HYDROGRAPHIC OFFICE,
in May, 1867.

1183.—England—West Coast, Bristol Channel, Kenfig River to Nash Point, including Scarweather and Nash Sands, and views. Commander Alldridge, R.N. 1860. 2s. 6d.

505.—West Indies—Tobago Island, with plan of Courland Bay, with views. John Parsons, Master, R.N. 1865. 2s. 6d.

488.—Ditto, ditto, Eastern part. John Parsons, Master, R.N. 1865. 1s. 6d.

508.—Ditto, ditto, Scarborough, Rockly Bay, with views. John Parsons, Master, R.N. 1865. 1s. 6d.

EDWARD DUNSTERVILLE, *Commander, R.N.*
Hydrographic Office, Admiralty,
21st May, 1867.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

JULY, 1867.

THE VOLCANO OF MAUNA LOA, OWHYHEE, SANDWICH ISLANDS.

FOR our own reasons we have here departed from the accepted mode of spelling the name of the island containing the volcano of Mauna Loa, and these are the original English spelling of it by the discoverer, our celebrated Captain Cook, and the adoption of his mode by our own Geographers. It was natural for the French navigators afterwards to suit their own mode of spelling to their own ears, and the adaptation of the islanders' pronunciation as near as they could to their's. But why their mode of spelling should be followed so soon by the descendants of Englishmen we are at a loss to understand. The difference in the pronunciation of the terms Owhyhee and Hawaii is nothing, provided that the Englishman reads the latter as a foreigner, making the *i* an *e* and *Haw* for *O*. However this may be, and notwithstanding the islanders adopt the latter, while our Geographers and our Hydrographers preserve (as in our opinion they very properly do) the orthography of the original discoverer, we cannot think of so far slighting our own great circumnavigator, who perished in the cause of this very discovery, by adopting that of another. We propose to preserve for our readers the following account of the Eruptions of the largest and most celebrated volcano in the world, from the pages of a local paper—a volcano to which, in point of importance, magnitude, and splendour, all others are insignificant, and to which Vesuvius, celebrated by our travellers on account of its proximity, bears no comparison. Our volume for 1859 contains an account of the last great eruption, and we here give an historical *resumé* of these doings.

The late volcanic eruption on Hawaii, which has been visited and
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viewed with pleasure by a large number of our residents—ladies as well as gentlemen—has excited so much interest in it, that we have prepared the following somewhat extended historical sketch of eruptions on that island, which will, we trust, prove interesting at home as well as abroad.

Whether we view its height and immense size, the beauty and singularity of its dome-like summit, or the magnitude and length of its lava streams, the volcano on Mauna Loa, on Hawaii, is one of the most remarkable in the world, rising from the sea to an elevation of nearly 14,000 feet. In height it is only exceeded by the active volcanoes of Cotopaxi in Equador (18,887 feet) and that of Popocatepetl in Mexico (17,700 feet), and two or three others in Asia and America. All these rise from elevated table lands, and consequently only show a height of 7000 to 9000 feet from their bases. Mauna Loa, on the contrary, rises in one stupendous mount directly from the sea.

Few of our readers are aware that on the summit of Mauna Loa exists an enormous crater, excelled in dimensions only by that of Haleakala, on East Maui. This crater was first described by the lamented English traveller, Douglas, who visited it in 1834, and subsequently lost his life on the same mountain. The circumference of the rim of this crater, as measured by him, is about twenty-four miles, or eight miles in diameter, and its depth 1270 feet. The bottom of this crater is rent by terrible chasms, which to all attempts yet made are unfathomable. This crater is divided into three lesser ones, the northern of which, known as Mokuawcoweo, has frequently been in action; the others appear to have long been quiescent.

Earthquakes, though of frequent occurrence on Hawaii, are happily so slight as to be barely perceptible, and have never been known to do more serious damage than that of throwing down stone walls, upsetting milk-pans, etc. The inhabitants of that island have never manifested the slightest fear from earthquakes. They occur, on an average, six or eight times a year, though in some years nearly double that number have been noticed. On the other islands of this group, excepting occasionally on Maui, earthquakes are seldom or never experienced.

Of the three large volcanoes on Hawaii, which were probably in frequent action during the eighteenth century, two of them, Mauna Kea and Hualalai, are now extinct. Appearances would indicate that the former ceased action first, as the lava on its sides bear an older character. Of Hualalai, which was last in action about sixty years since, Jarves says :

“This mountain was ascended for the first time by a party from Vancouver’s vessels, in 1794. Smoke was then visible at its greatest elevation. A few years later, it poured out a volume of liquefied rock, which overran a wide extent of country, destroying several villages, fish-ponds, and plantations, finally expending itself in the ocean, where it filled up an extensive bay, twenty miles in length, and formed a new headland several miles beyond the old termination of the coast. The mountain yet looks gloomily, as if brooding some new disaster.”

The natives on Hawaii still narrate to travellers the story of the

death of a woman and child, which occurred in one of the last eruptions on Hualalai. The base of that mountain had then as it has now, small fishing villages scattered along its shore. The last eruption began in the night, and the natives were roused from their slumbers by the noise of the lava stream flowing down towards their settlement. Nearly all succeeded in escaping. In one hut, however, the husband only was awaked, and went out to learn the cause of the noise, but from fright ran off leaving his wife and child. The lava approached rapidly, but before the woman was waked by the wild shrieks of the natives, it had encircled the hut and found its way to the sea. Escape was impossible. To attempt to cross the fiery stream, was instant death. Nearer and nearer the stream came until it reached the hut, setting it on fire. The frightened woman, with her child in her arms, sought refuge in a pandanus tree—but here safety was only for a moment. The hut was fast crumbling to ashes beneath the fiery destroyer, which was rapidly approaching the roots of the tree. There was now no hope, the lava had reached the tree and burned its roots, and soon the woman and child fell a sacrifice to the insatiate goddess Pele.

Mauna Loa is the only volcano now active on Hawaiian Islands. Its principal crater is that of Kilauea on the eastern side, at an elevation of 4,104 feet above the sea. But its eruptions are not confined to this crater, but occur on all sides of the mountain and at various heights—sometimes near the summit, but more frequently between 7,000 and 12,000 feet above the sea. We have found no publication that gives a chronological account of the eruptions on Mauna Loa, nor do we know of any such. It would be an interesting study for some of our antiquarians to look up and give brief accounts of the eruptions which have occurred since the discovery of this group.

Prof. Dana, in his *Geology of the U. S. Exploring Expedition*, the most valuable work to which we have had access, speaks of several early eruptions of the volcano on Hawaii. We quote his accounts:

I. 1789.—“The first eruption of Kilauea, of which tradition gives any definite knowledge, occurred about the year 1789, during the wars and conquests of Kamehameha I. It took place between Kilauea and the sea, in a south-easterly direction. It is said to have been accompanied by violent earthquakes and rendings of the earth, and an eruption of stones and cinders from the open fissures. It was so violent and extensive that the heavens were completely darkened, and one hundred lives are supposed to have been lost. There are now, over a large area near Kilauea, a few miles distant to the south or south-east, great quantities of a light pumice-like scoria with stones and sand, which are believed to have been thrown out at this time.” [This eruption is spoken of in Dibble's *History*, as having destroyed part of the army of Keoua, Kamehameha's rival.]

II. 1823.—“The outbreak of 1823, and the features of the crater after it, are described by Mr. Ellis. A large tract of country in Kau was flooded, and the stream, when it reached the sea, as I am informed by Mr. Coan, was five to eight miles wide. The earth is said to have

been rent in several places, and the lavas were ejected through the fissures, commencing their course above ground some miles south of Kilauea. There was no visible communication with the lavas of the crater at the time, but the fact of their subsiding some hundred feet simultaneously with the eruption, is satisfactory evidence of a connection." [This overflow probably entered the sea at Kapapala. It is spoken of by Douglas, in the *Hawaiian Spectator*, vol. ii. p. 415.]

III. 1832.—“In June, 1832, an eruption took place both from Kilauea and the summit crater of Mauna Loa. The only ejection at this time of the lavas of Kilauea to the surface, of which we have definite account, occurred in the east wall of the crater. A deep fissure was opened in the wall, from which streams flowed out, part back into Kilauea down the steep slope, and part across into the old crater, which at the time was overgrown with wood. * * *

“In September of 1832, when Rev. J. Goodrich visited Kilauea, the eruption had taken place. The lavas, which previously had increased so as to fill up to the black ledge and fifty feet above, had sunk down again nearly to the same depth, leaving as usual, a boiling cauldron at the south end. The earthquake of the January (June?) preceding had rent in twain the walls of the crater, on the east side, from top to bottom, producing seams from a few inches to several yards in width, from which the region between the *two craters* (Kilauea and the ‘Old Crater’) was deluged with lava. About half way up the precipice there was a vent a quarter of a mile in length, from which immense masses of lava boiled out directly under the hut formerly occupied by Lord Byron’s party.” See *American Journal of Science*, xxv. 199.

“From these accounts (Goodrich’s, etc.) it is probable that, in addition to the ejections from the east wall, which are insufficient to account for the subsidence in the lower pit, there must have been a *subterranean* outlet beneath the sea.”

IV. 1832.—“An eruption is stated to have taken place in the summit crater of Mauna Loa on the 20th of June, 1832, and the mountain continued burning for two or three weeks. The lavas broke out in different places, and were discharged from so many vents, that the fires were seen on every side of the dome, and were visible as far as Lahania.” See *American Journal of Science and Arts*, xxv., 201, in a communication from Rev. J. Goodrich, dated 1832, November 17th.

The Eruption of 1840.

The best account that we can find of this eruption of Kilauea is given by Jarves in his *Scenes and Scenery* :

“On the 30th of May (1840), the inhabitants of the district detected a smoke and some fire rising, in the direction of the volcano (Kilauea). As it proceeded from an uninhabited and desolate region, they gave themselves no further concern about it, attributing it to the burning of brush-wood. The next day, being Sunday, the several congregations

at Hilo and its vicinity, were alarmed by the prodigious increase of the flames, in that quarter. They increased so rapidly as to leave no doubt that the volcano was in motion; but in what manner it was discharging itself, was as yet conjecture. The fiery column, sending forth heavy masses of smoke and cinders, gave indication that it was no ordinary outbreak. Fear began to seize upon some. The burning torrent was four thousand feet above them; and if it turned in the direction of Hilo, the devastation would be dreadful. But on the 1st of June it began to move in a north-easterly direction; and in little short of four days reached the sea, having flowed forty miles from its source. Owing to the inequalities of the country, the rapidity of its movement was not uniform. In some places it was stayed for a considerable time, until a valley had been filled up, or precipice overthrown. In such spots it spread itself into lakes many miles wide. On level ground it moved slowly and sluggishly, but when it met with a descent, it acquired a velocity of even five miles the hour, consuming every thing before it. Its depth varied according to the nature of the soil, and is from twelve to two hundred feet and upwards. The average descent of the country in the direction it took, is about one hundred feet to the mile. Its general movement, owing to its great consistency, was in immense semi-circular masses or waves. These would roll on, gradually accumulating, until the mass had become too heavy to hold itself together, while the exterior was partially cooled and solidified; then bursting, the liquefied interior flowing out would join a new stream, and by its momentum cleave that asunder. By these accelerated progressive movements, the wave-like ridges were formed, which are everywhere observable on the older dykes. At times it forced its way under the soil, presenting the singular appearance of earth, rocks, and trees in motion, like the swell of the ocean. It found its way into crevices and subterranean galleries, flowing on until it had filled them up, or met with some impediment, then bursting up the superincumbent soil, it bore off upon its livid surface, like rafts on a river, hillocks with trees still standing upon them; and so great was its viscosity, heavy rocks floated down with the stream. A white man, who was standing upon a small lime hill, near the main stream, absorbed by the spectacle, felt the ground beneath him in motion, and, before he could retire, it had been raised ten to fifteen feet above its former height. He had barely left the spot before it burst open like a shell, and a torrent of fire issued rapidly forth. On the third day of the eruption, three new hills of a mile in length, and from six hundred to eight hundred feet high, were formed in the direction where the fire first appeared. In two days they had entirely disappeared.

To the windward, the running lava could be approached, near enough for those who visited it to thrust long poles into the liquefied rock, and draw forth specimens. On the leeward side, owing to the intensity of the heat, the noxious and deadly vapours and gases, with which the air was impregnated, and the showers of hot ashes, sand, and cinders, which were constantly descending, all vegetation for many miles was destroyed, and the inhabitants obliged to flee with the greatest ex-

pedition. Fortunately, the stream flowed through two 'lands' only, according to the Hawaiian division of territory, those of Nanawale and Kanahikio; both sparsely populated, and quite barren. Consequently, the warning being ample, although a number of small hamlets were overwhelmed, and a multitude of swine and poultry perished, no lives were lost among the people. The body of an old woman, who had just died, was consumed. The colour of the viscid mass was, while flowing sluggishly, of the deepest crimson; when more active, it resembled gore and fresh blood violently stirred together. At Hilo, and places forty miles distant, such was the brilliancy of the light, that the finest print could be easily read at midnight. This noon-tide brightness, converting night into day, prevailed over all East-Hawaii, for two weeks, and is represented, by eye-witesses, to have been a spectacle of unsurpassed sublimity. It was like the glare of a blazing firmament, and was seen for upwards of a hundred miles at sea. It also rose and spread itself above the lofty mountain peaks, so as to be distinctly visible on the leeward side of the island, where the wind drove the smoke in dense and massy clouds."

The Eruption of 1843.

An eruption took place in January, 1843, which is described by Messrs. Andrews and Coan, *Missionary Herald*, xxxix. 381, xxxix. 463, and xl. 44. It broke out at the very summit on the 10th of January, and continued down the slopes of Mauna Loa in two streams; one flowed to the westward towards Kona, the other flowed northward to the foot of Mauna Kea, and then dividing, one part continued on towards Waimea, north-eastward, and the other towards Hilo, eastward. The branch toward Mauna Kea is described as twenty-five or thirty miles long, and averaging one and a half miles in width. It appears from the accounts that the mountain was fissured in the two directions, and that the ejections took place from the fissures instead of from the summit craters where it commenced. Says Mr. Coan:—"On the morning of January 10th, before day, we discovered a small beacon fire near the top of Mauna Loa. This was soon found to be a new eruption on the north-east slope of the mountain, at an elevation of near thirteen thousand feet."

"Subsequently," Mr. Coan goes on to say, "the lava appeared to burst out at several different points lower down the mountain, from whence it flowed off in the direction of Mauna Kea, filling the valley between the mountains with a sea of fire. Here the stream divided, part flowing toward Waimea, and the other eastward toward Hilo. Still another stream flowed along the base of Mauna Loa to Hualalai, in Kona. For about four weeks this scene continued without much abatement." etc. Ascending the mountain, Mr. Coan reached the stream of lava between Mauna Loa and Mauna Kea, about 7000 feet above the sea. On the evening of the third day, "as darkness gathered

around us, the lurid fires of the volcano began to glow and to gleam upon us from the foot of Mauna Kea, over all the plain between the two mountains, and up the side of Mauna Loa and its snow-crowned summit, exhibiting the appearance of vast and innumerable furnaces burning with intense vehemence. On this plain we spent the day in traversing and surveying the immense streams of fresh scoria and slag which lay in wild confusion further than the eye could reach, some cooled, some half cooled, and some still in fusion." On the ascent they passed fields of scoria, and regions that were at times steaming and hot, evincing igneous action beneath.

"Soon we came to an opening of twenty yards long and ten wide, through which we looked, and at the depth of fifty feet, we saw a vast tunnel or subterranean canal, lined with smooth, vitrified matter, forming the channel of a river of fire, which swept down the steep side of the mountain with amazing velocity. As we passed up the mountain we found several similar openings into this canal, into which we cast large stones; these instead of sinking into the viscid mass, were borne instantly out of sight. Mounds, ridges, and cones even thrown up along the line of the stream, from the latter of which steam, gases, and hot stones were ejected. At three o'clock we reached the verge of the great crater where the eruption first took place, near the highest point of the mountain. Here we found two immense craters, close to each other, of vast depth, and in terrific action."

The Eruption of 1852.

The eruption occurred in February, 1852, and broke out on the north side of Mauna Loa, not a great distance from that of 1855. An account of it, written by Mr. J. Fuller, and dated May 12th, we find in the *Friend* for May, 1852, and extract a few paragraphs describing the scene:

"During the first night, at the distance of forty miles, we heard the rumbling of the volcano, like the roar of the heavy surf breaking upon the shore—and saw the sky brilliantly illuminated above the crater and the flowing lava. An immense column of vapour and smoke arose from the crater and formed a magnificent arc, reflecting the red and purple light of the fiery masses below. Animated by sights and sounds so grand, we quickened our pace in order to gain a nearer view of the scene, believing that in this case, distance did not lend enchantment to the view.

On the second day towards night we came to a hut built by the party of the previous week—being wet with the rain, we concluded to spend the night here—we enlarged the house, built a fire in one part of it, put on dry clothes, wrapped ourselves in our blankets and passed a comfortable night. The morning was fine, we soon caught sight of the lava jets as they shot up above the distant mountain ridges, and passing the whitened bones of a mule lost by the King's party while

crossing the mountains two or three years ago—snatching here and there a bunch of delicious ohelos which grew by the path, we came, at about ten a.m. of the third day, to the last ridge that separated us from the region of the eruption; ascended to the top of this, the whole scene, *wild, terrific, grand, magnificent*, bursts upon our senses!

It is impossible to give you a complete description of what we saw and heard, or to draw a picture which will produce the same impression on your mind that the original did upon mine. Language, on such an occasion is powerless, eloquence is dumb, and silence is the expression most congenial to the sentiments of the soul. Yet I will try to give you some facts and hints which will assist your imagination in its conceptions of the wildly interesting scenes we witnessed.

Imagine yourself, then, just ascended to the top of the above mentioned eminence. Before you, at a distance of two miles, rises the new formed crater in the midst of fields of black, smoking lava, while from its centre there jets a column of red hot lava to an immense height, threatening instant annihilation to any presumptuous mortal who should come within the reach of its scathing influence. The crater may be 1000 feet in diameter and from 100 to 150 feet high. The column of liquid lava which is constantly sustained in the air, from 200 to 500 feet high, and perhaps the highest jets may reach as high as 700 feet! There is a constant and rapid succession of jets one within another, the masses falling outside and cooling as they fall, form a sort of dark veil, through which the new jets darting up with every degree of force and every variety of form, render this *grand fire fountain* one of the most magnificent objects that human imagination can conceive of. From the top of the lava jets, the current of heated air carries up a large mass of scoria and pumice, which falls again in constant showers for some miles around the crater."

(*To be Continued.*)

A FOREIGNER'S ACCOUNT OF US—*The Admiralty.**

NEAR Parliament Street, of London, there stands a sombre brick building, the principal face of which forms the interior of a dull damp courtyard. To bring it to the side of the street two wings have been added, which while they form two sides of the court, contribute nothing to improve the monotonous character of the architecture: nevertheless it is here that the business of the Admiralty is carried on. The English have been long celebrated for their contempt of architectural pride: in fact it is said that they even consider it honourable to conduct the affairs of the state in low contemptible looking buildings. The contrast between a great maritime power and squalid poverty in such an edifice seems to have struck our neighbours themselves from the middle of the last century. In

* Suggested principally by an article in the *Revue des deux Mondes*.

1776, two architects of the name of Adam (brothers) undertook to screen the entire want of elegance in the building by a wall, with but little effect, yet certain well finished, although rather tame emblems placed on it in the shape of winged seahorses,—the prow of a Roman galley, and an imitation of the forepart of an English ship of war, indicate tolerably clearly the nature and purport of this public building. However to make up for want of elegance in structure, it has certain claims to notice quite after the heart of a people jealous of their national history.

The Admiralty in former times was Wallingford House, which according to Pennant, the English historian, was so called, "because it was inhabited by the Knollys—Viscounts Wallingford." Oliver Cromwell held some of his councils here, and here also the celebrated George Villiers, Duke of Buckingham, was born, who in 1676 became one of the members of the administration known by the name of the *Cabal*.* The restoration had secured him a revenue of £20,000, which he squandered in all kinds of extravagances. The son of a parent, assassinated in the reign of Charles the First, whose favourite he was, by turns he had been alchemist, painter, poet, musician, gentleman, an indiscreet wit, a debauché, turning night into day and day into night, ambitious and at the head of every party; the second George Villiers by his vices and eccentricities more than rivalled those of the court of Charles the Second. Dryden has drawn his portrait with a masterhand in dark colours: he has shown up the extravagances and follies of this singular character, leaving more than one tragic episode in the shade. George Villiers was the lover of the Countess of Shrewsbury, whose husband he killed through jealousy. The countess, disguised as a page, held the bridle of the duke's horse, while this was proceeding, and the murderer in his blood stained condition bestowed his attention on her before he had even changed his clothes. The Duke of Buckingham, according to Pope, died after having run through a princely fortune "in the miserable room of a squalid cottage," and according to others, in one of his tenants' houses at Kirby Mallory.† It was in the reign of William the Third that the Admiralty Office was installed in the ancient dwelling of the prodigal son.

It was with much interest that I visited this fountain of the maritime power of England. The administrative habits of Great Britain have nothing of that official raideur which distinguishes them in other countries. I was shewn over the offices with the greatest kindness, the old bowling-green of the Dukes of Buckingham, now converted

* The period at which the *Cabal* ministry was formed is said to have been at "the lowest point of degradation this old English nation ever reached; her fleets swept from the sea, and her king called the menial of a foreign power . . . The former government was superseded by the most unprincipled administration in our annals called the *Cabal*, from the initials of its chief members' names:—Clifford, Arlington, Buckingham, Ashley, and Lauderdale; and men began to despair." *History of England by the Rev. James White*.

† At a very recent Exhibition of our Artists there was a picture of it.

into a garden, the room in which Nelson lay and from whence he was carried in great state to St. Paul's Cathedral, the first model of the statue on the column of Trafalgar Square, the library, the anteroom of the First Lord of the Admiralty, the walls of which are ornamented with arms and accoutrements, and the Board-room. What imparts an air of lively interest to the interior of this otherwise cold forbidding edifice is its association of ideas with historic reminiscences. How many men of note and eminence have ascended that stone staircase. Perhaps in that old leathern arm chair Captain Cook himself was once seated. I was also shewn the book signed by the admirals on taking the oath of allegiance, when they declared on their honour to oppose, as far as they could, the authority of the pope in matters of religion, the belief in the real presence, and other articles symbolical of such matters. What could these dogmas have to do with the management of a fleet? It must not be forgotten nevertheless, that, if from the sixteenth century England has resisted sometimes alone her enemies on the continent: it was by opposing to them two great principles—Protestantism, and the sea. What great names are written by their bearers in this list of heroes of whom many have sealed with their blood their devotion to their country and the right of freedom in belief. The Board-room in which the Lords of the Admiralty assemble is only distinguished by curious old carvings. Here again appears Nelson, but now in a painting done at Palermo, by Leonardo Guzzardi. This however fails in want of relief and expression. At the head of a large table covered with green cloth, stands the chair of the president or first lord, while the other lords fill the chairs by which it is surrounded. In fact the whole room is old and gloomy, with poor light and no ornament: nevertheless it is here that the most important questions are decided, that interest the navy of the country.

The Admiralty correctly represents the head of the maritime administration, but it is a body the members of which are scattered over the surface of Great Britain. To speak of London alone, the affairs of the navy will be found distributed in other places, one in Spring Gardens, and another at Somerset House. A simple fact will sufficiently explain the propriety of this division of administration, that appears at first extraordinary to strangers. Thus like nearly all the branches of the British government, the maritime power is formed by means of distinct elements, which must necessarily increase and multiply in proportion as the business of the country increases; but which never are allowed to accumulate in one centre. The British navy has grown with the nation, and to avail myself of a common mode of expression, it is the result of circumstances. Such a condition must not be considered then as produced intentionally, it is the natural result of the law of cause and effect. Thence it is that it readily assumes the form it receives from time to time from the Anglo-Saxon character. Nevertheless such a state of things entails inconvenience, and it becomes necessary to have recourse to certain means of connecting the divided parts of the system. One of the offices is devoted to the transmission of orders from the Admiralty, and which (thanks

to the electric telegraph) range to all parts of the kingdom. By means of these electric lines, always in operation at the command of the administration (like the brain and the nervous system), the Admiralty can telegraph its orders to different offices of London, to the government dockyards of Sheerness or Portsmouth, and send a ship to sea at pleasure. Such galvanic means differ neither in form nor material from those employed elsewhere; but there is something imposing in the silence of the office where such work is done, the very atmosphere of which may be said to be filled with the grave matters and secret messages of state. The orders which were thus transmitted at the time of my visit, were perhaps of no great importance; but the mechanical application of the means was the same as if to organize the measures for some great naval battle, as the flash which gave the order and which might represent the discharge of the cannon, departed on its silent course.

The powers of defence in England consist of a fleet and an army: but a characteristic feature of administration separates the one from the other. The army is considered to belong to the Queen, who is represented by a commander in chief—at present the Duke of Cambridge. But this is not the case with respect to the Navy. The crown has either ceded its rights over the Navy, or such rights never existed (this seems to be an unsettled point), but the government of the Navy has always rested with the Lords of the Admiralty. From whence has come this power? and how formed? These matters may be explained in a few words.

The office of high admiral existed in England long before England possessed a royal fleet. If the sovereign meditated a naval expedition, the merchant shipping in the different ports of the country were required to give their services. Recent researches have shewn that certain vessels of the state served as the nucleus of these squadrons; but the system of a permanent fleet was not introduced into the affairs of Great Britain until the time of Henry the Eighth. As to the officer charged with superintending these preparations for war as well as the general affairs of the ships, he has borne successive titles which have indicated the nature of his duties. First he was the guardian of the sea, *custos maris*: then the maritime lieutenant of the crown, *locum tenens super mare*: and towards 1297, the King of England's Admiral of the Sea, was sometimes a stranger to the art of naval warfare, and mostly one of the king's sons or some member of his family, but was not obliged to command the fleet in person. It was quite sufficient for him to organize and direct the proceedings of the naval forces from a distance, like Louis the Fourteenth, "whose grandeur chained him to the shore." The office was continued thus until September 20th, 1628, the epoch when for the first time it was confided not to an individual, but to the hands of a committee. This was shortly after the first George Villiers, duke of Buckingham, and then High Admiral of England, had been assassinated by Felton. This took place at Portsmouth, on August 23rd, 1628. The treasurer, Lord Weston, Count Lindsey, and others were called on to take

charge of the duties which had belonged to the duke, who must not be confounded with his son, the paramour of the Countess of Shrewsbury. From that time the two systems alternately prevailed; and from time to time, the duties of the High Admiral were performed by one of the principal officers of the state. Such was the case when Cromwell seized the reins of maritime affairs along with those of the government, which had been for some years held by the parliament. After him, the Duke of York, brother of Charles the Second, Charles the Second himself, Prince George of Denmark, and the Earl of Pembroke filled the office.

In fact, after more than a century and a half with but one exception, that of the Duke of Clarence, William the Fourth (who was Lord High Admiral of England from 1827 to 1828), the maritime affairs of England have always been conducted by a Board. The functions of the ancient High Admirals consisted on one hand of preserving and regulating the naval forces of the kingdom, and on the other of administering justice in all processes relating to affairs at sea. The first of these powers is at present exercised by the Admiralty itself, and the second by a tribunal which bears the name of the High Court of Admiralty, a court which exercises its authority over maritime affairs either civil or criminal.

[The author of the paper in the *Revue* does not seem to be aware that all cases of discipline relating to Her Majesty's ships are settled by courts martial composed of naval officers regulated by the articles of war, while those relating to matters involving property of mercantile shipping are settled by the High Court of Admiralty. And again that matters involving discipline, etc., of merchant shipping, as well as cases of felony regarding them, such as the wilful destruction of ships, belong to civil tribunals.]

The Board or Committee which regulates the affairs of the Royal Navy is composed of six members and two secretaries. The First Lord is generally a person of high standing entirely unknown to sea matters; he is a member of the cabinet, and corresponds in his office to the Minister of Marine in France. The second, designated by the title of the senior sea lord, is on the contrary the natural councillor of the First Lord in all matters which require his special opinion regarding nautical affairs. He is often the senior one of the Board, who, as they say, knows saltwater or the smell of the tar-bucket. The sixth member or Junior Lord of the Board is generally a young man of good birth, who wishes to get his hand in to matters of government, and learn the maritime affairs of the kingdom. All these commissioners are nominated by the Queen: they originate and fall with the ministry, in whose political views they partake.

On their taking office, the Lords of the Admiralty find the duties of their office divided between them. A statement is printed entitled "Distribution of Business," defining the duties usually assigned to each of the lords according to seniority at the Board. This arrangement, in virtue of which the council delegates to its members their several duties, receives no sort of publicity. It is a kind of family

compact, and the Admiralty remains a council of six, concealed from the country. The extensive sphere of its authority includes the management and discipline of the fleet, the control of dockyards and other government establishments, which pertain more or less to the sea. Its duties include the nomination of naval officers, either civil or military, and to regulate the expenses of repairing or building ships, and to control the establishments of naval instruction belonging to the government; all which affairs are regulated by the Board. The decisions of these meetings however, undergo revision and scrutiny. According to a time-honoured custom, the first lord holds a supreme opinion at the Board. In fact he is in the position of a member of the Cabinet. Having the secrets of the government, he controls certain armaments or makes a new disposal of naval forces, without being accountable for them to the Board. The other lords have then but to choose between two courses, to agree or resign, and the last is very seldom adopted. The minister has good right to justify his silence by more than one serious motive. Would it be right for him to allow his intentions to get abroad by confiding them to honourable men, no doubt but which might by accident unintentionally get spoken of at the clubs? There is nevertheless an anomaly which is at once evident here. That is, a Board covering with its collective responsibility, acts with the entirety of which it is scarcely informed. The assent of the commissioners becomes in this case, the index of the minister's will. In general however, the first lord defers to the opinions of the other lords, as far as concerns the details of the administration with which they are charged. He does not preside always at all decisions; two commissioners and a secretary are sufficient to make a Board. The first secretary is generally a member of Parliament, and when the minister belongs to the Upper House of Parliament, he is often the only organ of the Admiralty in the House of Commons.

The system of the Board has often from old been the subject of severe criticism in England. It is reproached, and with much reason, of weakening the responsibility of power by being divided,—which praises or which blames in a group of individuals, that presents the appearance of a factitious solidarity, and which deals with affairs without leaving a trace behind it. In a country where public opinion is everything, one has a right to deal with the powers of authority in the shape of flesh and blood, and not with shadows, which, like the divinities of Homer, disappear in a mist the moment that one would touch them. Above all other committees of the same kind has this of the Admiralty found shelter from the attacks of the press? Certainly not. Indignation ran high among our neighbours when the First Lord of the Admiralty, Sir John Pakington, lately declared before Parliament that he had scarcely a vessel in the Reserve fit immediately to be sent to sea. The country remembers bitterly some seventy millions sterling which have been expended in seven years for the fleet, and the cry of alarm spread to every corner of Great Britain. There is no doubt some exaggeration in the many comments to which this declaration of the minister gave rise, and I should pity the

stranger who believes every word to be true that is uttered by our neighbours on their affairs. The English, as far as regards the interests of their country, resemble the husband who growls bitterly over the state of his own affairs, but does not permit a single other person to say a word against them. Never does the actual condition of the British navy fulfil either the hopes entertained of it, or correspond to the sacrifices of money that have been lavished upon it. Each new minister, on taking office, holds the same language as Sir John Pakington. Is it for the purpose of depreciating the preceding administration? I cannot think so:—surely the British navy suffers from some chronic infirmity. Apart from the faults found by the Admiralty several causes sufficiently explain that the present period is a crisis of uncertainty.

An attentive observer would not fail to perceive what has passed for several years under the ministry even of Lord Palmerston. It will be remembered that the English Government proposed, for the first time, to construct on the sea-coast large defensive works, and obtained large grants of money to carry out the plan. Fortifications, and what for? The English of the last century disdained to fortify their coasts! thus defying the whole world to approach them. "The sea, they said, is our battle-field, and yet Admiral de Ruyter boasted that his flag had forced the mouth of the Thames." It is not for me to judge of the propriety of the great works, which the English carry on from year to year at enormous sacrifices of money: all that I can see in them is an acknowledgment of uneasiness. The formation of redoubts, and stone bastions, sufficiently attest that our neighbours have lost their faith in the old wooden walls—their ships! What is it then that has shaken this old confidence in the protection of the sea? How is it that Great Britain has thus seen some (it may be said) of her power dissipated? The material condition of a fleet of war ships has changed in the course of half-a-century. Hitherto, in order to maintain her superiority on the sea, England reckoned on the valour and experience of her seamen. Tritons as they are, born on the shores of an island, from their youth they are inured to the elements, and their first consideration was the sea rather than the land. Steam, adapted to the use of large ships, and lately armour-plated vessels, have singularly changed the condition of naval affairs. To men fighting against each other almost a war of machinery has succeeded. Whatever might be the courage and intelligence of the assailants, always the soul of the new marine monsters, it is certain that individual power is nearly lost behind the masses of iron bearing the thunder of war on their impenetrable sides. One must not be surprised then that recent inventions have, for an instant, disconcerted the ancient maritime genius of England, accustomed to long success obtained by other means.

Unfavourable or advantageous as these new terms of meeting hostile nations may be, they must still be put up with. England, by her insulated position, her history in reference to commerce, and her colonial possessions, must of necessity be a maritime power of the first

order. She follows then, although with some reluctance, and an evident dislike, in the routine of mechanical appliances to ships of war. The English, being a mechanical people, may eventually regain their superiority on a new common field, but again she is disconcerted that it is yet at a distance arising from the change. The plated ships *Warrior*, the *Minotaur*, the *Northumberland*, and others sally forth gradually from their building yards. No doubt various obstacles oppose the rapid development of the new system: I do not allude to money, for in spite of the enormous expense, the country is resigned beforehand to any sacrifice to recover its position on the sea. If their wooden walls have done their work, recourse must be had to those of iron to preserve maritime supremacy. What rather delays the progress of reconstructing the British fleet is what everywhere checks the ardour of a government. Discoveries and inventions succeed each other with such marvellous rapidity, that in the midst of such changes the mind is apt to wander from one thing to another. What to adopt, what to reject. The mere chimeras of yesterday become the realities of to-day, and perhaps the rejected of to-morrow. How is a country's armament to be hazarded on such or such a system, when perhaps in a few months the same expense may have to be incurred for a more efficacious one. To say nothing of vessels, there is a perpetual strife between the power of the gun, and that of the armour to resist it, and day by day this same resisting power of armour has to be doubled to meet the increasing force of projectiles. The desideratum to be attained is a ship that shall be *invulnerable*, and free from taking fire; and no sooner is such a boon supposed to be attained than all vanishes under the test of experience; who cannot but perceive that such a state of things must have often embarrassed the Lords of the Admiralty. No doubt a strong mind will triumph over obstacles, but that importurbable resolution, how is it to be found among men when they are, for the most part, strangers to the navy, at a council whose responsibility vanishes every moment behind that of the minister. Should the day ever come when England demands an account of the proceedings of the Admiralty, who shall be their accusers, the Lords of yesterday, or those of to-day? An impenetrable veil ever covers their doings.

The majorities of committees is in England the spirit of routine. In these bodies is it not the same class of society which, under different conditions, manages from one generation to another the reins of government. In times of peace the nation allows it: it waits its day, quite satisfied at some opportunity of seizing a crisis in affairs. A war comes, and public opinion awakes as from a dream, clamours imperatively for reform. Such was the case in 1854, when the Crimean campaign shewed the requirements of the English army. And will it not be the same with the navy? Is a war with America necessary to awaken the energies of the Administration of Great Britain? The egotism of barbarous ages does not please the great founder of nations; it banishes social relations, the relative conditions of states is its last place for refuge, and here it accords ill with the progress of civilization.

What kind of patriotism would that be which in these days rejoices over the maritime decadence of neighbours? Every nation of the world has a right to be strong in the presence of strong nations, and lessens the chances of war, by curbing the foolish temptations of ambition. Certainly England is by no means in so reduced a condition as to encourage, by her neglect or weakness at sea, the enterprise of a rival. The resources of England are perhaps greater now than ever, and her seamen have not yet degenerated. The spirit of adventure and enterprize of the merchant seamen of the United Kingdom is as evident as ever. What is it that it has failed in of late,—a leader and a power responsible for deeds? Again, that I may not be misunderstood,—No one here wishes for change in the base of maritime constitution, such as that which has been founded in Great Britain by the efforts of the whole country, and prepared by the naval authorities. The English do not originate, and have no reason for regrets: it is probably from the possession of such a faculty that the various services have preserved their freedom of action. The British navy itself displays self-government. The parties interested in it generally find the means of making themselves understood somehow or other in the state discussions. Who will dare to say that this regime is injurious to the national interests? The English—we know it but too well, had no desire for that centralization, so vaunted of in France, to gain the Battle of Trafalgar. What they have a right to claim beyond ordinary, is a system which, securing the spontaneous concurrence of the numerous elements of which the Royal Navy is composed, shows more clearly who are the men placed at the head of the Administration.

It would be superfluous to point out the different public services which are included in the Admiralty. One of the most interesting undoubtedly is hydrography. From this department proceed the admirable charts, known throughout Europe, and on which are shown with fidelity the smallest sandbanks formed by the ocean along the shores of England, the concealed rocks, the configuration of the islands and outlying banks. Another branch of naval administration attached to the Admiralty is found close by it in Spring Gardens, and that is the Coast-Guard Office.

SALE OF GUANO.

THE following law for the sale of guano has been passed:—Art. 1. The government will not be able for the future to make any new contracts of consignment, nor prorogate the actual ones by the system of advancement or any other means. Art. 2. The guano will be sold in Peru for each and all the nations who consume it. The sale will be made at public auction, fixing anticipated notices during six months for the quantity of guano to be consumed in one year, or two years at the utmost. Art. 3. The government will proceed to make contracts

for the sale of the guano, with the actual consignees for the quantity consumed in their respective markets. Art. 4. These contracts for the selling of the guano will be immediately submitted to the deliberation of Congress, without the approbation of which they will be null and void. Art. 5. The government must attend most strictly to the faithful accomplishment of all the obligations of the nation in favour of the foreign debts. Art. 6. If the government could not raise any funds in accordance with Art. 3, it is authorised to procure them to the sum of four million soles, celebrating the most convenient contracts, same will be submitted to Congress for their final approbation. Given at the House of Deputies in Lima on the 11th day of May, 1867—President Jose Jacinto Ibarra ; Secretary Ambrosio]Becerril ; Secretary Washington La Rosa.

CIVIL LAW AND MARTIAL POWER.

(Concluded from page 323.)

No. V.—Responsibility of Officials, Civil or Military, for every Breach of the Law.

THE doctrines respecting the duty of a government in the suppression of a rebellion are summed up in their fulness in the words of two of our greatest judges on the occasion of the Gordon riots of 1780. It will be remembered that the Houses of Parliament were surrounded and the members attacked ; the Bank of England threatened ; arson, murder, and rebellion in full career ; and London, it was said, within twelve hours of being reduced to a heap of ashes. It was an insurrection rather than a riot, and was only suppressed by a vigorous use of the military force. Even this seemed to the watchful constitutionalists of that time a doubtful legality, though no man had questioned its obvious expediency. In his great speech in the House of Lords in defence of the government, to which I have referred, Lord Mansfield said (Lords, June 19, 1780 ; 21 Hansard, 694) :—

“ The persons who assisted in the suppression of those riots and tumults, in contemplation of law, are to be considered as mere private individuals, acting according to law, and upon any abuse of the legal power with which they were invested, are amenable to the laws of their country. For instance, supposing a soldier, or any other military person, who acted in the course of the late riots, had exceeded the powers with which he was invested, I have not a single doubt that he is liable to be tried and punished, not by martial law, but by the common and statute law of the realm ; consequently, the false idea that we are living under a military government, or that the military have any more power or other power, since the commencement of the riots, is the point which I rise to refute, and on that ground to remove those idle and ill-founded apprehensions, *that any part of the*

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laws or the constitution are either suspended or have been dispensed with."

The speech of Lord Mansfield was adopted by Lord Thurlow, then Chancellor, as the fullest and most accurate statement of the law which it was possible to express in words; and a few days later, in a subsequent debate in the House of Lords, he said (21 Hansard, 746):—

"Every man had a right to oppose force to force, on that first principle of the law of nature, as well as of the law of the land, self-defence; so the military, when present, individually as private persons, or collectively under military command, if they were insulted or assaulted, had a right to repel the violence and defend themselves. And in doing this the military did nothing but what every man else was warranted by law to do, because the military in every part of their conduct, in such case as he had stated, were bound to obey the law; and, if they exceeded it, were liable to actions of trespass, etc., just the same as any other persons who wore brown coats and were not soldiers. In all cases of high treason, insurrection, and rebellion within the realm, it was the peculiar office of the Crown to use the most effectual means of resisting and quashing such insurrection and rebellion, and punishing the instruments of it. *But the King, any more than the private person, could not supersede the law, nor act contrary to it, and therefore he was bound to take care that the means he used for putting an end to the rebellion and insurrection were legal and constitutional, and the military employed for that purpose were, every one of them, amenable to the law, because no word of command from their particular officer, no direction from the War Office or order of council, could warrant or sanction their acting illegally,* It was his opinion that His Majesty's ministers had done nothing contrary to law by employing the military to quell the late tumults, and that in no case, either of outrage, felony, or *high treason*, were the military authorised *further than the meanest individual subject; all persons of all descriptions being equally amenable to the laws of the land, and answerable to them for their conduct on every occasion.*"

A statement like this by two of the greatest judges in our history passing unchallenged in the chamber which forms the first court of law in the realm may perhaps be regarded as conclusive authority, more especially so far as they limit the rights of the Executive they were engaged in defending. If the public would fix those plain and noble sentences in their mind, we should hear from henceforth but little of the audacious plea that the Crown, or any of its officials, under any circumstances, can lawfully *supersede* law. If any one still thinks the difficulty may be got over if the Crown or its servants simply *declare* that they intend to supersede civil law and to proclaim martial law, I do not care to argue with him. No responsible person will now be found to contend that any suspending power is known to the British constitution, or that the military force possesses, or by any contrivance can acquire, any other duty than that of suppressing open resistance.

There yet remains one conceivable ground of argument, that

unsuccessfully attempted by Erskine in one of his finest addresses, the ground of unexampled and extraordinary circumstances. Paramount necessity, arising from an exceptional crisis, has before now been pleaded in an English court, and the court dealt with it with conspicuous wisdom and dignity. The facts were left as a whole to a jury; they were instructed what facts were adequate "to produce that natural necessity which in a court of law was sufficient to justify crimes." Lord Pigot, being Governor of Madras, and acting, as was admitted, with outrageous illegality and violence, was arrested by his council. For this arbitrary act the council were brought home here, and put on their trial, when they pleaded that their acts, however unauthorised by law, were done *bonâ fide* to preserve a possession of the empire, where the civil arm was feeble, and which was threatened with total subversion. They admitted the breach of law; they asserted that it had saved the State in a totally exceptional crisis. Their plea was held good; but they were sent before a jury of their countrymen to prove the truth of the fact. The judge who tried them said (see State Trials, vol. 21, p. 1046):—

"It is my duty to tell you that the result of our judgement upon the several circumstances stated is, that though they tend to lessen the guilt of what you have done from your intention, motive, and object in doing it, and must certainly weigh in the scale of mitigation; yet the offence of which you are convicted is a grave and serious crime, and of most dangerous example, and so must be deemed in consequence of the verdict itself. You are not convicted of a formal transgression of law, but upon the merits of its justification, though it would be very difficult to define what would be a legal justification of your acts; yet the jury was not told that in strictness of law you could not in any event be justified, but the occasion, with all its facts and circumstances, was left to their consideration. They were told what was necessary to produce that natural necessity which in a court of law was sufficient to justify crimes and wrongs. If they found analogous circumstances to concur in your case in forming that crisis which you insisted on as a justification, they might venture to acquit you; and though some observations were made to show that the analogy did not exist in the present case, yet the whole case was left to the jury with great latitude. Your case, therefore, is not like that of magistrates convicted through having mistaken the forms of law. No forms of law could warrant your seizing the governor and assuming the government. Though it is fit, therefore, that we should bear in mind that fundamental rule of criminal judicature that the measure of punishment should be in proportion to the malignity appearing in the intention of the offender, it is not the less necessary that we should have a view to example, *that others may learn how dangerous it is, even in a case attended with many favourable circumstances, for men arbitrarily to assume powers inconsistent with the nature of that government with which they are entrusted.*"

Words these which unite political sagacity with unswerving justice. The law is no pedant that it cannot admit and recognise in this world,

and especially in such an empire as ours, paramount necessity and abnormal circumstances. But the law will not be trifled with. It must be a real necessity, strictly proven to the conscience of twelve honourable Englishmen. Where a ruler commits a crime and pleads necessity, he must prove that his conduct is utterly untainted, that it was the sole course open to a wise man, and he must prove this rigidly to satisfy a jury. If he cannot do this, whatever the motive, whatever the effect of his conduct, the highest interests of the State require that his crimes be formally condemned, though his punishment may not be extreme. And are we to be told now that our empire is unsafe unless this doctrine of responsible rule is relaxed? Or rather, can our empire in any great and moral sense be safe, unless that doctrine is maintained? But at least if it need to be relaxed, let it be by enactment of Parliament, and not by crafty glosing of the pondered teachings of our forefathers.

As I go over the decisions by which those doctrines were built up, I am struck with the way in which the greatness of the principles at stake obscures the parties involved. To Lord Mansfield and his age the insignificant character of the accuser mattered as little as the splendid services of the accused. When a civilian had been flogged by court martial, he did not ask if plaintiff was an insubordinate carpenter, or defendant a gallant officer; he saw only the outrage upon justice. When the gallant Picton was tried and condemned by a jury for hastily ordering that some petty torture (supposed to be legal) be inflicted on a Mulatto girl of Trinidad, the trifling injury to the victim was thought nothing to the injury endured by the insulted law; and the honour even of a hero weighed but little in the balance with the honour of England.* I purposely omit one melancholy case.†

Often have governors been tried here for crimes done in their provinces.‡ Often the occasion has been trivial. The principle involved has always been vast. If it were not so—if expediency, sentiment, party, are to govern our lawless and shifting principles of empire—that empire would shortly become what is pictured by Lord Mansfield in the splendid words of his judgement in the case "*Fabrigas v. Mostyn*." Mr. Mostyn was Governor of Minorca, from which he had summarily expelled Mr. Fabrigas, on the ground that he was actively exciting mutiny amongst the troops and sedition in the island. The Governor justified his expulsion on the plea that the island was a military post; that its civil law was in no settled or recognised state, and on paramount necessity of protecting the colony from a traitorous conspiracy. When he pleaded his right under such a crisis to protect the possessions of the Crown by all means under his

* XXX. State Trials, p. 225.

† XXVIII. State Trials, p. 51.

‡ See Loom's Constitutional Law, p. 638. Notes to Hill v. Bigge. See also 42 Geo. III. c. 85, extending 11 and 12 Will. III. c. 12, and enacting that if any person in the service of the Crown out of Great Britain, shall be guilty of any crime, misdemeanour, or offence, in such employment, he shall be liable to prosecution in the Court of King's Bench in England.

royal authority, Lord Mansfield thus spoke, nor will I believe that any judge upon the bench would unsay these memorable words (*State Trials*, vol. xx., p. 232):—

“To make questions upon matters of settled law, where there have been a number of actions determined which it never entered into a man’s head to dispute—to lay down in an English court of justice such monstrous propositions as that a governor acting by virtue of letters patent under the great seal can do what he pleases; that he is accountable only to God and his own conscience—and to maintain here that every governor in every place can act absolutely; that he may spoil, plunder, affect their bodies and their liberty, and is accountable to nobody—is a doctrine not to be maintained; for if he be not accountable in this court he is accountable nowhere. How can the arguments be supported, that in an empire so extended as this, every Governor in every colony and every province belonging to the Crown of Great Britain, shall be absolutely despotic, and can no more be called in question than the King of France? And this after there have been multitudes of actions in all our memories against governors; and nobody has been ingenious enough to whisper them that they were not amenable.”

No. VI.—The Duty of Insisting on the Maintenance of Law.

I have hitherto attempted to show, that in the recent events in Jamaica gross breaches of law were committed by the Government. I will now try to point out how essential it is to this nation that those breaches of law should not pass without condemnation. Many persons have at length been brought to admit that crimes have been done which are without legal mitigation. The gist of the matter now lies in their belief, that these crimes are so venial in themselves, and so eminently useful in their results, that it is wiser to bury them in oblivion. One word to this party which claims to be that of conspicuous good sense.

In the first place, let us take the measure of these crimes, and compare them with those which were accounted momentous in former times. If the authorities I have cited hold good, it follows that a series of principles upon public rights have been carefully built up in the course of generations, every one of which was violated in the execution of Gordon. I have shown how martial law is unknown to our system, and is solemnly condemned in the *Petition of Right*. Notwithstanding this, it has been exerted on a terrific scale in the exact manner in which that statute condemns it. I have shown how the Chancellor, in one of the most memorable debates in our history, formally denied, in the name of the Executive, the power of suspending or superseding law, and a series of judges have repeated his words. On the other hand, servants of the Crown have now openly claimed and enforced this privilege in its name. I have shown that no civilian can, on any pretence whatever, be tried by court martial, or punished by martial law. Yet by courts martial and martial law they

put to death 439 civilians, and amongst them one who had never been near the scene of action. It has been proved that, on no provocation may soldiers attempt to try even a prisoner of war for a civil crime. But Gordon was charged before soldiers with the most artificial and complex of all civil crimes—high treason and conspiracy. It is settled that deliberate injustice, even in a properly constituted tribunal, will form a punishable offence. Now the case of Gordon shows one long series of acts of wrong, from his personal arrest by the Governor, down to the brutalities which accompanied his slaughter. Malice has been held to turn a sentence strictly in form into murder. And malice is here charged in addition to every illegality. It has been shown that no state of things whatever can give to soldiers the right of dealing with questions of State. Yet here soldiers usurped the duties of government for months. It has been shown that the slaughter of citizens, even in times of civil war, is murder, unless it be done in actual conflict. Yet here the official slaughter only began when all actual conflict was over. It is a plain outrage upon law to lay hands on the most notorious criminal who is once within its shield. But here this outrage was committed against one who was only suspected. In a word, a citizen living as completely within the pale of civil law as if he had been living in London, who had never forfeited his purely civil character, or done one violent act, was arrested and transported, in defiance of law, out of the pale of law; brought before men who had less right to try him than three constables, upon a charge which they had no more right to try than the charge of heresy; convicted upon evidence which in this country would expose those who offered it to punishment; sentenced in a spirit which would have made the sentence even of a lawful tribunal a crime; and brutally put to death upon a showing which in an English court would not have supported a committal for misdemeanour.

English history, from Magna Charta to this day, can show no case of accumulated violation of law by rulers so enormous as this—short of acts of real assassination. Such is the measure of this crime. Let us now consider what it is we do when we deliberately give it our sanction; and we do sanction it if, when we are challenged, we refuse to condemn. This sanction will affect, first, our own civil rights; secondly, our whole Colonial Empire; thirdly, the West Indies specially. In regard to the last, the truly gloomy aspect of this case is the fact that these events appear to be fatally chronic. Open any fair history, any history of the colonies, and turn from the index to the titles Jamaica, Demerara, Barbadoes, you will find a perennial account of massacres almost identical in incidents with this last. I have said hitherto nothing about the negroes; but it is not that they are forgotten: the oft-recurring tale of insurrection is too frightfully reiterated ever to pass from the memory of humanity. It is a tale of wonderful sameness—one unbroken weary round of horror. A riot; much agitation; a good deal of plunder; a little bloodshed: then an ominous pause. Soon an organized reign of terror by the planters, martial law, burnings, floggings, torturings, and indiscriminate

massacre of an unresisting and cowering people, protracted for months, until the very executioners become exhausted. Afterwards a murmur of indignation at home, defiance from the planter interest, a craven Government, and public apathy. Such is the British rule in the West Indies.

I cite one example, from Demerara in 1823. "The rising took place on the 18th of August. On the 19th martial law was proclaimed. On the 20th the insurrection was completely over. *While no white was sacrificed*, above two hundred negroes were killed and wounded in the first instance; forty-seven were executed; and the floggings of many more were worse than death—a thousand lashes being a frequent sentence."* Such is African ferocity and European justice. Open any history of the colonies, even those in the planter interest, and there is yet worse. Massacres by private persons, and not only by troops; massacres protracted in defiance of the governor's order; rewards offered to savages for black ears; negro prisoners roasted over slow fires; not even hung, but exposed living on a gibbet for a week. Indeed, we know that African slavery has bred in white men a spirit more devilish than any that has ever defiled human nature—cannibalism only excepted. That spirit is yet rampant. It mastered the late Governor. It glares upon us yet, in its resistance to the civil arm, in its defiance to us in the case of the butcher Ramsay. And if the English people deliberately refuse to curb it, and to punish those who fan it when entrusted with the duty of curbing it, their character as an imperial race will be stamped with infamy for ever.

Turn to the effect of this case upon our whole Colonial Empire. That empire is very vast and very composite. There is but one law for it. In principle, in the eye of justice, every citizen within it has equal rights. Civilly we have no classes of citizenship. Every citizen in that empire, black or white, is perilled by the sanction of outrage on any other. We cannot make rules for negroes without baiting them like traps for Europeans. What if the leader of the opposition in an assembly of Canada, or in Australia, had been hung like a dog suspected of madness in a moment of panic? What if a Canadian governor, on the rumour of a Fenian conspiracy, were to seize his most powerful opponent? What if a governor of Melbourne were to cut all difficulties by a month of martial law? Would any colony or settlement be safe? Could Englishmen settle in them in confidence? Whose turn, be it colony or citizen, might not come next? Or if one rule of law must exist on the statute book for all, are Englishmen deliberately resolved so to administer that law as in practice to deprive all dark-skinned men of its protection at the arbitrary discretion of a spirited governor acting under the advice of a class who were lately slaveowners?

Turn now to the effect of these deeds upon England. Our civil rights are matters of principle, which counter precedents can obscurely undermine. It is the most venerated and guarded of our own liberties

* History of the Thirty Years' Peace, Vol. II, p. 338.

which have been openly assailed. English law is of that kind, that, if you play fast and loose with it, it vanishes. It will not abide to be insulted. Defy the principles of liberty under the law, and there will soon be no principles remaining to defy. The contagion of lawlessness spreads fast. What is done in a colony to-day may be done in Ireland to-morrow, and in England hereafter. The very essence of constitutional law is this, that no violation of it in any corner should go unnoticed, or grow into a precedent in the dark, like a poisonous fungus around its roots. We find a great principle of political life in our history ready to our hands. We who thought it had long since played its part may now find in it a fresh use. We invoke it for a new but great duty. We need it no longer for ourselves, but we need it to give to our fellow-citizens without, the blessings and the safety it has given to us. The sacred principles for which the English people once fought and struggled we now invoke for the loftier end of checking the English people themselves from imitating the tyranny they crushed.

The vaunted doctrines of the English constitution and liberty are either real or sham. They have been flagrantly violated, insulted, and impugned. The most formal challenge is now given to vindicate them. On which side will the liberal aristocracy and the sober middle classes of England be found? In what has the power and the moral weight of the great Whig houses resided, if not in their genuine devotion to fixed principles of liberty? Their honour and their existence is bound up in maintaining that virtue unsullied. They cannot live for ever on traditions of Somers and of Russell, whilst careless of the principles for which those men contended. What is the strength of the middle class power, except its ancient attachment to law? Can they think they can be law-abiding here, and lawless there? Blackstone and Hallam are waste paper, if outrages like these are sanctioned. Are the titles of peers written on more enduring pages? Do they expect for ever at home an orderly and law-loving people, whilst defying all order, and right, and law abroad? They who first introduce into the peaceful spirit of political life the method of governing by *coup-d'état* will be also the first to repent, and the first to suffer by it.

Those who take us to complain simply of excessive rigour in fulfilling a necessary duty wholly mistake the true gist of this accusation. We do not question the mode of doing a certain thing; we insist that things were done in themselves abhorrent to our moral sense; nor only that these things were done, but that these things were raised into a system. That system is terrorism. By terrorism we mean the punishment of persons not on proof of crime, but solely that their sufferings may dismay others. We say that this is utterly evil—not in the degree, but in kind. It poisons the whole tone of a government. The least stain of it is infinitely odious. To kill criminals is one thing, though even criminals may be so killed as to constitute a crime. But this is not what we charge. We charge that the innocent were killed, not even to overawe the guilty, but as a warning to all men never in the future to commit particular crimes.

Now Gordon was killed as a "warning"—when the danger was over—when the governor reported that he was safe, and had rejected military aid. This is not severity—it is terrorism.

Terrorism has in it the essence of evil. It is, on the largest scale, and in the worst form, mere political assassination. Every argument against political assassination applies equally to this. Assassination, too, is sometimes called useful. Men who cannot gain their political ends by law, and who try to gain them by the crime of murder, are called political assassins. Their motives weigh little with us. Revolutions do not extinguish their guilt. The most heroic of all these crimes—that of Charlotte Corday—is to us murder. Now the political destruction of opponents, even in a revolution, is more fatal to justice when it is done by a government and by the forms of law. But terrorism, or the punishment of the guiltless, to gain the ends of a government, by overaweing those who meditate resistance, has always covered it with infamy. The suppression of the rebellion by indiscriminate slaughter was not, in Jamaica, stained by the personal ferocity of the followers of Carrier or of Tallien (except in such cases as those of Brand and Ramsay), but the spirit of it was identical with that which arose from the despair, and has sullied the name of the French revolution. It was not suppression; it was not even punishment: it was an organized reign of terror. And Jacobins in those days called it politic.

Let us not forget one other aspect of this matter. For fifty years our armies, ever in the field, have never but once met with an equal foe. Fighting often with savages, generally with rebels and citizens, always with rude enemies, never with Europeans or really organized armies, their task has been chiefly one from which soldiers of honour recoil. It is plain to me—and I say it deliberately, well aware of the responsibility I incur—with all respect for the yet honourable tone of a gallant service, that there are growing up under the constant excitement of these miserable conflicts, indications of a temper which is degrading to the army. Horrible stories come out quietly of deeds in India, in China, in New Zealand. Quite apart from Brand and Ramsay, the official reports from officers in Jamaica breathe a tone throughout of delight in slaughter—sometimes a tone both cowardly and murderous. An army of the highest moral and intellectual training could hardly pass through the ordeal of constant warfare with half-savage and dark races. On the moderately trained officers of our services it is having a blighting effect. The terrible Indian rebellion has sown evil seeds enough in the military as well as in the civil system. It called out all the tiger in our race. That wild beast must be caged again. Whatever was done in India shall be no precedent hereafter. The military ferocity which desperation begot, remorse, honour, and humanity shall repress. There is a higher courage than that of mad despair—cruel, because mad. And civilians with a firm trust in human nature must never cease to confront the spirit of blood in whatever honourable trappings it appear, to insist that the sword of our country shall not be tarnished by a foul breath of licence from

Eastern, and African, and Indian climates, heavy with the agonies of slaughtered prisoners, and the groans of defenceless citizens massacred in unresisting crowds.

And as in the one case the dead Gordon resumes in himself all the acts of wrong which his race endured, and was the victim of the most conspicuous acts of illegality and violence, so the late governor has made himself responsible for the acts of those under his orders, and concentrates in himself the wrong doing of many. Whether he be legally answerable for any criminal act, and particularly for that one act with which he is about to be charged; whether he have a good defence in the nature of the case, or in any technical plea; whether it can be shown that he acted under overwhelming necessity, are matters not for us, not for politicians, not for partisans, but for that judge and that jury who will try one of the most solemn and memorable issues which this nation has ever entrusted to the conscience of their countrymen. On the one hand stands the cause of personal liberty, the inviolability of law, just procedure, official responsibility, equal justice, and ancient precedent. On the other, that of arbitrary rule, military jurisdiction, wild injustice, martial licence, race prejudice, and strange prerogative. Let us see on which side the English public will be.

MASSACRE OF THE PASSENGERS OF THE SHIP *St. Paul*.

Suspected Detention of some Survivors.

THE Board of Trade Marine Department have received the subjoined correspondence from the Colonial Office, relative to the shocking catastrophe which befel the passengers of the British ship *St. Paul*, wrecked as far back as the 30th of September, 1858, on a coral rock off the south-east-end of New Guinea, when 325 of them and several of the crew were horribly massacred. It will be seen by the following that suspicion exists that some of the passengers may be alive, and are kept in custody by the natives:—

“To the Secretary of the Board of Trade,

Downing Street, July 4th, 1866.

“Sir,—I am directed by Mr. Secretary Cardwell to transmit to you, for the information of the Lords of the Committee of Privy Council for Trade, an extract of a despatch from the Governor of Queensland, enclosing a report from Mr. Jardine, the police magistrate at Somerset, containing some interesting details re-pecting the passengers of the ship *St. Paul*, which was wrecked off New Guinea in 1858.—I am, sir, your most obedient servant,

(Signed) “Frederick Roger.”

The following is an extract of a despatch from Sir G. F. Bowen to Mr. Secretary Cardwell, dated Queensland, December 16th, 1865:—

“I take this opportunity of transmitting Mr. Jardine’s further

report, containing very interesting details respecting the two survivors of the passengers of the British ship *St. Paul*, bound from Hong Kong to Sydney, and wrecked on a coral reef near Rossel Island in the Louisiade Archipelago (off the south-east-end of New Guinea) in the year 1858. These men were recently rescued from their captivity among the aborigines, and brought to the new settlement at Cape York. It will be seen that the shipwrecked passengers, exceeding 300 in number, stood on the reef like sheep in a pen, without arms or provisions, and that they were gradually seized, killed, and devoured in small detachments by the cannibals of the neighbouring islands. It is indeed, as Mr. Jardine remarks, a sad and horrible tale, and recalls, I may add, the Homeric description of the adventures of Ulysses and his companions in the cave of Polyphemus, rather than any real precedent in the chequered annals of British navigation. In the opinion of several captains of merchant ships trading in these seas, and of other well-informed persons, it appears more than probable that there are still many shipwrecked seamen detained in captivity by the natives of the islands in Torres Straits and in the neighbouring waters; and that the presence of a small detachment of marines at Port Albany, with the occasional visit of one of her Majesty's ships on the Australian station, is calculated to produce such an impression as will lead ultimately to the rescue of these unfortunate persons from a fate worse than death, and to the better treatment of the sufferers by similar disasters hereafter. I venture to submit that this humane object might also be taken into consideration by the Lords of the Admiralty, together with the general security and convenience of British commerce in this part of the globe, before their lordships finally decide on withdrawing the detachment. However, this is an imperial rather than a colonial question, and it has been fully discussed in my despatch, No. 49, and in the minute of the Executive Council of Queensland, enclosed therein.

(Signed) "G. F. Bowen, Governor of Queensland."

Mr. Jardine, in his report, supplies the following additional facts in connection with the wreck:—"On my late return to Somerset, I found the two Chinese in the care of Captain Edwards, whose vessel was in Port Albany. They are very intelligent, and in appearance are, I think, good specimens of their race. The elder (Paquil) is, I think, about twenty-five years of age, the younger (Sau-tan) about six years his junior. Captain Edwards informed me that while he was at Piron Island with the *Blue Bell*, one of the Chinamen (Paquil) came off in a canoe with some of the natives of the island, and that he stowed himself away on board the schooner. On his being discovered, the captain, by giving two tomahawks and some beads, was allowed by the natives to keep him; and so well pleased were they with the trade they had made that on the next day the other Chinaman was brought off by them, and likewise purchased by Captain Edwards. The two Chinamen have been treated with much kindness by Captain Edwards, in whom they seemed to put perfect trust. They were well clothed, and their condition testified to their

being well fed. They speak English sufficiently to be understood, and give most volubly an account of their shipwreck; of their being attacked by the natives; the departure of the captain and crew in the boat for assistance; the massacre of their companions; illustrating their story by action, and making terribly clear, in pantomime, the horrible details of the slaughter, portioning, and devouring of their friends; their exhaustion from hunger, thirst, and exposure on the bare coral reef, without the slightest shelter, or a weapon of any sort to defend themselves from their ruthless destroyers; their then being taken to an island with one more of their people, and kept there; and, finally, the arrival of the *Styx*, when they were bound and carried away from the shore, the third man escaping wounded to that ship's boat. It is indeed a tale sad and horrible almost beyond belief. The simple facts as I gather them are as follows:—About three moons' sail from Hong Kong, the ship was wrecked in the night-time on a coral reef a short distance to the north of Rossel Island. The crew, consisting of thirteen white men, with the passengers, reached the shore. Little food or water was saved, and the reef afforded none on the second day. The natives of Rossel Island came off in several canoes, and speared and carried off one white man and several Chinamen in their canoes. On the next day the captain of the ship went off in the boat with nine white men, taking all the provisions and water. The two remaining white men died of exhaustion. The natives again came in larger numbers, and killed and carried off nine victims. This was repeated, as far as I understand, for nine days, by which time the whole of the unfortunates not killed and eaten had died of exhaustion. They seem to have stood on the reef like sheep in a pen. The three men saved were carried to Rossel Island, and appear to have been kept in a state of semi-slavery, there made to work in the yam-grounds, etc., but were otherwise treated and fed well. They remained there till the *Styx* arrived, when one escaped to that vessel. The other two were tied hands and feet, and kept inland till the French steamer left. The *Styx* threw shot and shell, and the crew landed and burned down the huts and destroyed the property of the natives."

OVERLADEN AND UNSEAWORTHY SHIPS.

The Loss of the Utopia.

THE loss of a fine ship of 1,000 tons or more, with a valuable cargo on board, is so frequent an occurrence now-a-days, and yet the aggregate of such losses forms so small a per-centage to the enormous value represented by safe voyages, that it ordinarily excites little or no attention, and is looked on almost as a matter of course. Indeed, considering the vast commercial intercourse carried on between these islands and all parts of the habitable globe which border on the sea,

and the many vicissitudes and dangers attending navigation, it would be unreasonable to expect that the case should be otherwise. It is only, therefore, under very special circumstances, and when the interests of humanity are at stake, that we feel in duty bound to call attention to the same.

A fine ship, well manned and well found, with every appliance provided, and every precaution adopted to ensure the safety of the vessel and crew, which a prudent, conscientious, and humane shipowner could devise, might yet be lost, and her crew might perish, from causes which could not be foreseen or provided against—stress of weather and inability to work off a lee-shore, an unknown current, an error in the compass, or a bad look-out at night, might frustrate every precaution and cause the loss of the noblest ship, without the slightest blame attaching to those who owned her.

Unhappily, however, such are not the only causes of loss of ships and lives at sea; and far too many cases occur of vessels being sent to sea that are known to be overloaded or otherwise unseaworthy; thus verifying the Scriptural assertion, that “the love of money is the root of all evil,” and painfully illustrating the melancholy fact, that in this Christian country there are numberless professors of that religion, the highest precept of which, next to the love of God, is abnegation of self and love of others, who frequent its temples and adhere to its ceremonial forms, yet whose hearts are so hardened and minds so poisoned by the love of gold, that the very lives of their fellow-men, and even of their own servants, is a matter of secondary importance to them.

Amongst the fruitful causes of loss of life at sea is that of overloading: and yet it would seem to be one easily preventible, as a safety line of flotation can be readily defined for every ship, and the appointed authorities at every port could readily see that no vessel at the last moment of sailing was immersed below that line.

A case has recently occurred which would seem to imply that, despite the latest legislation for the protection of the lives of British subjects at sea, any unprincipled shipowner or his agent has the power to send, and even to force a well-insured unseaworthy ship to sea, against the judgment and will of her master and crew, to their almost certain destruction.

Such a disgraceful state of things, for the credit of our country and more especially of that of our great and wealthy shipowning community, demands a remedy by searching legislative enactment.

The case we have alluded to is that of the *Utopia*, a ship of 949 tons, which sailed from Liverpool for Bombay on the 10th of March last, and only three days after had to be abandoned by her crew almost at the moment of her foundering. The following statement of the facts of the case we abbreviate from the Report furnished to the Board of Trade by the nautical assessors and stipendiary magistrate who conducted the official inquiry at Liverpool, that was ordered by that Board on the case.

The *Utopia* was built in 1853, and in 1862 she was registered A 1

Red, at LLOYD'S, for five years. She had recently changed ownership, and was now the property of a shipowner resident in London. When loading in the Brunswick Dock at Liverpool for the present voyage to Bombay, it appears that she took the ground, and evidently thereby sustained serious damage by straining, as previously she had scarcely made any water, whilst immediately after that event twenty-eight inches was found in her, and on two subsequent occasions as much as forty inches. By the direction of the owners, she was pumped out by the men employed in stowing her cargo, usually at the expiration of each day's work. During the process of loading she was visited by the agent of Lloyd's Salvage Association at Liverpool, and by one of the surveyors of the Mersey Dock and Harbour Board, which latter gentleman offered his advice and assistance to the owner in the stowage of the cargo, mentioned the limits to which she might be safely immersed—viz., 20 feet 6 inches to 21 feet—and *marked the side at the midship section to show the same*, leaving a clear side of 6 feet 6 inches; little enough, we should say, for a voyage to India, looking to the gales of wind and heavy seas which in voyages of such a distance are sure to be encountered. Nevertheless, before leaving the Brunswick Dock, on the 7th March, she was loaded until she was immersed six inches deeper than had been marked as her safe load line, and afterwards, in the Wellington Dock, had 120 tons of coke put on board.

The master, Captain LEAN, then, not liking the position of affairs, and finding that his remonstrances with the owner in regard to the equipment of the vessel for so long a voyage were unattended to, threw up his appointment. On the same day she had been surveyed by the Surveyor to the Liverpool Underwriters' Association, who found she had only five feet of her sides above the water, and was still taking in cargo. He in consequence called in another surveyor, who agreed with him in considering her much overladen, and they so informed Captain LEAN, and subsequently reported it to the Secretary of their Association; but there being no insurance effected in Liverpool, no action was taken. Nevertheless, he again visited her on the 9th, when she appeared to him not to have more than four feet of clear side, and his final report was, that she was scarcely seaworthy, and that he would not like even to cross to Dublin in her in a strong S.W. gale. Yet the owner of this ship felt no hesitation in sending her and her human freight on a voyage to a distant land, during the greater part of which they would be beyond the reach of aid in the only too probable event of foundering at sea.

On the recommendation of a Liverpool agent, Captain J. Dickie was now appointed to the command; but on proceeding on board on the 9th, he naturally enough did not like the appearance of things any more than his predecessor; but in the words of the Nautical Assessors in their Report, "An extraordinary and most unwarrantable pressure was then put upon him to compel him to go to sea, in the shape of a letter written by a ship-broker at Liverpool, and signed by the agent, as follows:—

‘ *Liverpool, March 8th.*

‘ DEAR SIR,—I am very much surprised to hear that you are making difficulties about going in the *Utopia*; and I must inform you that, if after I have recommended you to the owner, you do not go in the vessel, I will take care you never get any employment in a ship out of Liverpool, if I have any power to prevent you, as I will not put up with this sort of work.

‘ Yours truly,

‘ *Captain Dickie.*’

‘ * * * * *

A precious epistle this, to be sure! Virtually ordering a man into his grave, and, in the language of honest indignation and offended dignity, threatening him with deprivation of his bread for his contumacy in hesitating to step into it.

And can it be that Liverpool shipowners, at the instigation of a shipping agent, would refuse employment to a British seaman for thus declining to deliberately drown himself and seventeen men? Are they not Englishmen, and, for the most part, nominally at least, Christians, if not Christian gentlemen?

We cannot believe that they would do so; nor can we think that there is any specially demoralizing influence in the business of ship-owning, which should so harden a man’s heart as thus to steel it against the common dictates of humanity.

To proceed, however, with our narrative. On the following morning, the 10th March, a Sunday morning, too, when respectable people at Liverpool were all preparing for the public devotions of the day, the “two shipmasters met the owner and his agents, Messrs. * * * and * * * , and the pilot on the landing-stage, with the crew who had been shipped, to the number of seventeen, including six able seamen only, a crew evidently insufficient in number for a full-rigged ship of her size, according to the evidence of several competent witnesses. The riggers had been at work at the pumps in the morning, but had desisted before the crew went on board, not because there was no more water to pump out, but lest, apparently, the latter should get alarmed, and decline to proceed to sea in the ship.”

The pilot, who had expressed his opinion that the vessel was overladen, was asked by the court why he, nevertheless, took her to sea, to the imminent risk of ship and cargo and of eighteen lives? He replied that he was under a penalty to his own boat to undertake the duty, and that had he not done so he would have had to pay it himself.

And thus, bursting, as it were, through every barrier that should have stood between herself and her destruction, heeding not captains, or surveyors, or pilots, but seemingly impelled by some malignant spirit, the *Utopia*, overladen, undermanned, leaky, and ill-found in her equipment, was towed to sea to pursue her hopeless voyage.

Upon the tug leaving, sail was made, the wind being fair, and weather moderate; but so ill-found was the cordage and rope generally, that the topsail halliards had to be unrove to cat and fish the anchor.

Scarcely had they shaped their course when the well was sounded, when three feet three inches of water was found in the hold ; some hands were therefore at once placed at the pumps, which from that time were more or less continuously worked. Nevertheless, the water gradually increased, there being on the 11th at eight a.m. four feet ten inches, which was the last correct sounding that could be got, as the pumps became then choked with sand.

During the 12th and 13th the ship was observed to be settling gradually and the wind and sea increasing, the master thought it best to run for Cork, but she had now become unmanageable ; and at four p.m. on the 13th, there being then only four or five inches from the covering board to the water's edge, and the ship settling down rapidly, the long boat was hoisted out. All hands were speedily got into it—the master being the last to leave the ship ; and scarcely had they got clear of her, when she gave a plunge, and went down head foremost.

Happily the weather was fine, and not having proceeded so far to sea as to be beyond the beaten track of ships, they were picked up on the same evening by a barque, and were all safely landed on the 16th at Crookhaven.

Sad, indeed, are the reflections which the foregoing narrative is calculated to awaken ! Whether with reference to the immediate object with which we are specially concerned, “ the protection of life at sea,” or to the fair fame of our country, as claiming one of the highest places in the scale of civilized nations ; or to the hope of the philanthropist, the progress of human nature itself towards something better and nobler than the past or the present, who can contemplate, without discouragement and misgiving, such a sad example of, we fear, a very prevalent evil ? An evil not enacted in a corner, but unblushingly in the light of day ; not perpetrated by men from the lowest dregs of society, nurtured in poverty, ignorance, and crime ; by members of a class deemed highly respectable, members of our great mercantile community—shipowners and their agents ; and being done thus fearlessly and openly ; also done, we fear, without their “ losing caste,” amongst their fellows.

Is it not then, time, if we wish to retain our high place in the world, not only as a great and powerful nation, and the first commercial and maritime power, but as a conscientious and Christian people, setting a higher value on human life than on gold and silver ; is it not time that we so enforce our existing laws, or so amend our maritime code, if necessary, as to make the occurrence of so great a scandal an impossible thing amongst us ?

But, indeed, we may take up higher ground still ; for in the case of nations, as of individuals, there is a higher than any human tribunal before which national as well as individual acts shall be judged ; and if the lives of these eighteen human beings had been sacrificed at the shrine of Mammon—which was so nearly being done—would not their blood have cried aloud to heaven for vengeance, not only on those who could perpetrate so great a crime, but on the community which apathetically suffered such things to be done amongst them ?

But, it may be asked, with our enormous trade, how can this discreditable state of things be remedied? We have, in the present melancholy case, a forcible illustration of the fact, that overladen, ill-found, unseaworthy ships can, in one of our greatest maritime ports, proceed to sea on a distant voyage, and that all the constituted authorities of the place are powerless to prevent her doing so. We reply, then give the present constituted authorities such power, or constitute a new authority to be clothed with it.

In the first place, we would suggest that at every port in the United Kingdom, large or small, an officer in connection with the Customs, or Coastguard, or Local Marine Board, or Shipping Office, should periodically, in the case of vessels in the home trade (say half-yearly), and before sailing on each voyage, in the case of ships in the foreign trade, inspect, personally or by deputy, every vessel and her equipment, receiving replies to printed queries, signed by the master, in each case, and giving him in return a permit to sail. The cost of such supervision might be paid in the shape of a small fee on every permit issued, to be paid at the time of issue by the master; or it might be paid from the Mercantile Marine Fund, if there is a sufficient annual amount available for the purpose. At the same time it should be punishable, as a misdemeanour, for the master of any vessel to sail without having received such a certificate; and as felony for him to give false information in reply to the established queries, as to the state of his vessel, and her equipment, etc.

In the second place, to prevent the overlading of any vessel, which is so frequent a cause of unseaworthiness, it should be required that every vessel should have visibly painted on each side a thin white line, showing the level to which she might be safely loaded, and below which it should be illegal to immerse her. Such a line would not be a disfigurement to any ship, whilst, being visible to every one, the authorized surveyors could in a moment tell when any vessel was overladen, without having recourse to actual measurement; and, at the same time, it would be a source of confidence to the passengers and crew in every vessel, and would be a perpetual witness in every part of the world frequented by our ships of the watchful care of the British Government and people for the lives and welfare of the seamen and passengers who work or sail on board them.

We have purposely withheld the names of all the parties implicated in this flagrant transaction, our object not being to expose individuals in a single case, but to draw attention to a crying evil, and so far to aid in its remedy. In the Official Report, however, from which we have taken the details of the case, and which was published in the *Times* newspaper, the names of the several parties are given.

[The foregoing is a good illustration of the manner in which a portion of our boasted mercantile shipping is sailed—the system which can be adopted by unprincipled owners in this country, of forcing their ill found leaky ships to sea. The *Utopia* had not even cat and fish falls for her anchor, but was obliged actually to unreeve

her topsail halliards, and use them as a substitute. What other absolutely necessary stores there were not, or of which she was deficient, may be inferred from that fact. Of what use were the surveys held upon her and reports made, when there was no one to act upon them? The captain wisely refuses to go to sea in her, because she is so deeply laden as to be dangerous; and another is found by a *Liverpool shipbroker*, which latter captain for certain reasons no doubt (notwithstanding he too would give her up), takes her command, after a peremptory reminder from that very considerate gentleman, the broker, who says, "I will not put up with this sort of work," and takes it with about the same calculation as that with which a man would take what was a fair promise of being his death warrant by drowning. Did this considerate broker ever expect to see his gracious document shewn up in the *Times* newspaper? No doubt he did not: with the name of its author too! But there it stands, an imperishable record of the tyranny of our nature, the total absence of all honesty of principle in man for the sake of making money, and of the rottenness of our system in the management of our monster mercantile fleet. We lately quoted a case of purposely scuttling in the *Severn*, many more of which have not yet been brought to light; and here we have a case of wilful destruction just as bad, one being done near the Equator, while the other is done in the light of day at Liverpool!

Was that gentleman, who threatened the captain of the *Utopia* with never taking another ship out of Liverpool, aware that she leaked so much that she was obliged to be pumped out every day while being *overloaded*: that the day she was about to sail the pumping her out was intermitted, lest the crew might take alarm at such a state of things, in a ship they had just embarked in and on the point of sailing?—which ship ought to have been tight and seaworthy? But what cared he for that? his point was gained; and he had got a captain for the craft, leaky or not leaky! Who has not heard of the glorious uncertainty of the law? but what is that to the miserable uncertainty of the British merchant ship; whether she is sailed on honest or dishonest principles! Then we are not told the tonnage of the *Utopia* but the crew of seventeen, including only *six* able seamen, and possibly made up (by law) of two-thirds foreigners, who soon have to work at the pumps, after she has found her way to sea with the assistance of the topsail halliards to cat and fish her anchor!

And what becomes of the *Utopia*? Her leaky condition increases, the miserable pump work cannot keep her free, and she founders!!! Happily in the track of other ships, by which her captain and crew were saved; and it may be reasonably expected that no one loses on that account, for the Insurance Office is quite ready to meet all reasonable demands! And if the captain and the crew should lose their kit, what matters that, for they are of no consequence.

Can we wonder at seamen being reckless who are treated thus—that the whole character of our merchant shipping is degraded by such a system as admits atrocities like these. Is there never to be a

remedy applied to such evils? Who cannot but commend the laudable motives with which enquiries into the losses of our merchant ships were instituted, that mass of annually increasing, wicked enormities, that have long existed; but are they not to be stopped, or is the measure of those that have been thus brought to light not yet full? Surely for the correction of some of those evils, say starving the ship, overlading as in this case, and that of the *Severn* and the *London*, aye and hundreds more, are not these sufficient for nipping these wretched evils? If not, all we can say is, we are sorry for it— if our disgraces must be multiplied let them continue, but the sooner their measure is filled the better will it be for British seamen, and the safety of England, and the character of her merchant shipping.]

A GLANCE AT GENOA.

I TOOK my note book with me on the journey which brought me to Genoa, and pledged myself to make my notes in it. And indeed I did really something of the kind, though the result of my labour is by no means so voluminous as I would like it to be now, when the work of wishing there were more notes is so easy. We spent but one day in Genoa, and I find such a marvellous succinct record of this in my book, that I am tempted to give it here after the fashion of that historical Heavyweight who writes the *Life of Frederick the Great*.

Genoa, Nov. 13.—Breakfast *a la fourchette* excellently and cheaply. I buy a hat. We go to seek the consul, and, after finding every thing else for two hours, we find him. Genoa is the most magnificent city I ever saw; and the monument to Columbus about the weakest possible monument. Walked through the city with consul; Doge's palace; cathedral; girl turning somersaults in the streets; blind madman on the cathedral steps. We leave for Naples at twelve at night.

As for the breakfast, it was taken at one of the many good *cafés* in Genoa, and perhaps some statistician will like to know that for a beef steak and potatoes, with a half bottle of Ligurian wine, we paid a franc. For this money we had also the society of an unoccupied waiter, who leaned against a marble column and looked on with that gentle, half compassionate interest in our appetites which seems native to the tribe of waiters. A slight dash of surprise is in his professional manner, and there is a professional smile on the solemn professional countenance, which is perhaps prompted by a too intimate knowledge of the mysteries of the kitchen and the habits of the cook. The man who passes his life among beef steaks cannot be expected to like them, or to regard without wonder the avidity with which others devour them. I imagine that service in restaurants must beget simple and natural taste in eating, and that the jaded men who minister them to our pampered appetites demand only for themselves—

“A scrip with herbs and fruits supplied ;
And water from the spring.”

Turning from this thought to the purchase of my hat, I do not believe that literary art can interest the reader in that purely personal transaction, though I have no doubt that a great deal might be said about buying hats as a principle. I prefer to pass to our search for the consul.

A former consul at some place whom I know, has told me a good many stories about the pieces of popular mind which he received at different times from the travelling public, in reproof of his difficulty of discovery. And I think it must be one of the most jealously guarded rights of American citizens in foreign lands to declare the national representative house to find, if there is no other complaint to lodge against him. It seems to be in a peculiar degree a quality of consulship at that place to be found remote and inaccessible. My friend says, that even at New York, before setting out for his post, when enquiring into the history of his predecessors, he heard that they were one and all hard to find. And he relates that on the steamer going over, there was a low fellow who set the table in a roar of laughter by a vulgar anecdote to this effect :

“There was once a consul at —, who indicated his office hours by the legend on his door, ‘In from ten to one.’ An old ship captain, who kept coming for about a week without finding the consul, at last furiously wrote in terms of anger under this legend, ‘Ten to one you’re out !’”

My friend also states, that one day a visitor of his remarked, “I’m rather surprised to find you in. As a general rule, I never do find consuls in.” Habitually his fellow countrymen entertained him with accounts of their misadventures in reaching him. It was useless to represent that his house was in the most convenient locality, where indeed no stranger can walk twenty rods from his hotel without losing himself; that their guide was an ass, or their courier a rogue. They listened to him politely, but they never pardoned him in the least; and neither will I forgive the consul at Genoa. I had no earthly consular business with him, but a private favour to ask. It was Sunday, and I could not reasonably expect to find him at his office; or any body to tell me where he lived. But I have seldom had so keen a sense of personal wrong and national neglect as in my search for that consul’s house.

In Italy there is no species of fact with which any human being you meet will not pretend to have perfect acquaintance, and of course the driver, whose fiacre we took, professed himself a complete guide to the consul’s whereabouts, and took us successively to the residences of the consuls of all the South American republics. It occurred to me that it might be well to enquire of these officials where their colleague was to be found: but it is true, that not one consul of them was at home. Their doors were opened by vacant old women, in whom a vague intelligence feebly guttered, like the wick of an expiring candle, and who after feigning to throw floods of light on the object of my search, successively flickered out and left me in total darkness.

Till that day, I never knew of what a lofty flight of stairs were capable. As out of doors in Genoa it is either all up or down hill, so in doors it is all either up or down stairs. Ascending and descending in one place after another those infinite marble steps, it became a question not solved to this hour, whether it was worse to ascend or descend:—each ordeal in its turn seemed so much more terrible than the other.

At last I resolved to come to an understanding with the driver, and I spent what little breath I had left.—it was dry and hot as the Simoon,—in blowing up that infamous man. “You are a great driver.” I said, “not to know your own city; what are you good for if you cannot take a foreigner to his consul’s?” “Signore,” answered the driver patiently, “You would have to get a book in two volumes by heart, in order to be able to find every body in Genoa. This city is a labyrinth.”

Truly it had so proved, and I could scarcely believe in my good luck, when I actually found my friend and set out with him on a ramble through its toils. A very great number of the streets in Genoa are footways merely, and these are as narrow, as dark, as full of jutting chimney places, balconies and open window shutters, and as picturesque as the little alleys in Venice. They wander at will around the bases of the gloomy old stone palaces, and seem to have a vagabond fondness for creeping down to the port and losing themselves there in a certain cavernous arcade, which curves round the water with inflection of the shore, and makes itself a twilight at noon day. Under it are clangorous shops of blacksmiths and sizzling shops of marine cooks, and looking down its dim perspective, one beholds chiefly sea-legs coming and going more or less affected by strong waters; and as the faces to which these sea-legs belong draw near, one discerns sailors from all parts of the world:—tawny men from Sicily and Norway, as diverse in their tawnyness as olive and train oil. Sharp faces from Nantucket and the Piræus, likewise mightily different in their sharpness;—blond Germans and blond Englishmen;—and now and then a coloured brother, also in the sea-faring line, with sea-legs also, more or less affected with strong waters like the rest.

What curious people are these sea-farers. They coast the whole world, and know nothing of it, being more ignorant and helpless than children on shore. I spoke with the Yankee mate of a ship one day at Venice, and asked how he liked the city.

Well, he had not been ashore yet.

He was told that he had better go ashore, that the Piazza San Mario was worth seeing.

Well, he knew it; he had pictures of it; but he guessed he wouldn’t go ashore.

Well, he laid to go ashore the next time he came to Venice.

And so bless his honest soul; he lay three weeks at Venice, with his ship after a voyage of two months, and he sailed away without ever setting a foot on that enchanted ground. I should have liked to stop some of those sea-farers to ask them, what they thought of Genoa.

It must have been in the little streets impassable for horses that the people sat and talked, as Heine fabled, in their doorways, and touched knees with the people sitting on the thresholds of the opposite side. But we saw no gossipers there on our Sunday in Genoa; and I think the domestic race of Heine's day no longer lives in Genoa. For every body we saw in the streets was gaily dressed in their idea of the last fashions, and was to be met chiefly in the public promenades. The fashions were French: but here still lingers the lovely phantom of the old nation and costume of Genoa, and snow white veils fluttered from many a dark head, and caressed many an olive cheek. It is the kindest and most charitable of attire, this white veil: and while decking beauty to the most perilous effect, befriends and modifies age and ugliness.

The pleasure with which I look at the splendour of an Italian crowd in winter, is always touched with melancholy. I know that at the time of its noon day promenade, it has nothing but a cup of coffee in its stomach; that it has emerged from a house as cold, and of light dim as a cellar; and that it will presently go home to dine on rice and boiled beef. I know that chilblains secretly gnaw the hands inside of its kid gloves, and I see in the soreness of its faces the anguish of winter, long suffering from cold. But I also look at many in this crowd with the eye of the economist and wonder how people practising so great self-denial as they, can contrive to make so much display on their little means:—How those clerks of public offices, who have rarely an income of five hundred dollars a year, can dress with such peerless gorgeousness. I suppose the national instinct teaches them ways and means unknown to us. The passion for dress is universal; the men are as fond of it as the women; and happily clothes are comparatively cheap. It is no great harm in itself this display; it is only a pity that there is often nothing or worse than nothing under the shining surface.

We walked with the brilliant Genoese crowd upon the hill where the public promenade overlooks a landscape of city and country, houses and gardens, vines and olives, which it makes the heart ache to behold it is so faultlessly beautiful. Behind us the fountain "was shaking its loosened silver in the sun," the birds were singing; and there were innumerable fair girls going about whom one might have made romances if one had not known better. Our friend pointed out to us the "pink jail" in which Dickens lived while at Genoa, and shewed us on the brow of a distant upland the villa called *Il Paradiso*, which Byron had occupied. I dare say this Genoese joke is already in print—that the devil re-entered Paradise when Byron took this villa. Though in loveliest Italy, one is half persuaded that the devil had never left Paradise.

After lingering a little longer on that delicious height, we turned and went down for a stroll through the city.

My note book says that Genoa is the most magnificent city I ever saw, and I hold by my note book though I hardly know how to prove it. Venice is, and remains, the most beautiful city in the world; but

her ancient rival impresses you with greater splendour. I suppose that the exclusively Renaissance architecture, which Ruskin declares the architecture of pride, lends itself powerfully to this in Genoa. It is here in its best mood and there is little grotesque Renaissance to be seen, though the palaces are as usual, loaded with ornament. The Via Nuova is the chief thoroughfare of the city, and the crowd passes through this avenue between long lines of palaces. Height on height rise the stately sculptured façades, colonnaded, statued, pierced by mighty doorways and lofty windows; and the palaces seem to gain a kind of aristocratic *hauteur* from the fact that there are for most part no sidewalks, and that the carriages rolling insolently through the crowd, threaten constantly to grind the pedestrian up against their carven marble, and imitate him to their stony pride. There is something gracious and gentle in the grandeur of Venice, and much to which the heart loves to cling; but in Genoa no sense of kindness is touched by the magnificence of the city.

It was unspeakable relief, after such a street, to come on a sudden upon the Duomo, one of the few gothic buildings in Genoa, and rest our jaded eyes on that architecture which Heaven seems truly to have put into the thoughts of man together with the Christian faith. Oh beloved beauty of aspiring arches, of slender and clustered columns, of flowering capitals and window traceries, of many carven breadths and heights, wherein all nature breathes and blossoms again! There is neither Greek perfection, nor winning Byzantine languor, nor insolent Renaissance opulence which may compare with this loveliness of yours. Alas, that the interior of this gothic temple of Genoa should abound in the abomination of eococo restoration! They say the dust of St. John the Baptist lies there within a costly shrine; and I wonder that it can sleep in peace amid all that show of bad taste. But the poor saints have to suffer a great deal in Italy.

Outside, in the piazza before the church, there was an idle cruel crowd, amusing itself with the efforts of a blind old man to find the entrance. He had a number of books which he desperately laid down while he ran his helpless hands over the clustered columns, and which he then desperately caught up again, in fear of losing them. At other times he paused, and wildly clasped his hands upon his eyes, or wildly threw up his arms; and then begun to run to and fro again uneasily, while the crowd laughed and jeered. Doubtless a taint of madness afflicted him, but not the less he seemed the type of a blind soul that gropes darkly about through life, to find the doorway of some Divine truth or beauty—touched by the Heavenly harmonies from within, and miserably failing, amid the scornful cries and bitter glee of those who have no will but to mock aspiration.

The girl turning somersaults in another place had far more popular sympathy than the blind madman at the temple door, but she was hardly a more cheerful spectacle. For all her festive spangles and fairy-like brevity of skirts, she had quite a work-a-day look upon her honest blood red face, as if this were business enough though it looked like sport, and her part of the diversion were as practical as

that of the famous captain of the waiters, who gave the act of peeling a sack of potatoes a playful effect by standing on his head. The poor damsel was going over and over to the sound of most dismal drumming and braying in front of the old palace of the Genoese Doges,—a classic building stilted on a rustic base, and quite worthy of Palladio, if anybody thinks that is precise.

There was little left of our day when we had dined; but having seen the outside of Genoa and not hoping to see the inside, we found even this little heavy on our hands, and were glad as the hour drew near when we were to take the steamer for Naples.

It had been one of the noisiest days spent during several years in clamorous Italy, whose voiceful uproar strikes to the summits of her guardian Alps and greets the coming stranger, and whose loud Addio would stun him at parting if he had not meanwhile habituated to the operatic pitch of her every day tones. In Genoa the hotels taking counsel of the vagabond streets stand about the cavernous arcade already mentioned, and all the noise of the shipping reaches their guests. We rose early that Sunday morning to the sound of a fleet unloading cargoes of wrought iron and of the hard swearing of all nations of seafaring men. The whole day long the tumult followed us, and seemed to culminate at last in the screams of a parrot who thought it fine to say, *Piove, Piove, Piove*, it rains, it rains, it rains; and had no doubt a secret interest in some umbrella shop. This unprincipled bird dwelt somewhere in the neighbourhood of the street where you see the awful tablet in the wall devoting to infamy the citizens of the old republic that were false to their country. The sight of that pitiless stone recalls with a thrill the picturesque, unhappy past, with all the wandering, half-benighted efforts of the people to rend their liberty from now a foreign and now a native lord. At best they only knew how to avenge their wrongs; but now, let us hope, they have learnt with all Italy to prevent them. The will was never wanting of old to the Ligurian race, and in this time they have done their full share to establish Italian freedom.

I do not know why it should have been so surprising to hear the boatman who rowed us to the steamer's anchorage speak English; but after his harsh Genoese profanity in getting his boat into open water it was the last thing we expected from him. It had somehow the effect of a furious beast addressing you in your native tongue and telling you it was "wary poorly widdier;" and it made us cling to his good nature with the trembling solicitude of "Little Red Riding Hood" when she begins to have the first faint suspicions of her grandmother. However our boatman was no wild beast but took our six cents of *buonamano* with the base servility of a Christian man, when he had put our luggage into the steamer. I wonder how he should have known us for Americans? He did so know us, and said he had been at New York in better days, when he voyaged upon higher seas than those he now navigated.

On board we watched with compassion an old gentleman in the cabin making a hearty meal of sardines and fruit pie, and I asked him

if he had ever been at sea. "No," he said. I could have wept over that innocent old gentleman's child-like confidence of appetite, and guileless trust of the deep.

We went on deck where one of the gentle beings of our party declared that she would remain as long as Genoa was in sight; and to tell the truth, the scene was worth the promised devotion. There in a half-circle before us, blazed the lights of the quay; above these twinkled the lamps of the steep streets and climbing palaces; over and behind all, hung the darkness on the heights;—a sable cloud dotted with ruddy points of flame burning in the windows of invisible houses.

Merrily did we drop "down the bay," and presently caught the heavy swell of the open sea. The other gentle being of our party then clutched my shoulder with a dreadful shudder, and after gasping, "Oh, Mr. Scribbler, why will the ship roll so?" was meekly hurried below by her sister, who did not return for a last glimpse of Genoa the Grand. In a moment Heaven's sweet pity flapped away as with the sea gull's wings, and I too felt that there was no help for it, and that I must go and lie down in the cabin. With anguished eyes I beheld on the shelf opposite to mine, the innocent old gentleman who had lately supped so confidently on sardines and fruit pie. He lay on his back, groaning softly to himself, "Oh those sardines, that dreadful pie."—*Atlantic Monthly*.

CORRESPONDENCE.

To the Editor of the Nautical Magazine.

Sir,—The Secretary of "Lloyd's Salvage Association" has done me the favour to send me a copy of his "Rule of the Road for Steamers," and without at present entering into an examination of this brief graphic exposition of a most important nautical problem, I wish, without delay, to commend to the careful attention of my brother commanders the valuable remarks in page 10 lines 9—18. I venture to say that in these remarks alone, Mr. Harper has rendered a service to the Maritime interests of the country, apart from the merits of his "Rule" as a contribution to nautical science. W. C. P.

EVILS OF OUR EMIGRANT SERVICE AFLOAT.

June 1st, 1867:

Sir,—The subject of the *treatment and condition of emigrants* proceeding from this country to the Australian colonies, is one of public interest. May I ask for a small space in your journal to suggest a remedy for what has long appeared a disgrace to England? It is well-known that on board some emigrant ships, there have been very grave causes for complaint, sometimes from an insufficiency or

bad quality of provisions, from being short of water, from imperfect ventilation, and sometimes from gross unchecked immorality! I will not occupy your time by citing particular instances, but will proceed at once to the object of this letter.

According to the present system, all government supervision ceases so soon as an emigrant ship quits these shores. What I desire to suggest is simply that at each port in the colonies there be an officer, appointed by the local government, whose duty should be to board every emigrant ship upon her arrival, and muster the passengers before anyone is permitted to land, for the purpose of receiving any statement of well-attested bad treatment, if such has occurred on the passage. In any case where the charge of bad treatment is established, such ship not to be allowed to clear at the Customs until reparation be made to the injured parties. I may mention that I have had some experience in the emigrant service, and am convinced of the necessity of a better system than that which we have. Half the ships that leave England for Australia with emigrants, while looking all right and comfortable in dock cannot be ventilated at sea in rough weather, and we know that the inspection of provisions by the government officer before leaving England is of necessity very imperfect, whether we regard the quality or quantity. I am therefore persuaded that the only effectual remedy for the evils existing in our emigrant service, is the *certainty* of owners and commanders having to make satisfaction to injured parties, on the ship reaching her destination.

When we consider the thousands of our fellow-subjects whose comfort, health, and safety, are involved in this question, I feel, sir, that you will be doing the country generally an essential service, by your advocacy of any measure calculated to effect a better state of things on board emigrant ships employed between England and her Australian, and all other colonies.

W. C. P.

[We commend the foregoing suggestion to the Emigration Department, and are of opinion that not only is the proposal good but that such appointment might be made by the home government—and also that such supervision in the absence of an officer appointed for the purpose, might be a part of the duty of our naval officers abroad until such appointments are made. Many an evil would thus be shewn up and rectified.—*Ed.*]

H.M.S. Britannia, Dartmouth,

June 23rd, 1867.

Dear Sir,—I send a small contribution which supplies a quick and easy way of reducing the Sun's altitude to the Meridian, and may be found useful in those latitudes where cloudy weather prevails, and when it is unwise to rely totally upon the chance of obtaining the Meridian altitude.

TABLE

For the Reduction of the Sun's Altitude to the Meridian at Sea.

M.S.	N.	M.S.	N.	M.S.	N.	M.S.	N.	M.S.	N.	M.S.	N.	M.S.	N.	M.S.	N.	M.S.	N.	M.S.	N.
20	0.1	9.0	2.7	12.0	4.4	15.0	7.4	18.0	10.6	21.0	14.5	24.0	18.9	27.0	24.0	30.0	29.5	33.0	35.7
30	0.3	15	2.8	15	4.9	15	7.6	15	10.9	15	14.8	15	19.3	15	24.4	15	30.0	15	36.3
40	0.5	30	2.9	30	5.1	30	7.9	30	11.2	30	15.2	30	19.7	30	24.5	30	30.5	30	36.8
50	0.8	45	3.1	45	5.3	45	8.1	45	11.5	45	15.5	45	20.1	45	25.3	45	31.0	45	37.4
60	1.1	10.0	3.3	13.0	3.5	16.0	8.4	19.0	11.8	22.0	15.9	25.0	0.5	28.0	125.7	31.0	31.5	34.0	37.9
30	1.4	15	3.4	15	5.7	15	8.7	15	12.1	15	16.2	15	20.9	15	26.2	15	32.0	15	38.5
70	1.6	30	3.6	30	5.9	30	8.9	30	12.5	30	16.6	30	21.3	30	26.6	30	32.5	30	39.1
30	1.8	45	3.8	45	6.2	45	9.2	45	12.8	45	17.0	45	21.7	45	27.1	45	33.1	45	39.6
80	2.1	11.0	4.0	14.0	6.9	17.0	9.5	20.0	13.1	23.0	17.3	26.0	22.2	29.0	27.6	32.0	33.6	35.0	40.2
15	2.2	15	4.1	15	6.6	15	9.8	15	13.4	15	17.7	15	22.6	15	28.1	15	34.1	15	40.7
30	2.4	30	4.3	30	6.9	30	10.1	30	13.8	30	18.1	30	23.0	30	28.6	30	34.6	30	41.3
45	2.5	45	4.5	45	7.1	45	10.3	45	14.1	45	18.5	45	23.5	45	29.0	45	35.2	45	41.9

EXPLANATION.

- (1) For the ship apparent time from Noon, take out N.
- (2) With N. as dist. and latitude as course, find diff. lat. (Traverse Table).
- (3) The distance corresponding to this diff. lat., and the altitude as a course) will be the correction which being added to the observed altitude near Meridian, gives the Meridian altitude.

Examples.

Given app. time from Noon, 20m. 15s., lat. D.R. 50° N., alt. near Meridian 40° 10' : to find the Meridian alt.

- (1) 20m. 15s. gives 13.4 for N.
- (2) 13.4 as dist. and lat. 50° as course, give 8.6. diff. lat.
- (3) 8.6 diff. lat. and alt. 40° as course, give 11.2 dist. This is the correction.*

Hence, as the obs. alt. is .. 40° 10'
and correction + 11

The altitude, reduced to the Meridian, is .. 40 21

The latitude is then found by the ordinary Meridian Altitude Rule.

* Where much accuracy is required, diminish this correction by the following fractional parts of itself :

For Declination ... 0° 8° 12° 14° 16° 18° 20° 22° 24°
Subtract ... 0 1/100 1/100 1/100 1/100 1/100 1/100 1/100 1/100

Thus, to find a true correction in the above examples :—supposing the Declination to be 12° ; 11.2 × 1/100 = 112 × 2 = .2.

Therefore, 11.2 -- .2 or 11 is the true correction.

Believe me, dear sir, yours faithfully,

A. C. J.

NOVELTIES—PAST, PRESENT, AND FUTURE.

LET us take the last first:—the *on dits*, which modestly range themselves in the rear, although they may possibly be realized and entitled to the van in the history of every day events. We will therefore begin our monthly record with the anticipated naval review as the great event for July, to be celebrated, it is said, by the last glimpse of England's wooden walls in their domain of salt water, now that our antiquated castles are to be turned over to the domain of history. We read in the *Hampshire Telegraph*, of Portsmouth celebrity, that:—“The First Lord of the Admiralty has officially notified to the Mayor of Portsmouth that there will be a review of the British fleet off Portsmouth in July next, and it is reported that the days fixed upon will be the 15th, 16th, and 17th of that month.” It also says:—“The ships to be reviewed will, no doubt, consist of the Channel squadron, now under the command of Rear-Admiral F. Warden, in the *Minotaur*, the ships in commission for harbour and coast-guard duty, and all the gunboats that may be available at the time. The magnificent three-decker *Victoria*, which was brought into harbour on Saturday to dismantle and pay out of commission, having completed the term of her service as flag-ship in the Mediterranean, will probably also take part in the review, the order for dismantling and returning stores having been countermanded. She is in splendid condition, and one cannot help regretting that she is the last of the three-deckers which we shall have an opportunity of seeing in commission for active sea service. We believe that the *Valiant*, 18, iron screw-frigate, will also be brought forward for the same purpose. The fleet is expected to assemble at Spithead about the 9th of July. It is understood that this naval spectacle is to be in honour of the visit of the Sultan of Turkey to England, and we believe that it will be conducted on a grand scale.”

THE NAVAL REVIEW AT SPITHEAD.—The following is a copy of official list of the vessels selected by the Admiralty to take part in the great Naval Review to be held off Spithead, on the 17th of July, in honour of the visit of his Majesty the Sultan to England:—

IRONCLAD SQUADRON.

Names.	Guns.	Tonnage.	Horses-Power.	Captain.
Minotaur ..	26 ..	6,621 ..	1,350 ..	Capt. J. G. Goodenough.
Achilles ..	26 ..	6,121 ..	1,250 ..	Capt. E. W. Vansittart.
Lord Clyde ..	23 ..	4,067 ..	1,000 ..	Capt. R. Dew, C.B.
Bellerophon ..	14 ..	4,270 ..	1,000 ..	Capt. E. Tatham.
Warrior ..	32 ..	6,109 ..	1,250 ..	.. ..
Black Prince ..	41 ..	6,109 ..	1,250 ..	Capt. J. Corbett.
Valiant ..	24 ..	4,063 ..	800 ..	.. ..
Pallas ..	6 ..	2,372 ..	600 ..	Capt. M. Connolly.

Names.	Guns.	Tonnage.	Horses-Power.	Captain.
Royal Sovereign, turret ship..	5 ..	3,765 ..	800 ..	.. ..
Prince Albert, turret ship..	4 ..	2,537 ..	500 ..	.. ..
Wivern, turret ship	4 ..	1,899 ..	350 ..	Capt. H. T. Burgoyne, V.C.
Research ..	4 ..	1,253 ..	200 ..	Commander W. B. Grant.
Viper, twin screw	2 ..	737 ..	160 ..	.. ..
Vixen, twin screw	4 ..	754 ..	150 ..	.. ..
Waterwitch, hy- draulic propelled ..	— ..	..	770 ..	Commander P. R. Sharpe.

UNARMoured SQUADRON.

Victoria	102 ..	4,127 ..	1,000 ..	Capt. F. P. B. Seymour, C.B.
Duncan	81 ..	3,727 ..	800 ..	Capt. R. Gibson.
Donegal	81 ..	3,245 ..	800 ..	Capt. J. A. Poynter.
Revenge	73 ..	3,322 ..	800 ..	Capt. G. Le Bowyer.
Royal George..	72 ..	2,616 ..	800 ..	Capt. T. Miller.
St. George ..	72 ..	2,864 ..	500 ..	Capt. E. B. Rice.
Irresistible ..	60 ..	2,642 ..	400 ..	Capt. J. Borlase, C.B.
Lion	60 ..	2,611 ..	400 ..	Capt. J. M. Hayes, C.B.
Princess Royal	73 ..	3,129 ..	400 ..	.. ..
Mersey	37 ..	3,733 ..	1,000 ..	.. ..
Liffey	31 ..	2,654 ..	600 ..	.. ..
Liverpool ..	35 ..	2,656 ..	600 ..	Capt. J. Seccombe.
Phœbe	35 ..	2,896 ..	500 ..	.. ..
Dauntless ..	31 ..	1,575 ..	580 ..	.. ..
Sutlej	35 ..	3,060 ..	500 ..	Capt. F. P. Coode.
Scylla	21 ..	1,467 ..	400 ..	.. ..
Terrible, paddle	19 ..	1,850 ..	800 ..	.. ..
Gladiator, paddle	6 ..	1,210 ..	450 ..	.. ..
Nymphé	4 ..	1,084 ..	300 ..	.. ..
Daphné	4 ..	1,081 ..	300 ..	.. ..

UNARMoured GUNBOATS.

Lee	2 ..	250 ..	60 ..	.. ..
Stork	2 ..	250 ..	60 ..	.. ..
Fancy	2 ..	250 ..	60 ..	.. ..
Pigeon	2 ..	250 ..	60 ..	.. ..
Redwing	2 ..	250 ..	60 ..	.. ..
Clinker	2 ..	250 ..	60 ..	.. ..
Bullfrog	2 ..	250 ..	60 ..	.. ..
Fervent	2 ..	250 ..	60 ..	.. ..
Orwell	2 ..	250 ..	60 ..	.. ..
Magnet	2 ..	250 ..	60 ..	.. ..
Pheasant	2 ..	250 ..	60 ..	.. ..
Hyæna	2 ..	250 ..	60 ..	.. ..

The ironclad squadron will thus consist of seven screw frigates, three screw turret ships, one screw sloop, two twin screw gun vessels, and one hydraulic propelled gun vessel, carrying altogether 219 guns, on 51,454 tons measurement of hull, and propelled by a nominal engine power of 10,837 horses.

The unarmoured squadron consists of one screw three-decker, eight screw two-deckers, six screw frigates, one screw corvette, one paddle sloop, two screw sloops, and twelve screw gunboats, carrying altogether 956 guns on a tonnage of 54,549, propelled by a nominal engine power of 12,250 horses.

Grand totals:—Number of vessels, 47; number of guns, 1,175; tonnage, 106,000; nominal power of engines, 23,087 horses.

All the vessels on mustering at Spithead will fill up with best Welsh coal to burn during the review.

The screw line-of-battle ship Princess Royal is on her way home from China, and the screw frigate Sutlej is on her way home from Rio Janeiro. Both vessels are expected to arrive home in time to take part in the review, and their names have, therefore, been included in the official list.

The screw transport Serapis, Captain Soady, has been appropriated for the service of the members of the House of Commons on the day of the review; and her sister ship, the Malabar, Captain Pickard, will, it is understood, be placed at the service of the members of the upper branch of the legislature. The Admiralty ensign will be hoisted on board their lordships' paddle yacht Enchantress, and the commanding Admiral-in-Chief of the Fleet, Sir Thomas Pasley, G.C.B., will, according to existing arrangements, hoist his flag on board the screw three-decker Victoria.

Our readers who well remember the review of 1856 will find a chart in our May number of that year (p. 263) that will be suitable to them on this occasion. It is said to have been ordered in honour of the Sultan, who is to be the guest of the Lords Commissioners of the Admiralty on the occasion. Will the emperor of China be present? for the *Journal du Havre* affirms, and with perfect seriousness, that the Emperor of China, having been invited by an autograph letter from Napoleon III., will leave his own country towards the middle of July, embark in a steamer of the Messageries Impériales, pass by the Isthmus of Suez, and land at Marseilles near the end of the second week in August. The Chinese sovereign, the same journal affirms, will be lodged and entertained during his stay in Paris at the expense of the Emperor of the French. All we can say is *nous verrons*.

Another novelty is to come from New York it is said, verily our American friends are determined as usual to be going ahead. They are to astonish the French at Havre with a swift sailing raft, which seems likely to complete her run across the Atlantic so as to run up to Paris before the last days of the "*Exposition*." We trust most sincerely she will do so, and perhaps the French will not be so impolite as to doubt the fact of the *Nonpariel* really making her voyage

as we so ungraciously did that of the *Red, White, and Blue*, which was exhibited at our Crystal Palace last year and is said to be at Paris, where she will welcome her sister prodigy when she arrives. The following announcement has been in the papers of late:—The life-raft Nonpariel sailed from New York on the 4th instant, for Havre, with a view to demonstrate the safety and security of a floating structure built on the principle of a life-saving apparatus. She is commanded by Captain John Mike, who with the two men compose the crew. The Nonpariel is schooner-rigged, and is composed of three parallel air cylinders shaped like cigars, which form what in a vessel would be called the hull. These cylinders are twenty-five feet long, and twenty-six inches in diameter, being composed of gutta percha encased in Russia duck, the outer casing being less in circumference than the inside air chamber, and thus receiving the greatest strain. The Crew have great faith in her buoyant power, having seen it tested on the coast in such a manner that they regard a trip across the ocean as a possibly agreeable incident, but entirely without danger. A large assembly was in attendance to see her start. The passage across was expected to be made in fourteen or fifteen days.

Of these two vessels we may say *Finis coronat opus*: they were sent for a purpose, one of trial, which we trust will be acknowledged sufficiently successful. But for experiments out of the way of the old beaten track of our forefathers commend us to the Yankees.

While we are on pleasure aquatics there is yet another novelty or two before us. The Yankee steamer *Quaker City*, with between 200 and 300 passengers on board, is expected shortly in the Mediterranean on a trip of pleasure to the different ports of interest in Spain, France, Italy, Greece, Turkey, and the Holy Land. Among those who have taken this means of visiting the ports of the Mediterranean and the East is General W. P. Sherman, of the United States' army, whose important services during the late civil war are so appreciated by the government that a circular has been sent to the ministers and consuls abroad to inform them of General Sherman's movements, and adding that any attentions show to him by foreign powers will be gratefully acknowledged. Major-General Banks, who represents Massachusetts in Congress, is also among the passengers.

But we should have said first that the latest advices from China are to the effect that six ships have entered for the *Tea* race to England, viz, the *Ariel*, *Serica*, *Taitsing*, *Taeping*, *Sir Launcelot*, and *Black Prince*. Although the *Ariel* won the run home last year by a neck, the shippers of the new season's teas this year have to a certain extent transferred their favours to the *Black Prince* as the winner, but still retain the fast ship of last year's race as a favourite for a place.

But we will conclude these speculations about yachts and ocean racing with the following general statement of yachts.

The English Yacht Clubs number 1,789 yachts; the New York Yacht Club, 39 yachts; the Society of Paris Sailing Club, 16; the Windermere Sailing Club and Royal Swedish Yacht Club, 15 each;

Le Cercle Nautique de la Méditerranée and the Imperial Yacht Club of St. Petersburg, 12 each; the Royal Canada Yacht Club, 10; and the Royal Sydney Yacht Squadron, 7; the names of the English royal yachts are the Victoria and Albert, Alberta, Elfin, Osborne, Black Eagle, Dagmar, and Viking.

A very silly affair has been ventilated (for when papers do get hold of matters they make the most of them) but which had been much better corrected within the precincts where it originated than getting abroad, called practical joking on board the *Phœbe*. However, it got into the House of Commons for it was treated seriously by the Admiralty, the effect of which we have no doubt will be effectually to put down what Basil Hall would have called Midshipmen's pranks, for boys will be boys, and we need only say that such practices were unknown to the Service of half a century ago, and if ungentlemanly treatment be allowed to spring up of young officers in the naval service, and is carried on unknown to their commanders, the more it is to be regretted. Sooner or later such proceedings if they are not at once quashed by the executive and principals of the ships in which they are instituted, why sooner or later they will come before the world and be deprecated as this of H.M.S. *Phœbe* has been. However it is gone by and we hope to hear no more about it or any other boys' tricks like it.

Let us turn to our Merchant Shipping again and ask what has been done to put down the scourge of that Shipping called Scurvy. The answer to our question would of course be, laws have been passed to abolish it, and so they have been to abolish many other evils—yet they thrive and go on as usual, and Scurvy in its time has been among the number, but here it is just as rife as ever. The following has just appeared in a paper called the *Panama Star* under the head Peru.

“ We have repeatedly called attention in our columns to the health of ships' crews arriving at this port from Aden. It is again our painful duty to report the arrival a few days since of two British ships, having on board twenty-two hands suffering from scurvy. They were immediately removed to the British Hospital. Most unfortunately it has too frequently been the case that the men have reached this port with the disease in such an advanced stage that a cure was impossible. We refer to the question in the earnest hope that the British public will be aroused to a full sense of the dangers to which our seamen are thus needlessly subjected, and never rest satisfied till a remedy has been provided. The lives of our sailors are too important and by far too precious to be sacrificed because shipowners are mean and niggardly, and shipmasters careless and indifferent. We have the authority of the *Lancet* for maintaining that scurvy is a preventible disease.”

All this is too true—for the fact that scurvy is unknown at sea in Her Majesty's ships, but is confined to British ships is too true a confirmation, and may be classed among the rest of the pleasures which

our seamen have to look for in our Merchant service, such as pumping, foundering, short handedness, ill-treatment, etc., etc.

It has been said of scurvy in the House of Commons, by Mr. Cave, in reply to Alderman Salomons, that, "It was formerly common on land, especially in garrisoned towns, but it was now almost unknown in the British navy, and also in the French navy and their mercantile marine, though it was still met with in the British mercantile marine. By the Acts 7 and 8 Vic., and 17 and 18 Vic., certain ships were compelled to carry lime juice on board, and the masters of those ships were compelled to serve out the lime juice to the crews after they had been living for ten days on salt provisions. The inspectors formerly appointed by the Board of Trade had been placed under the control of the Mercantile Marine Board, and the latter board had last year declined to appoint inspectors. There were two evils at work—the adulteration of the lime juice, and its stowage in improper vessels, where it was spoilt. The Acts of Parliament gave no power to inspect the stores where the lime juice was deposited, nor was there any provision to ensure the lime juice being carried in proper vessels. The noble Duke the President of the Board of Trade intends to bring in a measure for the purpose of remedying the existing defects of the law."

There can be no doubt that the sooner stringent measures are adopted the better. But we very much doubt whether all the Acts of Parliament that can be passed, will root the evil and *its sources* from our mercantile shipping.

We just learn from Gibraltar some interesting accounts of H.M.S. *Galatea* commanded by His Royal Highness the Duke of Edinburgh, who may now be said to have commenced in earnest his voyage round the world.

The departure of the *Galatea* with his Royal Highness from Gibraltar on the 11th of June, was attended with all the pomp and circumstance befitting the occasion and the important errand upon which the *Galatea* is bound—to circumnavigate the world and carry a Royal Duke in the footsteps of Cook and Anson—a Royal Duke and his fortunes; for the Prince may now be said to have cut the ropes which held him to the shore, and to be fairly embarked in his own ship to discharge a difficult and responsible duty. In the afternoon of his departure his Royal Highness, attended by Lieut. Haig, R.E., the Equerry in Waiting, went on shore to "bid farewell" to the Governor, Sir Richard Airey. He was received as he landed on the New Mole Stairs with a royal salute, and a guard of honour, furnished by the 83rd Regiment, was drawn up in front of the Convent, once, in days of Spanish ownership, the residence of the nuns of Santa Clara, now the British Government House. After bidding farewell to his Excellency and Lady Airey, the prince returned to the New Mole in one of the Governor's carriages, accompanied by Sir Richard, and escorted by Major-General Crutchley and the rest of the staff-officers of the garrison. The Royal salute was repeated as his Royal Highness

left the Mole and crossed the gangway to go up the side of his ship.

It was not till past two in the afternoon that the *Galatea* quitted her moorings. As soon as the anchor was up, and just as the screw made its first revolution, the Royal Standard was hoisted at the main. The flag at the truck was the signal for the men-of-war to dress ships, and for another Royal salute from the battery on shore. The presence of the Admiral of the Mediterranean Fleet and other chances had brought together an unusual number of ships of war. The Bay of Gibraltar has seldom been so well filled since the days of the siege, not even lately when trouble seemed imminent with Spain. In addition to the Admiral's flag-ship the *Caledonia*, there were lying off the New Mole the *Ocean*, the *Arethusa*, the *Psyche*, the *Trinculo*, the *Skylark*, the *Redpole*, and an Italian screw frigate, the *Principe Humberto*, which last-named ship joined in all the demonstrations in honour of the English Prince. The *Galatea* steamed slowly under the stern of the *Arethusa*, and on passing the flag-ship the signal was made for "Royal salute and man yards." The crew lay out with wonderful quickness along the yards, and the ships thundered an almost simultaneous volley. As broadside followed broadside in rapid succession, the slow moving masses of dense white smoke hung low upon the water, almost concealing the hull of the ships, and then gradually stealing upwards, hid all but the Royal yards and the trucks of the masts. For a few moments all remained thus enveloped, till a light breeze blew aside the thick veil, and one by one the ships stood out clear and distinct against the thick wall of smoke rolling away behind.

The *Galatea* passed slowly on, and when clear of the fleet lay to in order to allow the Admiral, Lord Clarence Paget, C.B., and all the post captains to go on board. After an interchange of adieus the Admiral went on board the *Psyche*, and steamed alongside the *Galatea*, intending to accompany the Prince's ship as far as Tangier. After a short delay the *Galatea* picked up her boats employed at the New Mole, and then steering for Cape Spartel, started on her long cruise. From Madeira she proceeds to Rio Janeiro. As the whole voyage will be made under canvas it is advisable to get the benefit of the trade winds. At the Cape the Prince will remain a month. There is no programme made out as yet of the probable proceedings on arrival in Australia, but it is known that the *Galatea* will come home round Cape Horn, and that she may be expected in England in the course of twelve months.

We have adapted the foregoing from the *Times* according to probabilities, for we consider it highly improbable the *Galatea* will visit the Mauritius—for it is *not* in her way to Australia.

Looking in the direction of Singapore, we find that energetic scientific officer, Captain Brooker, arrived there early in May, in command of H.M.S. *Sylvia*, on his way to Japan, where his services in improving the hydrography of that laud are much required. It appears that she

touched at the Cape and Trincomalee, and visited the Andaman Islands in search of Adnaman rock. The rock was found about sixty miles from land. It is about the size of a table on an invisible bank, and stands eight feet out of the water at low tide.

It is likely enough on a bank connecting the Andaman and Nicobar islands, and being thus isolated is most dangerous. She then proceeded to the Little Andaman to learn particulars of the murder of the crew of the English merchant ship *Assam Valley*. It was discovered that the Little Andaman islanders were notorious pirates and murderers, and it is expected that the Indian government will send a strong force down to deport the scoundrels. The *Sylvia* then touched at Martaban, and sounded the Malay coast for the telegraph cable from India to China through the Malacca Straits. She would leave Singapore shortly for Saigon, Hong Kong, the Formosa coast, and Japan. Her Majesty's ship *Pearl*, on her way to Borneo, and her Majesty's ship *Salamis*, on her way to Sarawak, both met with some damage by striking on the Dido rock.

THE TRAINING SHIP WORCESTER.

OF late years an opinion has generally prevailed that the mercantile marine is not so well officered as befits the character of the British commanders. To remedy this defect a number of persons connected with the port of Liverpool, set on foot a college for the training of young gentlemen for the merchant service. The conspicuous success which has attended the *Conway* has led to an imitation of the experiment in the Thames. For this purpose the government in 1862 presented the Committee with the frigate *Worcester*, which has since been moored off Erith. During the four years 365 pupils have been entered, of whom 240 have completed their education, leaving 125 still on board. On the 22nd of June, the annual distribution of prizes was made by Sir John Pakington, M.P. Mr. Cave, M.P., and Sir John Hay, M.P., were also present; and letters of regret were received from the Duke of Richmond, Mr. Henley, M.P., and other distinguished public men. The company, which was very numerous, consisted of friends of the pupils and of gentlemen interested in the Institution, for whose accommodation the saloon steamer *Palmerston* was specially chartered. The chair having been taken by Mr. Cave, honorary secretary, Mr. W. M. Bullivant, read the reports of the examiners—Mr. Snell, mathematical and nautical master at the Royal Hospital schools, Greenwich; Captain John Domett, of the Local Marine Board; and Captain Comber, R.N.; as well as of Captain Whithy, the commander of the ship, and Mr. Read, the head master. They were all of a most satisfactory character.

Sir John Pakington then presented the prizes, which were of an

unusually valuable character, and afterwards warmly congratulated the school on the excellent character that had been given it by the examiners, on whose reports he felt he could place entire reliance, because they had evidently not fallen into the error sometimes committed by examiners, namely, that of giving indiscriminate praise. He must also congratulate the scholars on their appearance. Unless they had adopted the fashion of the army, and put the best looking fellows in the front, he must say he had never seen a jollier or a more promising set of lads before. It was his great good fortune, seven or eight years ago, to recommend the grant of the *Conway* for a training ship at Liverpool, and he trusted that the *Worcester* would emulate the success which had attended that experiment in the Mersey. Although no longer at the Admiralty, he should always be ready to render the *Worcester* any service in his power, and he trusted that it would tend to cement those feelings of amity and brotherhood which ought to subsist between officers of the Royal Navy and those of the mercantile marine.

Mr. Henry Green, as a member of the committee, expressed his acknowledgment to Sir John Pakington for the kind terms in which he had spoken of the institution. They were indebted to a Whig government for the ship, but he must say that that government had "scamped" the fittings. After the remarks of Sir John Pakington, however, the committee would feel no delicacy in applying to a conservative administration if they should stand in need of any assistance in the shape of repairs. The chairman announced that her Majesty had been graciously pleased to grant the same prizes to the *Worcester* as she annually gave to the *Conway*, viz., a gold medal and also a cadetship in the royal navy with a binocular glass worth five pounds, and thirty-five pounds towards the boy's outfit.

Before returning to London the *Palmerston* stopped at Greenhithe, for the purpose of paying a visit to another training ship of a very different character. This was the *Chichester*, a 50 gun frigate, which was presented by the government in October last to the committee of the Refuge for Homeless and Destitute Boys. When full the vessel would accommodate two hundred lads, but at present the funds at the disposal of the committee only allow them to admit half that number. When the *Palmerston* came alongside the boys manned the yards, and were afterwards drawn up on deck. It was touching to contrast them with the scholars of the *Worcester*. The average expression of a *Worcester* and *Chichester* boy shows that class distinctions in English society do in their extremes amount to differences between castes. Nobody would ever have supposed that the *puer ingenui vultus*, and the boy whose very countenance spoke of hereditary ignorance and neglect—in short, of hereditary street life—could belong to the same national race. The company subscribed fifty pounds, which will enable three more of the poor, lost, degraded urchins of the metropolis to be rescued from a life of misery and vice, and placed in the way of earning an honest and respectable subsistence.

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 81, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 348.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen in Mils.	[Remarks, &c. Bearings Magnetic.]
29. England, East Coast	Spurn Low Light	... ..	...	...	...	To be changed to red. Est. 1st September, 1867. See note (a.)
	Orfordness Low Light	... ..	...	...	...	Ditto, also to be red. Est. 1st Sept., 1867. See note (b.)
	Dungeness	... ..	...	...	...	A red Light established. See note (c.)
	Weymouth	... ..	...	...	...	Two red Lights. See note (d.)
30. France, West Coast	Normontier Island	47° 0' 5" N. 2' 13' 3" W.	F.	111	10	Est. 25th May, 1867, on Point de Dames. See note (e.)
	Point Grouin du Cou	46° 20' 7" N.	F.	92	10	See note (f.)
	Do. Pertuis Breton	1° 28' W.				
31. Aden	Gulf of Aden	12° 45' 4" N. 45' 4" E.	F.	244	20	See note (g.)
32. St. Augustine	Florida, U.S.	29° 50' 7" N. 81° 19' 3" W.	F. & R.	71	13	Re-est. 1st June on N. end of Anatasia Island 20 seconds between flashes.
	Cape Lanaveral	... ..	F.	...	...	Re-est. 1st June: expected, temporary
	Bokel Cay West Indies	Belize Coast	... ..	...	...	Reported not to exist.
33. Mortar Island, Adriatic	Pt. Augusto	44° 33' 3" N. 14° 25' E.	F.	36	9	Est. 17th August, 1867, Light white and red. See note (h.)
	Sata Croce rock	Coast of Italy	F.	131	15	Est. 5th May, 1867. See note (i.)
	Leghorn	Meloria Bank	F.	60	11	Est. 15th May, 1867. R. & D.
	Ditto, South Light	On Break-water	... ..	...	...	Est. 15th May, 1867. See note (j.)
34. Little Garras Island	Rio Strait, West Coast	0° 46' N. 104° 21' 5" E.	F.	118	8	Est. not stated.
	Takolai Is.	Ditto	F.	41	8	Ditto
	Sauw Island	Ditto	F.	118	8	Ditto
	East Extr.	Ditto	F.	...	...	Ditto
35. Spithead	... ..	... ..	...	...	...	Temporary. See note (m.)
36. Cape Del Armi	Messina Strait	37° 57' 3" N. 15° 41' E.	F.	312	13	Est. 1st June, 1867, See note (n.) On Italian shore.
	Messina Port	... ..	...	64	...	Now in the S.E. angle of fort San Salvatore.
	United States	Gannet Rock	... ..	...	...	Will disappear from 9th July to 1st August, 1867. See note (o.)
	Point Judith Light	... ..	...	...	...	On 1st June will have a Fog-signal-trumpet.

F. Fixed. Fd. Fixed and Flashing. R. Revolving. I. Intermitting. Est. Established.

(a.) *Alteration in the Low light at Spurn Point.*—The light will be coloured *red*, visible from seaward between the bearings N.W. by N., (passing two cables N.E. of the Sand Hayle buoy,) round Northerly to S.E. by E. $\frac{1}{2}$ E., on which latter bearing it will pass one cable North of Grimsby pier.

(b.) *Alteration in the Low light at Orfordness.*—The light will be coloured *red* on the following bearings visible from seaward, S.W. $\frac{1}{4}$ W., (on which bearing it will extend two cables eastward of the Sizewell bank buoy,) into the land; and from E. by $\frac{1}{4}$ N. into the land.

(c.) *Anchorage light at Dungeness.*—Also, that the *red* light marking the anchorage ground to the westward of Dungeness is now shown from a window below the lantern.

Mariners will, therefore, observe that the *red* light is separate and distinct from the electric light, which will show *white* in that direction as formerly.

The *red* light marking the anchorage ground to the eastward remains the same as before.

(d.) *Harbour lights at Weymouth.*—The Harbour Master of the port of Weymouth has given Notice that the light at the entrance of Weymouth having been totally destroyed in a gale on the 5th day of January last, a buoy now marks its site, and the following lights are substituted for it:—

Two *red* lights are exhibited at the north part of the town bearing from each other N.N.W. and S.S.E.

These lights in a line bearing N.N.W. will lead vessels in the direction of the harbour, clear of the Mixen; care being taken not to open the higher light to the left, or westward, of the lower.

Vessels should proceed with these red lights in one, until two *green* lights, placed on the North Pier, are brought in a line, bearing, W. $\frac{1}{2}$ S., which is the leading mark, in until within fifty or sixty yards of the East light, then keep mid-channel up the harbour.

[All Bearings are Magnetic. Variation 21° Westerly in 1867.]

(e.) The light is a *fixed white and red* light.

The white portion of the light is visible from seaward round a great part of the horizon and the red portion from the bearing W. by N., or in a line from the steeple of Bourgneuf, to S. by W. $\frac{1}{4}$ W., or in a line about midway between the shoals of Pierre Moine and Basse des Peres.

(f.) Also that a new light has been established 580 yards S.E. by E. $\frac{1}{4}$ E. from the present light on the point Grouin du Cou at the entrance of Pertuis Breton.

(g.) The light will be chiefly of use to vessels making Aden from the eastward. Vessels westward of Aden would lose sight of the light when shut in with Rus Tye.

(h.) The light is a *fixed white and red* light. The white portion of the light is visible from seaward between the bearings N. by W. $\frac{1}{4}$ W. and E. by N. $\frac{1}{4}$ N., and the red portion between the bearings E. by N. $\frac{1}{4}$ N. and S.W. or about the entrance of the port.

(i.) The light is visible from seaward between the bearings S.S.W., round by South and West, to North.

(l.) A *white* light will be exhibited 6 $\frac{1}{2}$ feet below the *red* one from the lighthouse on the south end of the breakwater at Leghorn.

This additional light is intended to prevent the red light of the Meloria bank being mistaken for that of the breakwater.

[All these Bearings are Magnetic. Variation in 1867, in the Adriatic 12°, and at Leghorn 15°, Westerly.]

(m.) With reference to Notice to Mariners No. 1, dated 1st January,

1867, fourth paragraph, relative to two white lights being exhibited on the pile pier erected on the Sandhead, midway between Ryde and Nomans-land shoal.

From the 1st day of June, 1867, a *fixed red* light will be exhibited from the extremity of the pier, and the two small white lights, at present exhibited, will be discontinued.

(n.) The light is intended to serve as a guide to vessels entering the Strait of Messina from the southward.

(o.) The new light will be a *fixed and flashing* white light, showing in every minute a steady white light for forty-five seconds, followed by an eclipse, a flash, and another eclipse, each of about five seconds duration.

We have received the following Nautical Notices from the Depot de la Marine at Paris.

DUNKERQUE.

The entrance channel into Dunkerque has a bar of sand about two cables length from the heads of the jetties, on which bar, at the lowest tides, there is not above a foot or two of water, and it is therefore dangerous to attempt it.

The channel between the pierheads has more water, having at every tide nearly twenty feet of depth. The piers project to W.S.W., and close outside of them the channel suddenly turns to the northward. At high water the tide sets E.N.E. at a rate of three and a half knots, making the entrance very difficult, especially for long vessels.

The sill of the entrance into the basins is about three feet above the level of the lowest tides, and has therefore seventeen feet of water at the worst tide, and a vessel drawing fourteen feet may enter the basins with any tide.

The sea in the roadstead is sufficiently quiet for merchant vessels, and especially for long steamers to discharge or receive cargo. The holding ground is excellent, and even in winter time, large merchant vessels are able to lie there in safety in all weathers.

There is a depth of more than forty-nine feet in the roadstead at low water of the lowest tide, and thirty-one at least in the passage buoyed leading into it. Depths of thirty-eight feet and more extend over a breadth of half a mile to an extent of three miles parallel to the coast. The length of the best sheltered parts of the anchorage by the off-lying banks is about three miles. The western entrance of the roadstead is well buoyed and lighted from Gravelines to Dunkerque, but the others are not so.

ON MAKING CAYENNE.

Notes on making the land about Cayenne—French Guiana.

Vessels from Europe making the land a little to leeward of Chicapour (or thirty-five leagues to windward of Cayenne), according to the instructions are obliged from the want of marks on the coast (the current being strong and irregular) to run much out of their way, and are obliged to be continually sounding, which delays the speed of the ship: therefore commanders of steamers should make the land in preference about Connitable, about twelve miles off shore, and standing about one hundred and sixty feet above the level of the sea, and visible from twenty-five to thirty miles distant.

But it is necessary in adopting this course to avoid the shoals which break at a distance of five miles from this rock, that render its approach dangerous when a vessel is not quite certain of her position. It is no less

necessary to be careful of the current which is very strong hereabouts in the S.E. trade in May, June, July, but not so strong in the N.E. trade. The direction of these banks is about N.W. A lighthouse on the Conntable would be a good mark by day or night, and thus indicating all danger, would allow sailing vessels also to run for it.

From 1852, the pilot station has been the *Pera* islet; the station which was on the *Mere* was moved there, because a bank of soft mud had formed about it on which the anchorage is quiet, while about the *Mere* the ground being hard mud the sea is heavy, full of eddy and very trying to the vessel. Besides a vessel may fearlessly approach the N.E. port of the *Pera* with her lead.

It seems to be best when approaching the *Salent* isles to pass South of them. To the northward of them the depths are not more than those to the South, and it lengthens the route, and by passing to the northward a vessel has often more difficulty in gaining the anchorage she desires, and the vessel may also be compelled to run a little through the mud. By adopting the route to the southward, a vessel drawing twenty-three and a half feet may run to an anchorage without touching ground before she reaches the desired position, although the ebb may have been running for an hour.

Vessels must not entirely depend on seeing the lights on the coast, for it is said they are not well attended.

BANKS OFF ISLE BRIONI ADRIATIC.

A recent survey by French naval officers shows that the channel between Grand Brioni and the rocks near Orsero, Levangha and Gahra, as well as those between Petiti, Brioni, Girona, and Zumpin are not passable until a more special survey has been made of them, in consequence of the number of banks and shoals, on which there is not more than five to seven feet of water, and also because the shores of these islets are very shelving, and shallow under water.

Vessels drawing sixteen feet water should not pass within six cables West of isle Gaza, as the dry part of Astora extends to that distance with the same depth over it. The passage between Cubula bank and the Gaza and San Marco rocks is not practicable on account of the Burchio bank in the channel, with but twelve feet on it.

The channel between the Porer rock and the main land is not clear as shown by the charts; for, first, there is a bank of three fathoms a cable and a quarter N.N.E. of the Porer rock, and next, a bank in it of four fathoms at six cables to the N.E. of the same rock.

Besides these, there is a rocky bank of less than five fathoms with deep water around it at eleven cables W.b.S. from the same rock. All these bearings are true, the variation being 15° W. at Livorno, and at Pola 12° W. in 1867.

CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE,

in June, 1867.

1179. England—West Coast, Bristol Channel and views. Commander Aldridge, R.N. 1867. 4s.

1184. Mediterranean—Tunis Bay and view. Commander Wilkinson, R.N. 1865. 1s.

EDWARD DUNSTEEVILLE, *Commander, R.N.*

Hydrographic Office, Admiralty,

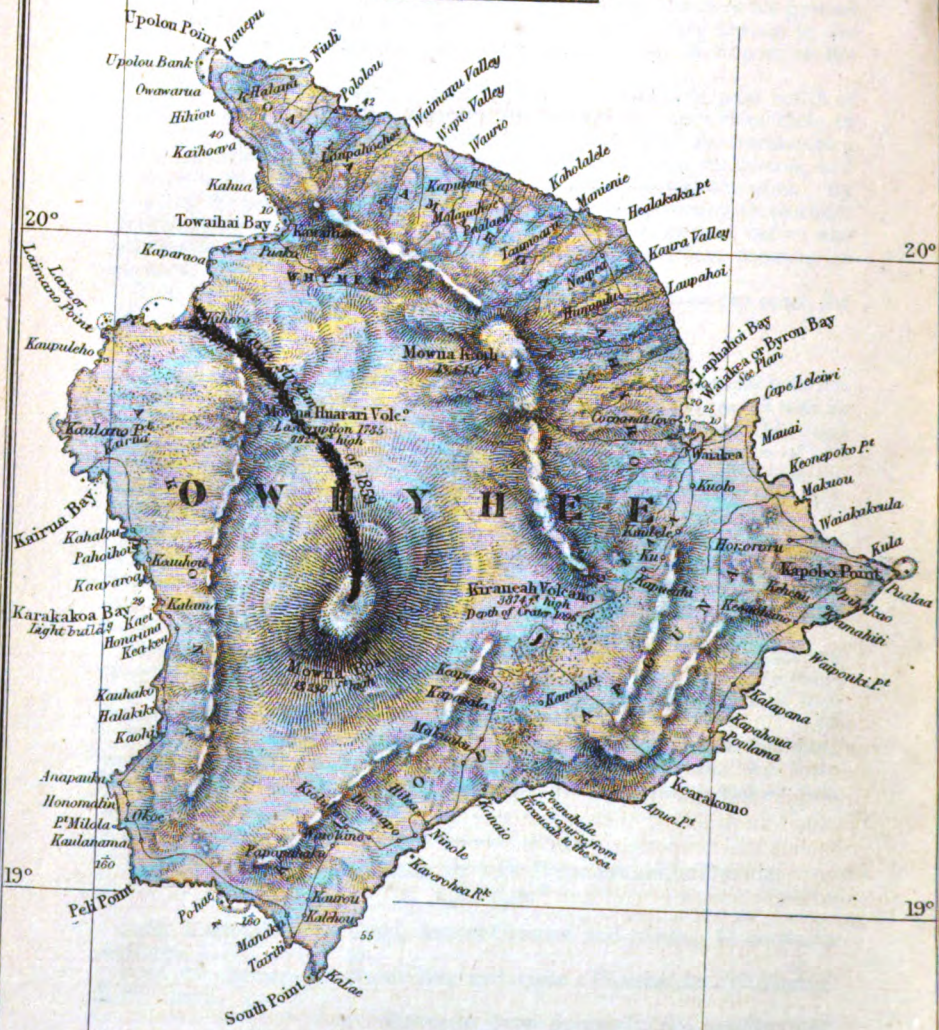
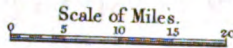
21st June, 1867.

156°

155°

FROM THE ADMIRALTY CHART OF THE SANDWICH ISLANDS.

The course of the lava stream in 1859 is indicated by the dark jagged line proceeding to the North West from the Volcano.



156°

155° W. from Greenwich.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

AUGUST, 1867.

COLLISIONS AT SEA.—*Preliminary considerations.*

A PRIMARY object of care, preceding all constructions, is the *foundation* on which they are to be based. For however complete in design or however true to rules of architecture a house may be, yet if its foundation is insecure it is no safe place of habitation. Applying this patent truth to the subject of *collisions of vessels*, it will appear that there is a most necessary and important consideration which ought to precede any attempt at establishing rules of the Road for ships under way, with a view to prevent collision.

2. When the whole subject is considered carefully, it will be discovered that there are *disturbing elements* of a kind that will lessen, and in some cases, annihilate the value of all theoretical accuracy, and while a diagram with a group of ships, like that lately issued by the Board of Trade, may be constructed with the utmost trigonometrical precision, and calculated with the greatest mathematical accuracy, it does not at all follow that no danger would result from adopting the problems based upon it. On the contrary, with the exceptions, for after consideration, *no rule* of the Road can be made *absolute* without incurring the risk of collision nor without in some cases, incurring the *certainty* of such a disaster.

3. The first of the disturbing elements is the WIND, with its varying effects on the several ships involved in the problem, and its very unequal action on these vessels according to their trim-rig, and point of contact, etc., etc., which part of our subject must be treated separately.

4. Next come the TIDES, a powerful element of disturbance,

especially in some regions, where they *meet*, and also at the times when they are *turning*. Let it be noted that there are places where the tides make the entire revolution of the compass, and we shall see at once how differently, and how unequally a group of vessels would be acted upon, and how dangerous it would be to take for a guide, a *rule* based solely upon their *relative positions*.

5. Omitting at present the consideration of *rule* nineteen in the paper issued by the Board of Trade, and leaving the subject of *tidal* disturbance upon anti-collision problems for special treatment, omitting also the question of *unequal speed* of the different vessels, and the action of the sea, as well as the ever *shifting* error of the compass in iron ships as the direction of the vessel's head is altered, omitting all these but not dismissing them, I proceed to consider another element of disturbance, and one which appears to have escaped the attention of nautical men generally, and which is intended to be the special subject of this paper.

6. THE SURFACE CURRENTS OF THE SEA, with their very *different* and *unequal* action upon a group of vessels according to their different draughts, and to the different angles their keels make with the direction of the current, this is the subject for present special consideration, and while it may be said that all sea currents are surface currents relatively to the great depths of the ocean, those only are alluded to here which reach down no lower than the limits of ships' depths of immersion. And it is to be observed that the question of the angle a ship's keel makes with the direction of the current, while a most important one, and accounting for many disasters and errors in ship's reckoning, will not be more than glanced at now, as a very useful purpose might be served by treating it separately.

Let us once get familiar with the fact that there are *shallow* currents on the sea, varying from mere flying ripples on the surface down to a depth of four or five fathoms, and varying in speed from half a knot to several knots an hour, and then we shall find a phenomenon to account for some things in nautical annals that are very hard to account for in any other way.

I will illustrate the subject with an example from my own experience. On one occasion when off the Nicobar Islands in an old man-of-war brig (*Britomart*) in fine weather, it was observed that as the wind fell light the vessel swung *broadside* on to the direction of her course, and stranger still that when it fell calm, a current was observed to be setting past the vessel at the rate of about one and a half knots, just as if we had quietly drifted on to a sand bank over which flowed a current, although we had no bottom with a hundred fathoms. Now as the *Britomart* drew only fourteen feet I knew at once that the current must reach to a less depth than the draught of the vessel, otherwise she would have been swept away at its full rate, which was found to be about three knots, and by means of a very simple instrument, made for the occasion, I found the current reached down to *nine* feet only below the surface, leaving five feet of the vessel's bottom in *still* water, to check the full action of the current. The vessel lay

with her head north, across the stream of the current, which was setting due east; and nearly west of us was a Maldive craft, drawing about eight feet, and so drifted by the current without any check as it reached down to a foot below her keel. Therefore as there was every chance of her drifting foul of us, a boat was sent away to help in towing her clear, and she did drift close upon us, certainly not further clear of us than her own length off. By sunset she was nearly out of sight. The calm continued all day, and the incident suggests to nautical men, including naval authorities, some useful considerations.

One of the first of these considerations is the importance of vessels employed together on an exploring expedition being as nearly as practicable of the *same draught*; on the one hand to lessen the risk of *drifting into collision*, and on the other, to lessen the risk of *parting company*, both of these casualties nearly occurring to the *Britomart* and the *Maldivie*.

What seaman has not remarked at times, in seasons of stark calm, vessels come in sight and disappear; and also remarked the difficulty when running side by side with another ship, of keeping clear without steering off half a point or so, which is commonly accounted for by the attraction of masses, but more likely to be owing to a cross surface current acting unequally upon two ships of different depths of immersion. I would remark, that I have long had a conviction that the fate of the unfortunate *Peyrouse* and his consort, was owing to their coming into *collision*, and that the catastrophe probably resulted from the action of a surface current, when a heavy swell was on. And as it is probable there was a difference of five or six feet in the draught of the two ships, it is easy to imagine that they *drifted* into collision, nor is it unreasonable to think that the expedition might have ended otherwise, had the two ships been of the *same draught of water*.

Now, supposing that instead of the *Britomart* and the Maldive vessel, there had been a fleet of twenty men-of-war off the Islands at the time, varying in draught from the heavy liners of twenty-four feet and upwards, down to small gun-boats of light draught for service in shallow waters; the result would have been, that each of these twenty vessels would be acted upon by this nine feet stream of current in *very different degrees*. For while the large ships having so much of their immersion in the *still water* below it, would be little affected, the smaller vessels would have been swept away and *separated* from the fleet. And it would have been a curious sight to see the small vessels drifting past the large ones, and perhaps in one or two cases, where a gun-boat was drifting very close to a liner, a *hawser* might be passed on board to keep the little craft from parting company. In another case boats would be sent to tow a vessel which was likely to drift foul of another, for the supposition is, that the fleet was composed of vessels without steam.

Having briefly indicated the action of surface currents at sea, and the disturbing effects they will have, in certain cases, upon "Rules of the Road," I go on to observe, that if after admitting this, and all other disturbing elements, a Rule can be so framed, as to be made

safely absolute, for a certain class of cases, then such a Rule is of very great value to *seamen*, and such appears to be the second Rule laid down in the brief work lately issued by the Secretary of Lloyd's Salvage Association, and one, therefore, to be commended to the attention of seamen of all nations.

The preliminary considerations here suggested are of a material and practical nature, but it will occur to a thoughtful observer of this and kindred subjects, relating to the safety of ships at sea, whether there is not an occasion for a preliminary consideration of *another* kind, involving the present very unsatisfactory relation so often found to exist between the owners and commanders, and between the commanders and the crews of ships, and to which may be traced a large part of our Maritime disasters. It is here, and in this region, *especially* and *primarily*, we so much need a better "Rule of the Road." For if this can be better ordered many good things will follow: among them an improvement in the general efficiency of our ships, and all on board of them: and if the "Institution for Improving the condition of Merchant Seamen" can in any way help forward a measure so important, and so much to be desired, then such an Institution will earn the gratitude of seamen of all nations, and the thanks of the country.

July 17th.

W. C. P.

[Our volume for 1842, in particular, supplies abundant testimony regarding the currents about the Maldives, and they will be found alluded to in several of our other volumes also. But we are under the impresson, that, the ships of La Peyrouse will afford no illustration of the subject, for our volume for 1833, at page 530, shews that by the research of Captain Dillon, his ships were blown ashore from their anchorage on the island of Manicolo, one of the extensive range of the Solomon Islands, at the setting in of the Monsoon. The French navigators have, however, set this matter at rest, but their authority is not at present at hand to which we might refer.

At the same time, these surface currents, even those which will affect a boat drawing but a few inches of water, belonging to a ship that will not be affected by them, are well known to seamen. Our own experience furnishes one in the neighbourhood of the Azores while we were engaged in rock hunting. This was in H.M.S. *Leven* in 1818. We had been lying becalmed for a long morning, and in the afternoon the middies were allowed to take the jolly-boat to bathe. We had pulled about a cable's length from the ship, and were occupied about an hour or two when we were ready to return aboard, but on looking for the ship, we found ourselves about two or three miles from her, not having before noticed that our distance from her had increased so much. Now, the ship drew about twenty feet of water, while the boat drew about six or eight inches, thus affording a complete illustration of the effect of surface current above mentioned of the *Britomart* and her Maldive friend. While the former was but little affected by it, the latter was entirely under its influence. Lieutenant Lee, of the American Navy, mentions numerous instances of his experience of surface

currents affecting only his boats, and we have also alluded in the *Nautical Magazine* to a boat being swept away from the *Rocas* by the surface current, which islet the crew could not regain, being unable to make any headway against the current setting Westward.—ED.]

THE VOLCANO OF MAUNA LOA, OWHYHEE, SANDWICH ISLANDS.

The Eruption of 1855.

(Continued from page 360.)

ON the evening of the 11th of August, 1855, about ten o'clock, a small light, apparently of burning brushwood or grass, was seen near the top of Mauna Loa, which rapidly increased until the whole heaven reflected its brightness, and turned the night into day. So bright was it towards morning, that fine newspaper print could easily be read by the light. It was certain that some unusual eruption had begun. This light continued, varying in brightness, for weeks; sometimes a dense smoky atmosphere obscured it wholly, but when clear, the sight as seen by vessels at sea, is represented to have been grand beyond description. The seat of this eruption, which is in the old traditional crater of Mokuaweo, is on the summit of Mauna Loa, some 14,000 feet above the level of the sea, in a region rarely visited by man.

We cannot give a better description of the beauty and novelty of this grand sight, than by quoting Mr. Coan's account of his trip to the crater in October, 1855.

Taking the channel of a stream which enters Hilo Bay as our path, we advanced with much toil through the dense jungle along its banks, and rested at night at the roots of an ancient tree—having made about twelve miles. The next day we made about twelve miles more, for the most part in the rocky bed of the stream, the water being low. Volcanic smoke filled the forest, and charred leaves came floating on the breeze, and falling into the wild channel we were threading. At night, when the shades gathered over these deep solitudes, unbroken save by the bellowing of the mountain bull, the barking of the wild dog, the grunt of the forest boar, the wing and the note of the restless bird, the chirping of the insect, the falling of the time-worn tree, the gurgling of the rill, and the wild roar of the cataract, we made our little bed of ferns under the trunk of a prostrate tree, and here, for the first time, we found that the molten stream had passed us in the jungle on the left and was now many miles below us on its way to Hilo. But we would not retreat, and as the jungle was nearly impenetrable in the direction of the stream, we pursued our upward way in the bed of the river until half-past one p.m., on the third day, when we found ourselves out of the forest, and on the high plateau at the base of the mountain. I cannot stop to describe the beautiful, the romantic, the wild, the wonderful, in the banks, the narrows, the widenings, the rocks, the rapids, the cascades, the basins, the caves and natural

bridges of this solitary stream. Nor can I speak of the velvet mosses, the modest creepers, the rich festoons, the sweet wild flowers, the gigantic ferns, the ancient forests, and all the tropical glories which are mirrored in its limpid waters. We needed an artist and a naturalist to fix the glowing panorama, to paint the flora and catch the fauna of these romantic solitudes.

When we emerged from the upper skirts of the woods, a dense fog obstructed our view of all distant objects, so that we could not see the summit-fires, nor trace the molten stream down the slope of the mountain. We encamped early in a vast cave; but during the night the stars came out, and the volcanic fires played brilliantly from their high source down the mountain sides, over the scorified plains, and far down in the forest over Hilo.

Early in the morning (Friday, the 5th,) we left our cavern, and at half-past seven, were on that black and smoldering stream, for which we had been searching for more than three days. Almost as far as the eye could reach, these regions had been flooded with seas of fusion—now, for the most part, hardened, but smoking and crackling with heat and escaping gases.

We passed several miles up the left verge of the stream, and finding a narrow, well-solidified place, we crossed over to the right verge—our passage occupying an hour and a quarter. We now ascended rapidly along the right bank of the stream, sometimes upon it and again skirting it, according to the facility for travelling or the directness of its course. The stream is very tortuous, making ample detours, and sudden zigzags, so that we saved much by cutting off bends or following the bases of the triangles described in its course.

All this day we came to no open fire. The first overflowing had stiffened and solidified in contact with the atmosphere, forming a broad open pall.

Under this self-made counterpane the continuous stream has formed a vast duct; and in this subterranean pyroduct it now flows like oil, at the depth of from twenty to one hundred feet, unexposed to the stiffening action of the air.

At night we slept on the higher regions of the mountains, beyond the line of vegetation, with the slag for our pillow, the heavens for our canopy, the stars for our watch-fires, and Israel's Shepherd for our guardian.

We were astir early on Saturday morning, climbing over indescribable hills, cones, ridges, and masses of hot and smoking debris, and scoria, scattered wild and wide over those Plutonic regions. We soon came to a line of jagged cones with open orifices of from twenty to one hundred feet in diameter, standing over the molten river and furnishing vents for its steam and gases.

We approached the vent with awe, and, looking down their fiery throats, we heard the internal surgings and saw the mad rushings of the great molten stream fused to a white heat. The angle of descent was from 3° to 25° , and we judged the velocity to be forty miles an hour.

The maddening stream seemed to be hurrying on, as if on swift commission from the Eternal to execute a work of wrath and desolation in the realms below. Upward and onward we went—climbing ridge after ridge, parched with thirst, panting in a rare atmosphere, blinded by smoke, almost scathed by heat and excoriated by sulphurous gases.

All the rest of the way we saw frequent openings into the fiery canal, upon whose arched ceiling we walked for miles, with the fearful stream rushing madly beneath our feet. At one p.m. we found ourselves at the terminal crater and standing on its craggy and smoking crest.

This was the high fountain of eruption—the great chimney whose throat goes down immeasurable depths into those fearful realms where man's eye never penetrated, and where he cannot look and live. For nearly five days we had struggled to gain this point; and now we were here—specks, atoms in creation—obscured by smoke, startled by infernal hissings, amid these wild wonders, these awful displays of power which had scattered such a tempest of fiery hail and raised such a raging sea of molten rocks on these everlasting hills.

The grandeur, the sublimity, the terror of the scene were unutterable. A vast chasm had opened horizontally on the top of the mountain, and along this yawning fissure stood a series of elongated, jagged and burning cones, about one hundred feet high, rent through this larger diameter, and throwing up dense columns of blue and white smoke, which covering the mountain's summit, rolled in fleecy masses down its sides and spread out like the wings of chaos over unmeasured regions. Still no fire could be seen in this fountain-crater. We could feel it everywhere, and we could see and hear its escaping gases; but the throats of the cones were clogged with hot masses of cinders, pumice, and ashes, with cracks, crevices, etc., for the escaping smoke. The fusion had long since found vent in a lateral, subterranean duct, several hundred feet below the rim of the crater, and in this covered way it flows off until it makes its appearance, as described, some two miles down the side of the mountain.

This eruption, which in the quantity of lava thrown out, has probably never been surpassed during the residence of foreigners on these islands, continued for about thirteen months, and stopped when within six or seven miles of Hilo. The stream was more than sixty miles long, and the area covered by the eruption probably exceeded 300 square miles. It finally ceased and became quiet during September or October, 1856.

We have prepared from the Admiralty chart of the Sandwich Islands (called so by Captain Cook * their discoverer, after the Earl of

* CAPTAIN JAMES COOK.—It is stated in Australian papers that the inhabitants of Sydney, Australia, have resolved to erect a monument in their town to commemorate the discovery of their country by Captain Cook. The monument is to be completed in 1870, in which year precisely one century will have elapsed since the discovery of New South Wales by the English navigator. This group was discovered by the same renowned man in 1778, and before the centennial anniversary of it arrives, we trust that some movement will be made towards

Sandwich, then first Lord of the Admiralty), a plan of the Island of Owhyhee (called afterwards by the French navigators Hawaii), which is the largest and principal island of the group. It is not however the place of the capital or the residence of the native king of the islands, who with his government resides at Honolulu, a city of no mean pretensions, with a small harbour on the southern side of Oahu an island about one hundred and twenty miles N.W. of Owhyhee.

This island which is about two hundred and fifty geographic miles in circuit, is considered to owe its origin entirely to volcanic action, being the principal seat of volcanic fires. It is however entirely destitute of harbours, although abounding in exposed bays (one of which Karakakua, or "the path of the gods," in the estimation of the natives, is the place where Captain Cook was killed in 1799), but none of which afford shelter for shipping from all winds.

The three great mountains of the island are Mauna Kea, Mauna Hualali, and Mauna Loa, the latter which is to the southward of the others, being the most active volcano. Owing to its want of harbours and its volcanic nature it is but thinly inhabited. It is however not deficient of beautiful scenery, of the crater of which, already alluded to, we are preparing a sketch for our next number. A gentleman who visited the volcano in 1859, the eruption of which will be also described in our next, makes the following remarks on the island, with which we must conclude our present notice of it. He says,

"Besides volcanoes and snow-storms, the island of Owhyhee is remarkable as is well known for many other natural curiosities, among which its waterfalls are not the least interesting. In northern Owhyhee there are, scattered here and there, many remarkable falls and cataracts, some of which, for beauty and sublimity of surrounding scenery, possess few parallels in the world. The valley of Waipio, which in itself forms one of the most interesting natural wonders of the island, possesses two of these waterfalls. One of them, near the mouth of the valley, visible from the sea, and said to be twenty-five hundred feet high, possesses a world wide reputation. The other one, situated at the head of Waipio valley, at a distance of some eight or ten miles from the sea, is, although not its rival in height, by far the most beautiful and perfect fall. At this point the precipitous sides of the valley, assuming a perpendicular position, approach each other in a regular curve and join, so that the valley suddenly terminates in a large basin, surrounded by smooth perpendicular and overhanging rocks, rising to a height of fifteen hundred feet, and forming a sort of huge chimney, over the top of which pours the main body of the Waipio river. The water of this river rushes over the brow of the rock in one broad, regular stream, and falls in an uninterrupted sheet to the bottom, and thence, flowing forth from the deep round pool that receives it, dashes and roars away down the valley among the rocks. The huge precipices, the thundering water, the dancing rainbows, the blackness of the

erecting a monument to him in this group—either a lighthouse at the entrance of this harbour or an obelisk at Kealakekua (as it is called in the island), where he was murdered.

great cave beyond the pool and behind the fall, and the many varieties of bright coloured ferns above and on either side, form a rare combination of attractions. An artist would seldom meet a more glorious subject for a pencil.

"This beautiful fall is, unfortunately, very difficult of access. The route up the valley is rough and in some places dangerous. The traveller will be up to his waist in water a greater portion of the time, and in one place, for a brief distance, swimming is the only method of progression. Probably few white people have ever visited the spot. The lover of natural beauties, however, if he is stout enough of limb to overcome intervening obstacles, will be richly rewarded for his labours, by a visit to the head of Waipio Valley."—J. H. S.

We will now conclude our present paper with an account of a trip to Owhyhee from Honolulu, in the weekly steamer *Kealukakua*, made in September last.

It was late in the evening when we left Maalaea Bay. The wind was blowing furiously across the low isthmus between East and West Maui. Clouds of flying sand marked the channel which separated the two islands at no remote geological period. The *Kilauea*, under sail and steam, bounded through and over the waters like a sea bird; but before we had passed the channel of Kahoolawe, the breeze died away and the sails flapped uselessly against the masts.

The night was calm, with light *cumuli*, that seemed to hang motionless in the heavens. When daylight broke upon us, the point of Kohala appeared to the east beneath a bank of low clouds. Mauna Kea was shrouded, and the sun struggling up, radiated grandly through the mists that overhung Waimea.

We approached the coast, and the slopes of the mountains from North Kona down were of the purest and softest green, variegated by the different shades and tints of the foliage. A white cloud hung over the mountain summits in a line of great evenness and regularity, at an elevation of about 2,500 feet above the level of the sea. It was a snowy gossamer veil over a mountain brow of the brightest emerald. Bordering the sea shore, the cocoa nut groves with their feathery and fan-like foliage, indicated the simple homes of the natives of the soil. As the *Kilauea* steamed along, we passed the localities where once dwelt the ancient chiefs, the birth-place and first home of Kamehameha I. and many scenes of historic interest. The once royal city of Kailua slept silently beneath its groves, with its glory and prosperity departed. The wind sighing through the cocoa boughs, sang the requiem of its past greatness.

Rapidly moving down the coast, and approaching the memorable bay of Kealakeakua, the scene changed, and the orange and coffee orchards and sugar plantations of South Kona, appeared beneath the mantle of cloud far up on the mountain side and enlivened the picture. There can be no more beautiful landscape than that presented to the sea from South Kona. As we passed we looked with emotion on the lands that were formerly possessed by the great moral heroine, Kapiolani, the gifted and good.

We rounded the black lava point, which forms one of the great natural breakwaters to this fine bay and secure harbour, and passed up the deep and wide entrance that leads to the anchorage near the wharf. We approached this point with many historical associations arising from the past, and crowding on our mind relative to the great discoverer of these islands, and his melancholy fate. The scene of that fate was before us, and notwithstanding its romantic and picturesque beauty, our thoughts only recurred to him—the spot where Captain Cook fell, and the point where his mortal remains were mutilated and consumed.

The *Kilauea* was anchored, and bidding adieu to its ever-vigilant and skilful commander, Captain McGregor, and its courteous and gentlemanly purser, Peter Mellish, we proceeded in a whaleboat to Napoopoo, where we were hospitably entertained by our excellent and enterprising friend, I. R. Mitchell, Esq. Rested, and afterwards regaled by a cup of the fragrant Kona coffee, and refreshed by the delicious golden oranges of Honaunau, we proceeded forth to enjoy a *paseo*. It was evening. The sun lingered over his ocean couch, as his golden tresses gleamed in the wave,

“Not as in northern climes obscurely bright,
But one unclouded blaze of living light.”

We wandered to the ancient *heiau*. Ascending its broad platform, we seated ourselves on the basaltic rocks of a ruined altar, turned our eyes to the west and contemplated the scene. The broad and elevated platform of the *heiau* was composed of a mass of igneous rocks, poured forth in ages past from the fiery mouth of the volcanic Pele. It was a monument of superstition facing the setting sun, and reared by the slaves of a dark and barbarous age. Before us was the spot where the shrieking victims of dark and idolatrous ignorance had been offered in sacrifice to hideous gods, the creatures of a darkened imagination.

Here had stood those horrible and barbarous gods, to whom their blind worshippers bowed with fearful adoration. Here had smoked the blood of their human victims, as the wild shouts and fanatic chants of their deluded adorers filled the air. There, to the right, a faint line on the green hill side still marks the “Pathway of the gods,” or *Ke-ala-ke-akua*, which gave name to the place. Down this pathway the simple, ignorant and deluded people, believed their gods descended to sanctify their *heiau*. There once danced their tyrannical priests, Hewahewa and his associates, begrimed with blood and hideous in their moral deformity.

I turned from contemplations so sad and humiliating, and looked to the right beyond the *pali*, where the cocoa grove, yet green and vigorous, waved in the light of the setting sun over the spot where Captain Cook—the Lono of the simple natives—fell, pierced by their lances. Their shadows slept on the quiet wave, as if like him they were but shadows now. Above, the angular spur of the hill shot out, where he was mangled and burnt.

To the left the grove of Napoopoo, waved over the cottages of the village. There fled the natives, when the *avenger* of the murdered navigator inflicted punishment upon their flying myriads. Two ancient cocoa trees, still standing have the marks of the balls of his guns, which passed through and through. They are yet open. A grape shot pierced another through the centre—the mark still there. They all show the position and range of his guns, and the flying column of the consternated natives. The guns were taken ashore and placed in battery on the *heiau*, where we now sit, and must have been six pounders from the size of the ball holes through the cocoa trees. Though all the actors in that thrilling scene have perished, the cocoa grove still survives in greenness and beauty. What a lesson on the brevity of human existence!

We looked to the sunset. The clouds were tinged with rainbow beauty. The sun was slowly sinking toward the wave. Far off on the rose-hued ocean, a low, golden cloud, like a pillow of light, was prepared to receive him. Softly, gloriously, he descended upon it. It seemed to sink with him beneath the wave, line by line, till one crimson billow, casting a long column of light, only appeared on the horizon's verge, and then subsided for ever.

We looked around upon the *heiau*. How much the structure resembled the platforms of the temples, the pyramids, the places of sacrificial worship, in ancient Mexico! We thought of Cholula, of Teotihuacan, of Mitla, and many other places, the scenes of ancient Aztec offerings and sacrificial rights. How much the ancient Hawaiian *heiaus*, their worship, their sacrifices, and their horrid gods resembled theirs! Then we thought of the many peculiarities and superstitions, which were common to both races—the ancient Aztec and the Hawaiians, and we asked, can this be a mere coincidence? We answered, no! There is more than a mere coincidence in all this. These people, these superstitions, must have had a common origin.

The ancient war-god of the Mexicans—Mexitli or Huichilopotchli—and the war-gods of the Hawaiians—the companion of Kamehameha the Great, in his wars—had the same attributes.

The Quetzalcoatl of the Toltecs and Aztecs, and the sons of the Hawaiians, had the same superstitions connected with them. They were both law-giving and enlightened gods—both went away with the promise to return, and the simple minded Hawaiians, on the arrival of Captain Cook, believed that Lono had returned, in the same faith that the Aztecs on the arrival of Cortez, believed that Quetzalcoatl had returned.

The goddess of the volcano of Iztaccihuatl, and the god of Popocatepetl, had their counterpart in the goddess Pele, and in her attributes.

Most of their minor gods were similar in character and attributes.

Their human sacrifices were the same.

Their mode of feather work was identic, and cloaks of Kamehameha I., and of Montezuma were alike. No other barbarous or semi-barbarous nations possessed the same art.

The matting, maro, and most of the arts of the ancient Aztecs and Hawaiians, were similar.

The obsidian axes and adzes of the Aztecs and Hawaiians, are the same in structure.

The canoes of the maritime Aztecs and those of the Hawaiians were similar in construction.

Their cranial development is the same. Notwithstanding our little acquaintance with the Hawaiian language, we find many words either identic in sound and sense, or derived from the same roots, as the ancient Aztec.

Their habits of life and mode of sleeping are the same.

Their feudal system if not identic, has few points of dissimilarity.

From all these facts, are we not led to infer that the first inhabitants of the Hawaiian Islands, were of the ancient Toltec or Aztec stock, and that they emigrated from the coast of North America? Subsequently, no doubt, there was an accession of population from Polynesia, Malay, and other regions to the West. Do not natural causes operate in favour of this hypothesis?

The maritime colonies of the ancient Mexicans, were to the East and North-east of these Islands. The trade winds and the ocean currents set from that portion of the coast in this direction, near three-fourths of the year. The canoes of the ancient Mexicans driven by these winds and currents would inevitably land on these Islands. Drift wood from Oregon, California and Northern Mexico, frequently lodges against the Hawaiian Islands.

According to their traditions, the Aztecs emigrated originally from the North west—probably some of their earlier settlements extended to California and Oregon. Then taking either point of emigration the probabilities are the same. The Hawaiian Islands may have been peopled from the North-west coast before the emigration of the Aztecs, and before they had arrived at that semi-civilization which existed among them at the time of the conquest.

Then the flora of North-western Mexico and the Hawaiian Islands is nearly the same.

The seeds of trees and plants have drifted with the ocean currents on to these shores, and an inhabitant of Mexico, now landing on these islands, would find much to remind him of his own country.

Reflecting on these facts as the shadows of night descended, we rose and walked away with the deliberate conviction that the primitive stock of Hawaii nei was from the western coast of America.

(To be continued.)

QUEEN ADELAIDE NAVAL FUND.

In a recent number we directed the attention of our readers to this useful little Fund, and at the same time promised a further allusion to it, in the hope that the officers of those services whose children are the special objects of its solicitude might be induced to appear more

numerously in the list of its supporters; as well as those of our readers who, not belonging to the Naval Service, are nevertheless interested in its welfare.

Hitherto the Queen Adelaide Naval Fund has been noiselessly, but actively at work, and to the full extent of its means, minus about a five pound note a year for stationery, etc. (for it has no paid staff, nor office expenses)—the objects of its foundation have been kept carefully and steadily in view.

Its past experience of seventeen years has fully justified the necessity for such a Fund, and we understand that this is felt so strongly by those members of the Committee who have investigated the cases of the several applicants for relief, that they are most anxious that the fact of its existence should be more widely known. Of this we are sure that the extent of the distress which exists amongst very many of the families of deceased Naval and Marine officers can only be really known by those who devote themselves to their investigation with a view to relief.

Within the last few years, various societies have been formed which assist those who, however willing they may be to assist themselves, nevertheless do find it a difficult, if not an impossible matter to do all that is required to maintain themselves in the position in which they are placed, or even to keep up an appearance corresponding to their rank in society. It will be sufficient for proof of this to refer to the aid given by means of the Schools at New Cross and Isleworth, the Naval Benevolent Fund, and this little Fund, the cause of which we are advocating. All in their different spheres are doing what they can, room enough there is, and more, for each and all. We wish them all God speed!

To revert, however, to the more immediate object before us, we wish to point out to our readers that the aim of this Queen Adelaide Naval Fund is to assist in the education of the young, the maintenance of the aged, and the casual assistance of those daughters of deceased Naval and Marine officers who are in temporary difficulty.

Considering the wide extent of the area thus mapped out, the idea seems almost Utopian; yet, nevertheless, a high aim is essential to success. From its at present very limited resources, each class of the persons above mentioned have been assisted, though in sad disproportion to the necessities revealed. The educational expenses of a few orphan girls are well provided for, and in the school at Isleworth they have all the advantages which so well regulated an establishment affords. At the General Meeting, held under Lord Hardwicke's presidency in April last, it was determined that grants not exceeding £12 a year each should be available for the benefit of three or four pupils in the Royal Naval Female School at Isleworth, who may have been admitted on the £12 or reduced list, tenable so long as they remain in the school, and on that list, provided the half-yearly report of their general conduct is satisfactory.

We willingly endorse the wisdom of this decision, for the reason that those only are placed on the reduced list of the school who are in

actual need of such a boon—and a happy thing it is that when once elected by the votes—we might almost say of the Navy, considering the number of officers whose names are on the subscription list,—this little Fund can step in to help the most needy orphans at the time they most require it preparatory to their after career.

But although the education of the young is undoubtedly the most important, yet the other benevolent intentions of its large hearted originator are kept strictly in view. Elderly ladies unable from failing health and strength to support themselves; others hitherto dependent on friends and relations for perhaps a bare support, now cut off from these; worn out gentlewomen; young ladies needing help to emigrate, to start themselves in life as governesses, companions, and (shall we add?) needlewomen. These and such as these are continually needing help, and while the Committee of the Queen Adelaide Naval Fund have been enabled beneficially to apportion the limited amount placed at their disposal, they have to deplore its utter insufficiency to meet the many extraordinarily distressing cases laid before them. We are able to give our readers examples of the cases which come to the notice of the Committee, and from these they will best gather the benefits which flow through this little Fund. Two daughters of a Naval officer, left on the wide world with an income not exceeding £16 a year, and this only from the Compassionate Fund; had the opportunity of emigrating with a clergyman's family. They succeeded in obtaining a portion of the necessary funds, and with the aid of this Fund were enabled to accompany their friends, and are now maintaining themselves comfortably and respectably in the colony where they have settled.

In another case, one who was earning a maintenance as a governess was afflicted with deafness, which incapacitated her for that employment. Assistance was given her to obtain lessons in photographic printing, which has enabled her to contribute to her own maintenance.

Another who kept a Boarding house, was threatened with a seizure of her furniture owing to her inability to pay her rent. This misfortune was averted, the house was retained and she became more prosperous.

Again, one who maintained a younger sister and herself by the profits of a small shop, received in 1862, notice from the landlord to quit, as he hoped to make more money of the house during the time of the Exhibition; by means of this Fund was aided in establishing herself as a needlewoman.

Instances such as these might be multiplied, but we think these are sufficient to shew the kind of distress which exists. But irrespective of these, our own experience unhappily assures us of the need of such a charity as the Queen Adelaide Naval Fund.

To us it would be a source of much satisfaction if anything we can urge on its behalf would induce our readers to lend their aid in extending its benefits.

The last Report of the Committee, dated May, 1867, is now before us,—it pleads very earnestly—and to the Naval and Marine Services specially for support. But for space we would reproduce its appeal,—

we trust, however, we have said enough to convince our readers of the need which exists, as well as to enlist their sympathy and co-operation in its behalf,—so that, as was well suggested at the Meeting before referred to, “instead of their annual income being some £250, it might at the end of another year be increased to twice or three times that amount”—and, in the words of the Report, be “more in accordance with the needs which it is the object of the Queen Adelaide Naval Fund to assist and alleviate.”*

* For any information our readers may require, we refer them to the Honorary Secretary, Frederick J. Bowden, Esq., Admiralty, Somerset House.

THE NAVIGATION OF THE ROYAL NAVY.

ASSUREDLY the navigation of the British fleet, next to having it, is one of the most important features of its management. It is its proper disposal under all conditions in all parts of the whole world, and it above all things effects what the Commander in Chief or the captain principally desires. But the duties of the officer who had this important charge hitherto have so much increased of late years that the extensive knowledge, meteorological and hydrographical, essential towards good navigation could not be collected by one head, for it was occupied (when not navigating the ship) in many other duties concerning her, instead of being engaged in the numerous branches of those subjects intimately connected with navigation. For instance, how could this officer investigate the subjects of oceanic currents, periodical winds, such as Monsoons and Trades, their limits and periods of change, all of which affected the navigation of the ship when making passages; the knowledge of surveying under sail or at anchor; of not only making but laying down angles, the process in fact of making a chart of a coast, or a plan of a harbour or anchorage, drawing it to scale. How much information of this nature has been lost, the opportunities afforded by our ships of war visiting foreign parts, simply because the master either had some other duty to perform, or was not qualified for the task. It was time this was all remedied, as we have no doubt it will be by the navigating branch of officers now established, whose main duties should be all matters belonging to those subjects, making other matters secondary to them. They will be in fact the scientific officers of the fleet;—every subject, every particular connected with Nautical Astronomy and the various important branches of Hydrography, which should be, will now be familiar to them. To project an occultation of a star by the moon, or an eclipse of a heavenly body, the handling a theodolite or the levelling instrument, the different ways of obtaining a base line, all these subjects should be as familiar to them as the construction of the Mercator's chart or the working of a day's work. We are glad to see the great work of attending to all these duties taken up in earnest,

being satisfied that when they are made the principal occupation of one class of officers, who it would appear are to be reared in the service as the authorities in all these matters, they will be looked to—the stores of such information will be increased, as they should be, and hereafter, an officer in command of a ship when he goes to a foreign coast will soon find himself in possession of a mass of information of the utmost importance to him—will gladly fill up what may be wanting, and will improve what may be necessary where time has been busy in working changes, or will confirm with his own observation the accuracy of those who have gone before him. The subjoined regulations having been carefully considered, are issued by the Admiralty on this subject, and as they are already in force we commend them to the special attention of those who are connected with the Naval service, satisfied that they will not only raise the professional character of those to whom they are directed, but that the subjects to which they specially allude will very soon wear a far more imposing appearance of importance than they have hitherto done in the halls of science.

The following circular relating to navigating Her Majesty's ships has been addressed to Naval Officers by the Lords Commissioners of the Admiralty, and will be followed by a further memorandum regarding uniform :—

“ RANK, PAY, &c., OF NAVIGATING OFFICERS.

“ My Lords Commissioners of the Admiralty have been pleased, under the authority of Her Majesty's Order in Council of 26th June, 1867, to establish the following regulations :—

“ 1. The titles of the officers to be :—Navigating cadet (in lieu of naval cadet second class) ; navigating midshipman (in lieu of master's assistant) ; navigating sub-lieutenant (in lieu of second master) ; navigating lieutenant (in lieu of master) ; staff-commander ; staff-captain.

“ 2. Gentlemen to be entered as navigating cadets between the ages of 13 and 15, under the regulations now in force ; the regulations for the entry of officers at later ages from the merchant service, either as navigating cadets, midshipmen, or sub-lieutenants, to be cancelled.

“ 3. The examinations to be the same as at the present, except that the regulations regarding forfeiture of time for rejection at the Royal Naval College are to be assimilated to those now in force for sub-lieutenants. Officers not passing at the Trinity House within two months after passing at the Royal Naval College to be discharged to the shore, and deprived of three months' seniority ; and those not passing within three months to be dealt with as their lordships may think fit, either as to further deprivation of time or removal from the service, as the circumstances in each case may deserve.

“ 4. Navigating lieutenants, instead of passing for line-of-battle ships after three years' service in that rank, to be required to pass at

the Trinity House for ships of the first class drawing twenty-six feet of water and upwards.

“ 5. Navigating sub-lieutenants to rank with sub-lieutenants according to date of commission, and above chief gunners, chief boatswains, and chief carpenters. Navigating lieutenants to rank with lieutenants, and staff-commanders with commanders, both according to date of commission. Staff-captains to rank with captains under three years' standing.

“ 6. The regulation that navigating sub-lieutenants must serve two years in that rank, before being qualified for promotion to the rank of navigating lieutenant, to be abolished.

“ 7. Navigating lieutenants to be qualified for promotion to the rank of staff-commander after ten years' service as navigating lieutenant, or on attaining fifteen years' seniority with not less than seven years' service as navigating lieutenant. In both cases, five years' service must be sea service, as defined by Her Majesty's Order in Council of the 9th of July, 1864, and the officer must have passed for first-class ships. It is however, to be distinctly understood that promotion to the rank of staff-commander is at the discretion of their lordships, and is only to be given to officers of good character and qualifications.

“ 8. Navigating lieutenants to be eligible for promotion to the rank of staff-commander for distinguished or highly meritorious service, provided they have completed two years' sea service as navigating lieutenants. Should an officer to be so promoted not have passed for first-class ships, he is only to be promoted to the rank of acting staff-commander, but to be confirmed with his original seniority, provided he pass within a reasonable time after his arrival in England. In such cases, the regulation that an officer must serve three years before he can pass is to be dispensed with.

“ 9. Officers of the navigating class may be transferred for distinguished service in presence of the enemy to the active lists of those executive officers with whom they may rank at the time of performing such service, carrying with them their seniority, and the benefit of their larger rates of full and half pay (if any) until subsequently promoted to a higher rank. Navigating officers may also, at the discretion of their lordships, be promoted to a higher rank in the executive branch, should the circumstances of the case appear to deserve it.

“ 10. The rank of staff-captain to be confined to master's attendant, assistant master's attendant, and Queen's harbour masters, and to masters of the fleet when so employed.

“ 11. The pay of the navigating cadets and navigating midshipmen to be the same as at present.

“ 12. Navigating sub-lieutenants to receive five shillings per diem, to be increased to seven shillings and sixpence per diem after two years' service; half pay as at present.

“ 13. The full pay of navigating lieutenants and staff-commanders to be as follows, viz. :—

		PER DAY.	
Under 5 years' service	.....	£0	10 0
Above 5 years' & under 10 years' service	..	0	12 6
" 10 " "	15 "	..	0 14 0
" 15 " "	20 "	..	0 16 6
" 20 " "	25 "	..	0 19 6
" 25 "	1 1 6		

} Provided they
} have passed for
} 1st class ships.

" 14. Staff-commanders on promotion to receive fourteen shillings per diem, or such higher pay as they may be entitled to by service.

" 15. Half pay to remain the same as at present, except that staff-commanders on promotion are to receive eight shillings per diem, or such higher pay as they may be entitled to by service.

" 16. Navigating lieutenants and staff-commanders, when in command of any of Her Majesty's ships or vessels, to receive the same rate of command money as lieutenants and commanders.

" 17. Store and other allowances, widows' pensions, compassionate allowances, &c., to be the same as at present.

" 18. All navigating officers to be placed on the reserved list on attaining the age of sixty; they may also be removed to that list under the conditions laid down in the first, second, and third paragraphs in Her Majesty's Order in Council of 31st March, 1865.

" 19. Staff-commanders to be allowed to retire when unfit for further service, or on attaining the age of fifty-five, on the following scale, viz.: —Under fifteen years' service, no increase to half pay to which they may be entitled by service: after fifteen years, and less than twenty years' service, twelve shillings per day; after twenty years, and less than twenty-five years' service, fifteen shillings per day; after twenty-five years, seventeen shillings and sixpence per day. Officers having served twenty years in the ranks of navigating lieutenant and staff-commander to retire with the rank of captain; officers having served fifteen years in those ranks to retire with the rank of commander. No officer is, however, to be entitled to the increased rank or to the increased pay on retirement, unless he shall have in the ranks of navigating lieutenant and staff-commander at least seven years' sea service as defined by Her Majesty's Order in Council of July 9th, 1864.

" 20. All time served as acting navigating lieutenant and four years of time served as navigating sub-lieutenant to reckon towards increase of full and half pay and reserved half pay.

" 21. Time served as master attendant, assistant master attendant, and Queen's harbour master, to reckon as service towards increase of full and half pay, and reserved half pay. On retirement from these positions officers will be granted the rank of retired captain, and will be allowed sixpence a day for every complete year's service in such capacity, in addition to their half pay or reserved half pay.

" 22. Navigating lieutenants who may hereafter be placed on the reserved list may, at the direction of their lordships, be promoted to the rank of staff-commander on attaining fifteen years' seniority, if of good character and qualifications.

" 23. Time served in revenue vessels to count as sea time. Time

served in the coast guard on shore, or in the transport service on shore, to count as sea time in the proportion of two years in the coast guard or transport service as one of sea service. Time served as mail agent or transport agent afloat or abroad to count as sea time for the first three years, and after that in the proportion of three years agent's time as two of sea service. These regulations only to apply to increase of full and half pay and reserved half pay.

" 24. Navigation officers, whatever their rank and seniority may be, are in all matters of command, and in all details relating to the duties of the fleet, and to the discipline and interior economy of Her Majesty's ships, to be held subject to the authority of any officer, not below the rank of lieutenant, who may be in charge of the executive duties of the ship, or in charge of any other special service or duty, of whatever seniority such officer may be.

" 25. Navigating officers in command of Her Majesty's yachts and store-ships are not to be interfered with by officers commanding any of Her Majesty's ships or vessels of war, except under special or exceptional circumstances; nor are they, when on the home station, to be required to wait on any officer in command of one of Her Majesty's ships or vessels of war under the rank of commander; but in foreign stations they are to report themselves to the senior officer present, whatever his rank and seniority may be.

" 26. The officers borne on the books of home ships for pilotage and other duties, and for the command of small vessels and tugs, who now are styled acting masters and acting second masters, although they have never passed the examinations required for those ranks, are to be styled chief officers in Her Majesty's fleet instead of acting masters, and senior mates in Her Majesty's fleet instead of acting second masters, as laid down by Her Majesty's Order in Council of 11th December, 1865, in the case of acting masters and acting second masters in the coastguard service.

" 27. These regulations to come into force from the 1st July, 1867; and to apply to all navigating officers on the active lists.

" By command of their lordships,

" HENRY G. LENNOX.

" Admiralty, July 2."

It has been advanced that the altering and realtering of the regulations concerning this branch of the Naval service, argues against a naval administration changing with every change of government. But even with the present form we have come to the right thing at last. The old term of *Master* was derived from former days when Her Majesty's officers were more soldiers than sailors, and their ships were sailed for them by sailing masters from the Merchant fleet. But times have been long changing and our officers are as good navigators and sailors as they are soldiers. What is really found is that the subject of navigation extends to the whole world, and that as a knowledge of meteorology is also essential to make a good navigator, and that ocean currents influenced by serial currents and changes

affect coasts and bays, throwing up banks and shelves where none existed, and that with the wide range requiring attention, everywhere the subject has grown to that extraordinary magnitude that requires continual study to master, and therefore should at least be begun early, as there must be some other routine duties which belong to a ship of war that must also be performed. The navigating officer we therefore look on as a most wholesome change in the Naval service. In fact, the important claims of navigation in all its branches, are now likely to be well met in far better spirit than under the old system of confiding it to one who had very many other duties to perform.

By change of administration one set of officers improve on the plans of others, and it seems that to the present administration may be attributed the credit of having given us an established class of officers, well organized and paid for their services, with quite enough of their own peculiar duties to perform if they do them well—which duties combine subjects of the most useful as well as instructing kinds, and from which they may derive not only pleasure and honour, but also highly interesting philosophical and ornamental amusement in more branches of science than one, tending to improve the mind of the individual, and to make him a more valuable member of society. On the whole, we congratulate the naval profession on the change, and we also congratulate the authors of it, on having exercised their experience in framing their new laws and carrying them into effect.

CIVIL LAW AND MARTIAL POWER.

(Concluded from page 378.)

OUR readers will have already had sufficient about the Jamaica outrages and Governor Eyre, to which the attention of this journal would never have been directed but for the barbarous conduct of the Royal Navy. to use the mildest terms, in the killing and slaying of the miserable inhabitants of that island. The excellent letters we have therefore reprinted have shown up the enormities of those offences, in which predetermined malice against those unfortunate individuals, was, we are satisfied, evident.

And a writer in the *Daily News* appositely says, "If I see my enemy in a position in which I may put him to death under colour of law—if I rejoice to see him in that position—if, instead of extending to him a mercy which it is unquestionably in my power to extend, I eagerly strain the law in several ways to get him killed, then whether I have kept within the letter of the law or not, I have the guilt of murder on my soul. It is evidently the opinion of the highest legal authority in the land that Governor Eyre did not keep within the letter of the law."

Thus much for our legal forms and ceremonies, and ignorance of

law, common enough, and perhaps excusable among naval officers, but most inexcusable among those holding the onerous position of government.

But our naval officers will have found out the false position they were placed in in Jamaica, the ridiculous and mistaken, yet sad light in which they authorised barbarities and crimes, that were committed, at which humanity shudders—the mock courts-martial, hangings, and shootings which followed them. And this ignorance, where have the effects of it fallen? On those who ought to have known better? Not so! Those unhappy islanders undeserving of their fate, termed by their Governor “savages,” and some few others free from that unmerited appellation, have been consigned to their graves, as the forfeit of this ignorance on the part of the abettors, who have been shielded from the course of the law of their land by a body of men called grand jury. It may be all gone by, but its effects on English minds are too deeply engraved ever to be indelibly eradicated.

Let us hear no more of martial law where civil law always reigns, and let our naval officers of all things remember that civilians can never be brought before martial courts. On this subject the following copy of a circular despatch to colonial governors, dated 30th January, 1867, on the subject of martial law, has been presented to both Houses of Parliament by command of her Majesty:

“Downing-street, Jan. 30, 1867.

“Sir,—Although I do not know that there exists in the colony under your government any law authorising the proclamation of martial law by the governor, I think it advisable to communicate to you, for your information, and if necessary for your guidance, an extract of a despatch addressed by me to the Governor of Antigua, in which I have stated the views of her Majesty’s government on this subject.—I have, etc.,
(Signed) “CARNARVON.”

“Extract of a Despatch from the Earl of Carnarvon to the Officer administering the Government of Antigua, dated Downing-street, 30th January, 1867. No. 40.

“An enactment which purports to invest the executive government with a permanent power of suspending the ordinary law of the colony, of removing the known safe-guards of life and property, and of legalising in advance such measures as they may deem conducive to the establishment of order by the military officer charged with the suppression of disturbances, *is, I need hardly say, entirely at variance with the spirit of English law.* If its existence can in any case be justified, it can only be because there exists such a state of established insecurity as renders it necessary for the safety and confidence of the well-disposed, that, in times of national emergency, the government should possess this extraordinary facility for the suppression of armed rebellion. But whatever apprehensions or disturbances may exist in any of her Majesty’s colonies, it is certain that no such chronic insecurity prevails in any of them, and in no colony, therefore, should the power given by the present law to the governor of Antigua be

suffered to continue. I think it, therefore, necessary to repeat the instructions given by my predecessor to Colonel Hill, and to request that you will cause to be submitted to the Legislature an act repealing so much of the law as authorises the proclamation of martial law. I have only to add, that in giving you these instructions, her Majesty's government must not be supposed to convey an absolute prohibition of all recourse to martial law under the stress of great emergencies, and in anticipation of an act of indemnity. The justification, however, of such a step must rest on the pressure of the moment, and the governor cannot by any instructions be relieved from the obligation of deciding for himself, under that pressure, whether the responsibility of proclaiming martial law is or is not greater than that of refraining from doing so."

The difference between a humane governor who knows his duty and one who terms his people "savages," with no regard to their improvement or their happiness, is well exemplified by comparing the late outbreak with the present state of Jamaica, as shown by the following extract from the "*Kingston Journal*," of June 3rd:—

"THE TAXES IN JAMAICA.—The humbler classes throughout the country have shown an extraordinary willingness to pay their taxes, and the 'upper,' 'property and governing,' class who expected to see the people break out into open riot when the taxes were demanded of them and who hinted to the people that they should resist the tax-gatherer, have been very much disappointed. It was represented that the labouring people of St. Ann had been pulling down their houses to avoid the taxes. This we have been assured is not true, whilst we know that in other places the taxes are paid before they are demanded. In the Woburn Lawn district of St. David, we have assurance that the deputy of the collector of dues was kept up till midnight receiving money from persons who had come from great distances to pay taxes. This speaks well for the people, especially in a parish that has been considered partly the seat of rebellion!

A FOREIGNER'S ACCOUNT OF US—*The Admiralty.*

(Continued from page 368.)

BEFORE we part from the Hydrographic office of the Admiralty, let us say a passing word on the importance of this establishment. To a committee of naval officers, that has to consider the movements of the fleets of England in all parts of the world, it is the very beacon light of their councils! Without it, how could their opinions be formed on many matters concerning those ships? Even the limits of stations of their Admirals abroad and at home are readily shown on the chart. Is a ship overtaken by a hurricane and damaged? Does a

ship come in contact with another? like the *Amazon* a short time ago (which vessel actually foundered). Does a ship strike upon a rock? or does she accidentally get on shore on some foreign coast? How essential for consideration of the circumstances in all these cases is the chart, and if so, how much more essential that it should be unimpeachable for its truth! The Board of Admiralty without such information, wherewith to consider the despatches continually arriving from abroad, containing accounts of those transactions and others of their fleet in distant seas, without such information as a good chart conveys, would literally be in the dark! portions of those despatches as to the "whereabouts," and the true configuration of the locality in question would not be intelligible! Such facts are sufficiently known to that Board, and for reasons which every day's experience displays, it wisely keeps not only the charts within their reach, but also an able superintendent, who himself has already taken his part in their construction, to report to that Board on those transactions, and thus the Board has not only the chart to assist in forming its opinion, but also the opinion of that officer, their hydrographer, to light them to their conclusions, and to confirm them in the view they may take as to the measures to be adopted.

Now those charts, which extend to all the world, have been carefully collected, but not without great expense to the State; from the early days of the great English circumnavigator, Captain Cook, and they certainly compose the first great emporium of hydrography in the whole world, and yet it is one of the most modest dimensions; an office which ministers not only to the safety of the huge fleet of ships of the State, but also those of the Mercantile vessels in the great and important subject of hydrography in all its branches, is cooped up in a few rooms of the upper floors of this building. Compared with what it was in former years, it is now in a superior condition, but compared with what such an office should be for a great Maritime State like England, it is but the mere nucleus of what it ought to be—for taking all the various subjects which it includes;—the chart of the sea shore, or the ocean itself, its depths, dangers, currents, and channels, its various shores, their lights, beacons, and buoys, and their tides, and the influence of these on the weather, thus throwing, as it were, into the arena of subjects, that of meteorology, to say nothing of pilotage, which, although the duty of another office, is virtually the offspring of hydrography. Were all these subjects duly treated, along with that formidable one the compilation of sailing directions to accompany them, and the construction of the chart itself, they might well occupy a building the size of the Admiralty itself, and yet not be overdone! And yet all these matters individually and collectively along with the never flagging attention required to the daily passing events of the fleet, relating to them and the direction and control of surveys at home and abroad, are constantly going forward under the hydrographer's auspices. All these things are done without any trouble or confusion, silently carried on in some half dozen rooms; which, themselves and their connecting passage, contain not only those archives in

which are lodged the drawings of the surveys from which the charts are formed, but a number of copies of the charts themselves, which from these rooms are not only distributed to the fleet, but also dispensed to the public as well as to foreign communities and governments that may desire them, but also those of our Mercantile Marine. Well may the Board of Admiralty treasure up their hydrographical resources, so well known not only at home, but in the remotest corners of the world; and well may they make much of those busy heads who are daily contributing under their own roof, with their matured and experienced judgment, to that solid safeguard which these charts with the sailing directions accompanying them, supply to him who chooses to use them. That Board has at length made the discovery that pure and unalloyed hydrography is an invaluable commodity!—one that will repay the care bestowed on it; nay, the expenses of providing it, by conducing to the well being of the country to which it belongs, in the promotion of commerce, in the safety of its fleets, and in the dispatch and celerity of navigation. Turn we now to other matters, for we are satisfied that, of all countries in the world, the garden of hydrography should be well cultivated in that which is so essentially maritime as England.

Before sending expeditions, in war-time, to the shores of countries hostile to Great Britain, she naturally looks to the defence of her own against a foreign fleet. We know the vigilance with which they were watched during the first empire, and the alarm occasioned by the appearance of a suspicious sail on the horizon. Since those days, thanks to a constant state of peace, the coast guard has been established, much less for the purpose of preventing foreign invasion than for preventing the schemes of smugglers. In consequence of the proximity of France considerable fraud of revenue had occurred. The extent to which smuggling was carried on the Cornish coast is now matter of history. An honourable resident of that part of the country has found in the caves of his shore two hundred tubs of brandy of which nobody seemed to know anything. How could they have got there? A written notice enjoined him under severe threats to breathe not a word about them, and frightened he shut the door determined to know nothing of them. Some days afterwards the tubs all disappeared excepting two or three which were left him in reward for his silence. But mostly merchandise just landed from some vessel has been half buried in the sand, or concealed in the interior of some cavern difficult of access at the foot of the cliffs. The sale of these articles, which had paid no duty, had been settled beforehand; the only difficulty was to convey them into the interior of the country. But men getting into the farms at night, took the horses from the stables, harnessed them to carts of the farmers, and then took them to places agreed on! Horses and carriages were carefully returned without noise or disturbance, and a present was even left for their owner in the shape of a handsome shawl or some considerable amount of lace. The fact was that the country population without openly assisting the smugglers encouraged them by a sort of moral complicity, generously

paying them for the service rendered ; and thus avoided any impeachment of character in rewarding what became a veritable profession. The adventures and enterprises of these lawless gentry even found approval among the weaker sex. Sailors and fishermen voluntarily engaged in this illegal commerce, and many a fine vigorous young fellow has shewn his metal worthy of a better cause in resisting authority in his pursuits. The annual sum lost to the country in those days from the clandestine trade in French merchandise was estimated at £800,000.

The public treasurer has no fancy for romance, especially when his interests are at stake, and has very naturally no sympathy whatever for smugglers, and so resolves to maintain his rights most vigorously. In 1822 a system of blockade backed by fifty-two cruisers undertook to clear the Strait of Dover and the British waters, of these terrible enemies of the custom-house. In two years, 1822 and 1823, on the coasts of the united kingdom fifty-two vessels were seized, and three hundred and eighty boats engaged in the contraband trade. On shore the blockade was composed of one thousand five hundred officers and men of the Royal Navy, under the orders of the Admiralty, and an army of coast guard then under the orders of the customs. The contest was active between the officers of the government and the smugglers. On both parts deeds of heroism were worthy of being the subject of an epic poem. Still this system was ruinous to the state, which expended in one way what it never recovered in another. Is it then to be attributed to the enterprise of the preventive force that smuggling has been all but abolished from British shores? No indeed, what put an end to the business of the smuggler was the gradual reduction of duties. Who was on the wrong side in those days? the government or the smuggler. Perhaps both, for the fraud arising from high duties has nearly disappeared without returning to the time of a better policy that made a step towards free trade. Swift used to say, that in the arithmetic of the custom house two and two instead of making two made but one. Why did he not at the same time point to the remedy for such things. In these days the remedy is known, and that is not to ask an immoderate price, more than the country will give. By lowering prices a fair balance has been established between the expenditure and receipt in the English custom house.

In 1857 the custom house vessels were placed under the orders of the Admiralty. At present to get into the service it is necessary for the candidate to have served seven years on board of a man-of-war, and to bring certificates of good conduct. At first sight the appearance and uniform of a seaman of the coast guard is not different from that of the Royal Navy. There are the traits of character strongly marked, features with a sort of stocial indifference to danger. He braves the fury of the elements with the same air of defiance with which he regards the enemy. The man-of-war's man however, is only distinguished by a broad shirt collar of blue cotton and white border thrown back over the shoulders, exposing a neck bronzed by the sun and effects of the weather. Those of the preventive service on

duty, on the contrary, wear a woollen shirt and a neat cravat of black silk, while on a large band round their hat the word coast guard appears in gilt letters. A leather belt round the middle carries a cutlass, and in large breast pockets he has a brace of pistols. These weapons now never used remind one of the days of adventure when these same men had to defend themselves from the pirate. Some of them wear certain marks or badges or stripes on their coats, which are given for good conduct. Three of these are all they can obtain. If they have these three of embroidered silk and gold on the arm, the first is for good conduct, the second for very good, and the third for excellent. Each of these stripes of distinction entitles the bearer to an additional penny a day to the pay of the coast guard man.

During the day they have only to walk about with a telescope along a portion of the shore, and observe every vessel and boat within sight; but how much more is exacted from them at night? Obligated to appear at the principal guardhouse every morning, they there learn what they have to do at sunset. A party composed perhaps of seven men, of which one looks out by day and the other six take their turns during the hours of darkness. They then patrol the sea shore, whether of rocks or sand, and meet parties of the adjacent station with whom they communicate and deliver, or receive messages in reference to their duties. In the winter season, when the weather is bad and the sea runs high, the lives of these men are exposed to considerable danger. About five or six years ago on a dark stormy night, an officer of this service, stationed at Hunstanton, on the coast of Norfolk, lost the winding path along the edge of the cliff, and fell from a height of eighty feet down among the fragments of rock at the foot lining the beach. His fall was of course unknown to any one, and after several days' search, his mutilated remains were found. On the same night also another accident occurred on another part of the coast, that also proved fatal.

The coast guards, in fact, by day and night have to perform the duty of the police of the sea. Every vessel or boat in the least suspected is notified from one station to another by means of telegraphic communication, which reaching from one place to another extend round the coast of Great Britain. And as the contraband trade declines, reducing the opportunities of risking life for the fiscal benefit of the country, these are made up for by a commendable zeal in saving life from wrecks. No doubt it was an easier matter to suppress fraud than to do away with the tempest, and it is particularly in contending with the fury of the sea that the coast guardsmen are celebrated as boatmen. On discovering a vessel at sea with signals of distress, they are as ready to go out to her relief as Newfoundland dogs. At each coast guard station there is a life-boat, with which they immediately put off to the distressed vessel. But these life-boats must not be confounded with those of the National Life-Boat Institution. These men have neither life-belts nor any apparatus to support them at the surface in case of accident, and as to *their* life-boat, it is far from being constructed in the scientific way in which those of the Institution are.

The number of persons saved in the course of the year is estimated at about six hundred, and the property about seven or eight thousand pounds sterling. This is no light service which these brave seamen perform in defiance of the elements, of a far more formidable nature than contending with smugglers. In 1859 four coast guardsmen, of Pevensey, on the Sussex coast, were ordered to launch their boat and proceed to rescue a small vessel about a mile off shore, but which the heavy sea that was running seemed likely to overcome. The sea was very bad and the danger evident enough, but the officer had given the orders and they were sufficient, so off they went. In a few minutes the boat was capsized about a hundred yards from the beach, and the four seamen were contending, holding to the boat bottom upwards, but they were unable long to contend with their condition, and sunk with the wreck of the boat. Nor are such catastrophes at all uncommon. In these cases an enquiry is held, and a verdict is generally given of accidental death :—the widows are assigned a small pension, and the orphans if any are frequently adopted by the other boatmen, and thus the matter ends. Other seamen fill up the places of the lost and contend with the sea like them. It is impossible not to admire such heroic devotion, and how a nation so conscious of her glory does not take measures to prevent such a sacrifice by efficient measures. These men receive but a limited reward for their services even in saving merchandise of great value from wrecks. It is true that on the first of March every year the Government gives two medals, one entirely honorary, the other which is accompanied by a pecuniary present for each ship, which forms the centre of each district of the coast guard. Among the things thrown up by the sea and which the coast guard is directed to collect and to transmit to the authorities, they find some sad victims of the waves. On the coast of Norfolk lately a dark object on the surface attracted their attention that proved to be the corpse of a female.

Most of them have Government buildings for their residence, and those who have not are allowed five pounds a year for lodging. The cottages built for them generally have four rooms, two above each other, with a kitchen and washhouse, these mostly detached. They have also a garden in front, where the women dry their washing, etc., and also a paved yard behind, where the men have an opportunity of displaying their taste in the way of ornament and paving, etc., in the mosaic style. It is not the general lot of seamen, who have passed their previous life at sea in a ship of war, to enjoy themselves on shore, nevertheless, Jack as he is always called, distinguishes himself as a family man. Even when at sea he has always his ditty box, in which are carefully deposited his letters and those little secrets of the heart, such as a bit of ribbon, perhaps a lock of hair. Let no one intrude on this little sanctuary of the affections. That mysterious affair, the ditty box, is to him the germ of domestic happiness. When this comes hereafter to be opened in more prosperous days, and looked into by a pair of dark eyes, that same person, its owner, is no longer the wanderer on the ocean drifted about like a piece of seaweed but is tied to his home.

Those coast guard houses in fact in the eyes of the visitor are emblems of happiness in their way. Their interior is the very specimen of neatness and propriety. At the entrance is a neat mat made by the old seamen on board his ship, and the little parlour displays the simplest possible furniture, and, whether of wood or metal, bearing proofs of daily polishing. A carpet, muslin curtains, a neat little table with a few books, chairs, and flower pots suspended from the ceiling form the little stock of furniture in these modest abodes. The order of such a little establishment belongs to the manager. The British sailor is not always that uninstructed person he is taken to be. He knows very well how to blanch the linen, to keep the house in order, and cook as well as his wife. But she also has her part to perform. She is a workwoman and can make ladies' dresses, and contributes with her hands to increase the slender allowance derived from her husband's pay. Let her be seen on winter nights, when the wind is howling round their little abode, waiting in the corner of their room the return of her husband. She is preparing his meal, and welcomes him on coming in from his round, when he clasps his children to his breast and proceeds to light his pipe.

These houses, in groups of five or six, are generally sheltered by a surrounding wall, perhaps also enclosing a bit of ground which is under cultivation. Sometimes the wall is between the houses and the sea, there being nothing but the hills on the opposite side. At a short distance from their residence is the look-out tower, from whence the sea may be overlooked to the horizon; but this tower, sometimes of wood and sometimes of brick, has nothing picturesque about it. When new it has the appearance of a pigeon-house, when old it is contemptible. Sometimes their look-out places consist of only a platform, more or less, with a parapet on the summit of a rocky height perhaps with a kind of balustrade about it, in the midst of which stands a flagstaff accompanied by two pieces of artillery. Sometimes the coast guard people go out in their boats to overhaul suspicious looking vessels, a part of their duty often attended with danger, for frequently they are met by men who are half smugglers and half pirates, who have made up their minds to part with their merchandise to the coast guard at as dear a rate as possible. The women themselves are not always strangers to these audacious attempts at deceiving the officers of the coastguard, and more than one Cornish heroine has become illustrious from her encounter with the men of the coast guard. One of them lost her heart to the son of a fisherman, a ferocious looking man who had promised to marry her after about two years of work. But even their marriage happened to be delayed by a circumstance which seemed of little importance. At a particular time there was reason to believe that a vessel (a brigantine) would endeavour to run some contraband goods, a vessel which had often eluded the vigilance of the coast guard. At night it was impossible to surprise her at sea, while in the morning she would be seen securely anchored and off some approachable points of the coast. The coast guardman in love receives orders to go with his comrades and board

the suspected vessel. But this was no easy task, for if for some time a black object was seen on the summit of the waves, the brigantine would escape at the moment she was supposed to be in their power. One night however, the coast guardmen distinctly saw a sail on the horizon, and although it was dark enough to rejoice the heart of a smuggler they did not fail to keep sight of her. Consequently, a regular attack took place, and at the moment of boarding the report of a pistol was heard, which seemed to be fired by a boy, and was supposed to announce that the brigantine was determined on resistance. But she was captured, and what was the surprise of the assailants when they found among the group of crestfallen smugglers that they could not discover the boy who had fired the pistol, and whom they had distinctly seen by the flash. It was in vain they sought for him both inside and outside of the vessel, but some days afterwards in one of the bays of the Cornish coast, the corpse of a female in sailor's clothes was found, and in the face the coast guardman recognised the features of the girl to whom he was to be married. Had she fallen overboard by accident, or had she voluntarily thrown herself into the sea to avoid the shame of the discovery that awaited her if she had been found by her lover in such bad company? This is a mystery which has never been cleared up. In these days such stories are unknown even on the wildest shores of Great Britain. The coast guardmen whom I have questioned, have invariably replied, "We have no more adventures." Everyone is satisfied that if this is not an English romance, at all events there was the materials for one lost. If report speaks true there is but little smuggling going on in the present day, except through the Custom's officers. But the coast guard themselves are they not the greatest smugglers after all in certain cases. Preserve us from lending a too ready ear to such accusations, belied by the honest forms and simple manners of those old seamen who are accustomed to look death in the face, and serve their country honestly in spite of the storm.

Accustomed to the strictest discipline, the English coast guard form the materials of both fleet and army. Their servitude which by turns is afloat and on shore is entirely amphibious. Their fleet consists of thirty-eight watch vessels, a dozen ships stationed in certain districts, and forty-eight cruisers. To keep the men at work two men are sent alternately from each station to their sea work and to take to their seamen's duties again. Thus they traverse gradually the whole coast from the coast of Norfolk to that of Scotland. These changes last for six weeks generally for each of the men once a year. During that time their wives remain at home in their cottages, counting the days anxiously and trembling at every gale that comes, for those shores are dangerous and more than one mariner has left his bones on them. The coast guard ships and the small vessels which attend on them assemble from time to time in one of the ports, where they are inspected by the Lords of the Admiralty. A captain and lieutenant command the district, provided with lodging by the government. Each station has a chief boatman who of course occupies the best quarters reserved for the coast guard. They are generally distinguished

by the two letters C. G. on their hat, the buttons of their jackets bearing the anchor, and an anchor on crimson ground embroidered on the sleeve of the left arm.

¶ After twenty years of servitude from the time they entered the Navy, a coast guardman who would be worn and weakened by age may demand his retirement. He obtains then on the report of an examination by medical certificate, an allowance of twenty pounds a year, and is at liberty to pursue whatever other occupation he pleases. But he very rarely leaves the sea coast to which he has become attached, and he generally prefers to end his days in sight of the sea, and within even the hearing of those waves which remind him of the scenes of peril he has passed in the course of his life.

The Admiralty superintends all the naval affairs of the state, but at the same time there is an alliance between it and the Trinity House, which exercises some authority in its turn over the Merchant service. This however is another subject in the midst of the various docks of London, from which an idea may be had of the commerce of the English generally. But it is quite true, that the Merchant fleet is the cradle of the British navy, and it is from the volunteers of that service that the Royal Navy draws its resources incessantly.

When King James the First, angry with the people of London, threatened to remove the Court to another part of England, the Lord Mayor is stated to have replied, "We much regret that your Majesty would deprive us of your royal presence, but in the event of your Majesty leaving us would you kindly leave us the Thames? This river, of far greater importance than royal protection, has, in fact, contributed to the commercial greatness of London, and to the stranger what a spectacle it presents. Where else could be found a parallel of floating riches? What is called the port of London extends from London Bridge to the North Foreland—such at any rate are the limits assigned to it by Charles the Second, but, in fact, the port traced along the river does not extend below Gravesend. And in reference to this subject the port must not be confounded with what the city considers as such, which is from Staines (in Middlesex) to a mark in stone on the bank of the river in Essex. According to the old charters the Corporation of London are charged with the care of the river, and the Lord Mayor has the title of "Conservator of the Thames." For many years the Parliament has deprived the Corporation of the privileges of conservancy and transferred it to a Board, of which the Lord Mayor is the chairman. There is a range of this river thirty-two miles in extent covered with the produce of the known world. The vessels are placed quietly along the two banks, with sails furled and yard arms locked in each other, like the wings of hugh ocean birds, leaving in the middle between them the highway of navigation. Quiet and steady, however, the noble river is subject to the flow and ebb of the tide which brings up the ships from abroad and reconducts them to sea.

Huge vessels come up but slowly through such a concourse of ships as is collected here, of all kinds, steamers, colliers, vessels laden with

grain towing or sailing, perhaps working up and occasionally halting for the tide, like grand signors resting on their way. In the midst of this concourse of vessels there will be small craft of all forms and sizes, and even colours, grey, brown, green, and mixed, skimming along from one side to the other, and some drifting with the tide, heavy and deeply laden, managed by two oars only, and others towed like huge whales drawn along by dolphins. These huge moving masses stir up the sea occasionally and leave in their tracks ripples sufficient to distress the boats that may be about. These belong to the watermen, a numerous race on the Thames, but which are dwindling every day, from the steamers having taken their traffic. But on all parts of the banks there is endless rough and ready as well, at the same time, as spacious storehouses for the reception of the goods from the troubled waters. The moving chimnies of steamers meet the immoveable chimnies of factories and smoke mingles with smoke as it passes, and here indeed navigation lends a helping hand to industry.

As reach after reach opens the river, on the north side are seen the entrance of wet docks, which are signalized by a forest of masts on the horizon. The English never courageously risk a fortune in great and useful enterprises. It would seem at first sight, that the united efforts of generations have been required to construct such works, and hence these basins seem quite modern. The present age indeed has seen the excavations for these docks. Until then, ships that entered the port of London had no other place to discharge their cargoes, except the quays, called the legal quays, and others known as sufferance wharves, which extended along each bank of the river. These narrow platforms were encumbered with valuable materials, and the open water of the river on the other hand, by which the vessels were subject continually to a system of robbery. Boats at night found their way among them, and in the confusion which reigned, the vessels often being pressed against each other, much property was carried away to the amount of some hundred thousands of pounds. In 1793, a plan for these docks was proposed, and for remedying the obstructions of the river. But it was not until six years afterwards, in the month of August, 1802, that the West India Docks were opened, the first work of this kind that was constructed in the port of London.

These docks, established at the enormous cost of £1,380,000, extend across the isthmus which connects the Isle of Dogs with the shore of Middlesex. They are entirely surrounded by a high thick wall which protects the vessels in them from nocturnal depredations. Like all other works of the same kind they are composed of three distinct parts: the basin, the quays, and the storehouses. The advantage of these basins is that they are always filled to the same height of water, which is still, and the ships are not subject to the rise and fall of the tide. Formerly when vessels discharged alongside the jetties of the river they were compelled to haul off as soon as the tide changed at high water, and to haul into the stream. Nothing is worse for a large vessel with cargo in her than to ground at low water. At present these huge craft have no kind of trouble from the tide. As their keels

never touch the ground they are subject to no injury from grounding, and notwithstanding the paltry wooden store houses, the great success of the docks is intelligible enough. The quays which have succeeded the old wharves are of substantial granite, on which the cargo of a ship may be placed in safety, and to each vessel is assigned an extent of jetty as marked. The warehouses are huge brick buildings, provided with windows furnished with wooden shutters, provided with cranes as necessary for the landing of the goods on the several floors of the building, and a curious sight they present, dancing at the end of a powerful chain, which deposits them in safety on the rail for which they are intended.

One part of the Thames docks is devoted to imports, and another to exports, an arrangement which very much facilitates commercial operations. The merchandise of Great Britain or the produce of foreign countries, either of these change hands and pass from one storehouse to another, by merely the authority of a simple morsel of paper, generally known as a dock warrant, and is considered one of the safest certificates that can be presented. The company also guarantees to the purchaser the quality of the goods he requires. For a long time the storehouses of these docks have been encumbered with West India produce, such as rum, sugar, coffee, and mahogany. A clause of an act of parliament obliges all vessels bringing home foreign produce to use the docks intended for them. But this monopoly, which had existed for twenty years, is known no longer. These docks, of which we have been speaking, are open to the commerce of the whole world. The Seal by which the rich company of merchants trading to the West Indies attracted attention is not, however, entirely effaced. It is necessary still to go there if one desires to breathe among the produce the odour of that group of islands which has been named the paradise of the new world.

THE NAVAL REVIEW AT SPITHEAD.

THE events of July will be long remembered by those who had the privilege of enjoying them, and will be consigned to the page of history, as another triumph of England's hospitalities and her naval *prestige*. An account of them all, including banquets, balls, concerts, operas, and volunteer as well as naval reviews, would occupy more space than we could devote to them. If in treating on one of them we should rather exceed the bounds of rational space usual to such narratives, we hope our readers will find an excuse for us in the unprecedented character of the occasion. Who has ever heard of the Sultan of Turkey and his Viceroy visiting England before this year of grace? besides that debt had to be paid by the friendly reception which we owed to the Belgian Volunteers. No wonder then that

London, especially, has been all gaiety and bustle, and no wonder that our principal arsenal was fairly besieged by crowds of visitors who had to put up with what they could get, in order that they might witness the naval review. But, alas, how often our best hopes are disappointed! this uncertain climate of our's marred the best preparations with storm and rain, which too often frustrate the best of intentions, and that review which its rehearsals promised should be everything that could be desired, became a mere inspection accompanied by abundance of salutes.

In our last number we alluded to the programme of the proceedings which were to take place. But, we shall preserve here a general outline of what did take place, and then refer more especially to our part of it, the naval proceedings. We will briefly enumerate the *fêtes* to which we have alluded in honour of the Sultan, the Viceroy of Egypt, and the Belgian Volunteers.

They commenced on Sunday, the 14th, when the Sultan, accompanied by the Prince of Wales and a numerous suite, paid a visit to Richmond; and the Viceroy, accompanied by the Prince and Princess Teck, went to Maidenhead to see the magnificent and picturesque seat of the Dowager-Duchess of Sutherland at Cliefden. On Monday evening, the Sultan went to the Opera in state, which was one of unusual brilliancy and interest. On Tuesday, the 16th, the Sultan and the Viceroy went to Woolwich to witness an inspection of the troops and Royal Artillery, but were prevented by the weather from seeing more than the Dockyard and Arsenal. The next day was occupied with a Naval Review at Spithead, on which occasion the Sultan was invested by the Queen, on board the Royal yacht, with the Order of the Garter. On Thursday, the 18th, the Viceroy took leave of the Sultan and left for Dover, *en route* for the Continent. In the evening there was a grand concert and ball at the Guildhall, the Sultan, the Prince of Wales, and members of the Royal family were present, to the number of about 3,000. There was also a grand ball at the Agricultural Hall, Islington, which was one of the most brilliant affairs seen in London for many years, and here the Belgian Volunteers were present, the company numbering about 10,000, including the Prince of Wales, the Duke of Cambridge, and a brilliant assemblage of peers and peeresses. On the 19th, the Sultan and the Volunteers were entertained by Miss Burdett Coutts, at her choice residence, Holly Lodge, Highgate, and in the evening the Sultan was present at a magnificent ball given by Her Majesty's government, at the New India Office. On Saturday there was a grand review of the Volunteers at Wimbledon.

Such is a *resumé* of the principal events which have rendered the month of July the most remarkable of the year. Let us now select the Naval review as our own special province, on which we have to treat. It has been justly said that our horse races, and our naval reviews, eclipse those of all other countries. For instance, "No other country can show such a spectacle as Epsom Downs on a Derby Day, or as Spithead that day. 'Famous for ships, famous for horses,' is

as true to-day of England as of the ancient Attica. On the turf and on the water we exercise a sovereignty of character and habit with that large familiar assurance, far above vanity or self-love, which has the force of instinct and the calmness of law. Soldiering on a large scale is certainly not an English taste, though we garrison the Indies, and from dawn to dawn beat our roll-call round the world. Our volunteering is a manly, national sport; our regular battalions are the sentinels of a world-wide empire. We have taken no mean part in the great decisive battles of many centuries; but ours is not the military spirit, we have no pride in great armies, and if we had, our insular position would have forbidden us to indulge it, and our military administration would have long since cured us of it by its enormous cost.

“The notion of our military authorities combining in a tremendous effort, and at no inconsiderable expense, to collect seven thousand troops, infantry, cavalry, and artillery, in Hyde-park to astonish the Sultan and the Viceroy, who had just assisted at a review of the Army of Paris (of some 60,000 men), was eminently British, no doubt, and, we must add, eminently absurd. Let us make up our minds, once for all, that great military spectacles are not our *forte*, and be thankful and proud that we cannot compete with the continental monarchies in such displays. Surely it was a happier inspiration that proposed a Naval Review for the gratification and instruction of our Oriental guests. At Woolwich they have seen scientific and mechanical inventions applied to the preparation and concentration of armaments. At Wimbledon they saw in the ranks of a citizen army the living bulwark of a free nation. But on the 17th, on the waters of the Isle of Wight, they discovered the very vital source and secret of the greatness of this little island, the mainspring of her power, the reason of her authority among the nations, the sum and substance of her national idiosyncrasy. To explain England to a foreigner, her history, her traditions, her place and duty in the world, show him the navy that guards her shores, that protects her commerce on every sea, that ministers to science by its explorers, vindicates the independence of Europe by its heroes, and spreads over the seas so many moving citadels of liberty and justice. There is nothing in the spectacle of a British fleet more noble than the fact that it presents one of the most formidable fighting forces in the world, at the service of a liberal and enlightened Government and a free and peaceful people.”

And here is the array of ships of war, that were to have manœuvred in the review; but which were compelled to hold on by their anchors, although they were by no means silent spectators of the scene.

The fleet under the command of Admiral Sir Thomas Pasley, Bart., Commander-in-Chief at Portsmouth, consisted of eight wooden line-of-battle ships, eight wooden frigates, two wooden sloops, fifteen iron or iron-clad frigates and sloops, sixteen gun boats, five royal yachts, and eighteen troop-ships, yachts, tenders, etc.; and, excepting the gun vessels and gun boats, were anchored in two lines or divisions, the starboard one being next the Isle of Wight.

STARBOARD DIVISION, <i>Iron.</i>					PORT DIVISION, <i>Wood.</i>			
	Ships' Names.	Guns	Horse Power.	Ton- nage	Ships' Names.	Guns	Horse Power.	Ton- nage.
1	Minatour	34	1350	6621	Victoria	102	1000	4127
2	Achilles	26	1250	6121	Donegal	81	800	3245
3	Warrior	32	1250	6109	Revenge	73	800	3322
4	Black Prince ...	41	1250	6109	Duncan	81	800	3727
5	Bellerophon ...	14	1000	4270	Irresistible	60	400	2612
6	Lord Clyde.....	24	1000	4067	Lion	60	400	2611
7	Valiant	24	800	4063	St. George	72	500	2864
8	Pallas	6	600	2372	Royal George... ..	72	400	2616
9	Research.....	4	200	1253	Mosey	36	1000	3733
10	Royal Sovereign	5	800	3765	Liffey	31	600	2654
11	Prince Albert... .	4	500	2037	Liverpool	39	600	2656
12	Wivern	4	350	1899	Phœbe.....	30	500	2896
13	Viper	2	160	737	Sutlej.....	35	500	3066
14	Vixen	4	160	754	Dauntless	31	500	1575
15	Waterwitch ...	2	167	777	Nymphe	4	300	1084
16	Gladiator	6	430	1210	Daphne	4	300	1081
17	... ..	...	...	...	Terrible	19	800	1850
GUN VESSELS AND GUN BOATS.								
18	Stork	2	60	236	Lee	5	80	431
19	Faney	2	60	235	Magnet	2	60	238
20	Pigeon	2	60	268	Pheasant.....	2	60	235
21	Redwing	2	60	236	Hyæna	2	60	236
22	Clinker	2	60	235	Surly	2	60	236
23	Bullfrog	2	60	236	Sandfly	2	60	236
24	Fervent	2	60	233	Highlander.....	1	60	233
25	Orwell.....	2	60	268	Speedy	2	60	273

Captains and Commanders' Names for reference, by the numbers of the Ships.

	STARBOARD DIVISION.	PORT DIVISION.
1	Capt. Jas. G. Goodenough. Flag of Rear-Admiral F. Warden, C.B.	Capt. Frederick Beauchamp P. Seymour, C.B. Flag of Adml. Sir T. S. Pasley, Bart.
2	Capt. Edward W. Vansittart	Capt. Edward W. Turnour
3	Capt. John Corbett	Capt. George Le G. Bowyear
4	Capt. John Fellowes	Capt. George Hancock. Broad Pennant of Commod. J. W. Tarleton, C.B.
5	Capt. R. J. J. G. Macdonald	Capt. John Borlase, C.B.
6	Capt. Roderick Dew, C.B.	Capt. John M. Hayes, C.B.
7	Comm. Charles H. Stirling	Capt. Matthew S. Nolloth
8	Capt. Matthew Connolly	Capt. Thomas Miller
9	Comm. Arthur Morrell	Capt. Henry S. Hillyar, C.B.
10	Capt. Cowper P. Coles, C.B.	Capt. Gerard J. Napier
11	Comm. Charles D. Inglis	Capt. John Seecombe
12	Capt. H. T. Burgoyne, V.C.	Capt. John Bythesen, V.C.
13	Comm. Henry E. Crozier	Capt. Trevenen P. Coode
14	Comm. Charles D. Lucas, V.C.	Capt. Edward P. B. Von Donop
15	Comm. Philip R. Sharpe	Com. Thomas Barnardiston
16	Captain E. D'O. D'A. Aplin	Com. George L. Sullivan
17		Capt. J. Commerell, C.B., V.C.

OFFICERS COMMANDING GUN VESSELS AND GUN BOATS.		
18	Lieut. Charles E. Reade, Capt. A. W. A. Hood	Comm. Charles W. Andrew
19	Lieut. Henry S. Mandeville	Lieut. George B. Golden
20	Lieut. Francis C. de Lousada	Second Mate G. H. Robertson
21	Lieut. William M. Moger	Lieut. Blair S. Hamilton
22	Navig.-Lieut. G. S. Alldricks	Lieut. George W. J. Aldham
23	Lieut. Alfred C. May	Lieut. Charles S. Shuckburgh
24	Lieut. John J. Gregory	Lieut. Arthur C. H. Paget
25	Lieut. Alfred F. Marescaux	Navig.-Sub.-Lieut. N. Child

The following Royal Yachts, Yachts, Troop Ships, and Tenders, attended the Fleet.

ROYAL YACHTS.				
Ships' Names.	Guns	Horse Power.	Tonnage.	Commander.
Victoria and Albert ...	2	600	2345	Capt. H.S.H. The Prince of Leiningen, G.C.B.
Alberta		160	391	Staff-Comm. David N. Welch
Elfin		40	98	Navig.-Lieut. A. Balliston
Osborne	2	430	1034	Comm. John D'Arch
Fairy		128	312	Staff-Comm. W. H. Drysdale
TROOP SHIPS, YACHTS, TENDERS, ETC.				
Serapis	3	700	4173	Capt. John C. Soady
Malabar	3	700	4173	Capt. Frederic D. Rich
Enchantress	1	250	835	Staff-Comm. John E. Petley
Helicon	2	250	837	Comm. Edward Field
Black Eagle		260	540	Staff-Comm. T. J. Whillier
Vivid		160	350	Staff-Comm. T. W. Sullivan
Fire Queen		120	313	Staff-Comm. F. W. Paul
Sprightly		100	234	Chief Officer George Allen
Princess Alice		120	270	Navig.-Lieut. W. H. Parker
Argus		50	318	Chief Officer P. Mahoney
Seamew				Comm. Robert Sterne
Medusa		312	889	Staff-Comm. Thomas Potter
Lightning	2	100	296	Comm. David Aird
Porcupine	1	132	382	Staff-Comm. E. K. Calver
Lizard	1	150	340	Lieut. Stanhope G. Price
Dee	1	220	704	Navig.-Lieut. G. Raymond
Pigmy	1	100	227	Staff-Comm. W. H. Petch
Bann		80	267	Senior Mate Philip Johns

The two divisions of ships commencing at a short distance west of the fort building on "No Man's Land" Shoal, extended towards the Solent to a little beyond the Sturbridge Shoal, the two lines about three cables' lengths apart, the ships anchoring in line ahead in the order

enumerated. It was intended that one of the Royal yachts should be anchored about four miles outside the Nab Shoal, and that the two lines of ships should get under way simultaneously, and preserving their order run down to it, returning as before. But it was wisely determined that the ships should remain at anchor; and the weather which followed in the course of the day fully justified the decision.

At Portsmouth the first move was made by the Sultan embarking on board the *Osborne*, and followed by the *Helicon* with the Viceroy on board, and the *Enchantress* with the Lords of the Admiralty, steamed out of the harbour, and by the *Porcupine*, Com. E. K. Calver, having a large staff of scientific officers on board, with the hydrographer to the Admiralty, and company specially invited by Captain G. H. Richards, R.N., and under the usual salutes from the shore, steamed out of the harbour to the fleet. Meanwhile Her Majesty had embarked from Cowes, and gone out with the same destination in the Royal yacht *Victoria and Albert* and remained off Osborne for the arrival of the Sultan. On passing between the lines of the fleet the Sultan was saluted, and arriving off Osborne His Royal Highness went on board the *Victoria and Albert*, accompanied by the Imperial Princes, their Royal Highness the Prince of Wales and the Duke of Cambridge, and followed by his Highness the Viceroy of Egypt and his suite from the *Helicon*, and was received on deck by Her Majesty the Queen.

The Sultan was received by Her Majesty on her own quarter-deck, and we see the event announced to the fleet by the banner of the Ottoman bearing the imperial cypher flying by the side of the Royal Standard at the same masthead of the yacht. Thus seen from one side the yacht was bearing the flag of England, and seen from the other she carried that of Turkey!—a sight never before witnessed, and as has been observed, one suggesting “ample subject for reflection.” It was there that the Sultan was honoured by Her Majesty with the Order of the Garter—but soon the yachts are off again, and deliberately pursuing their way between the two lines of the fleet from the westward. Then continued the Royal Yacht (led by the *Trinity Yacht Irena*) with the *Osborne* on her starboard quarter, and the *Elfin* on her port quarter, entering within the two lines of the fleet, with her faithful Lords and Commons in the *Syria* and *Ripon*; and as she passed the two end ships *Gladiator* and *Terrible*, then opened a steady salute from the broadsides of each ship as she successively passed them down the lines, in the course of which the brilliant rays of the sun occasionally burst forth with a fine pictorial effect and gave animation and life to the scene, the more charming on account of the sombre contrast which here and there intervened. It was a glorious interval, one which, as the powerful reports succeeded each other or accidentally coinciding, themselves combined (as it were) in unison now and then to contribute their powerful effects to the scene,—it was one we say, to which the heart responded with thrilling sensations of delight, admiration, and gratitude, that if we are to lose our wooden walls we shall have yet those of iron, and a queen who with her august presence will shew her sailors that she too as well as they can make free with

salt water, even in a *coup de vent*—that “cap full of wind” as Robinson Crusoe so naively puts it, that converted the intended naval review at Spithead into a mere inspection on the afternoon of the 17th.

Besides the vessels above named, the *Alberta*, the *Enchantress*, *Fairy*, and *Helicon*, were attending on the Royal Yacht, and the Danish and Italian corvettes took up the salute with as much spirit as any ship present. Indeed the latter (the *Ida* we must call her until we can find out her name) heedless of wind and rain was in her fine weather attire, as she should be on such an occasion! By lines of flags from the jib-boom end to the traffrail and to her yard arms, she shewed us that Italian bunting could fly as well in rain as in sunshine; and her commander merits the compliment, that she was the best dressed ship of the fleet.

As the yachts neared the eastern ships of the fleet, the weather still squally and disagreeable, the pace was slackened, and about three in the afternoon the Royal Yacht dropped her anchor under foot, as well as the other yachts near the fort building on “No Man’s Land,” where they lay for an interval of rest from the glories of the day. And this being concluded they again got under way and passed through the fleet amidst the usual salutes towards Osborne.

The work of the yachts as well as that of the ships forming the line, might now be said to have been concluded; but not so of the squadron of gunboats, whose business it was to bombard with all their fury, the two forts of block-house and Southsea. And this they did, so reckless of consequences that two of them got into shoaler water than was intended! But such things will happen. However, they had a harmless enemy to deal with, and were lifted off again by the flowing tide as quietly as they had been left aground; contributing much, by their well kept up fire, to add to the interest of the scene.

This, however, was now on the wane, for the illuminations of the fleet by “long lights” varied by manicoloured exhibitions of this kind, and enlivened with bouquets of rockets, were much interfered by the rain. Thus the foul weather followed up all the proceedings. Indeed so much wind, as had been blowing all day, was a pretty sure index of the certainty of time being required to quell it. And the great review of Spithead, from which so much enjoyment had been expected, and which had assembled people far and near at Portsmouth, really passed away half shorn of its attractions. And yet it did not prevent our English hearts from rejoicing at those proceedings which *were realized*, and will often hereafter recur to the memory of many a visitor to Portsmouth on that day as a glorious proof of the strength of England’s Navy.

The Sultan, as well as his Viceroy, have both left us. Both came to profit by their visits, and let us hope they will do so. They will have taken with them at all events, a lively remembrance of us, our institutions and our ways, and we may be allowed to cherish the hope that what they have seen to approve they will turn to good account in their own lands.

No doubt had a different period of the moon been chosen, we might

have had more propitious weather for our aquatic proceedings. For he who still doubts the power of the full or the new moon has had now before the *contretemps* of this visit. There can be no doubt that of all others a naval review is much more dependent on the changes of the moon for the caprices of the weather or its contributing success. How truly has it been observed: "All the monarchies of the east and west cannot 'charm the narrow seas to give gentle pass.' 'What care these roarers for the name of King?'" many a qualmish courtier may have asked on this occasion, when the yachts began to rise and fall upon the crests of the sea, plunging and foaming under the western gale.

It is to be regretted that our Oriental visitors were not with us when the moon was young, and the *crescent* shone serenely in a clear sky. Our western full moons are not happy in their auguries: they rise in rain and set in tempest in this month of thunder. "On the night of the 16th it needed no seaman's eye to read the sign of change and storm. At sunset the rain had lifted, and a hard keen sky, traversed and torn from hour to hour by flying squalls and eddies of driving air, with fitful lulls and baffling pauses of the wind, foretold uncertainty, trouble, and changes in those regions, 'over which,' as Mr. Disraeli remarked, 'we have no control.' The raw and ragged beauty of the early morning must have warned the most knowing of the select thousands who left the West-end deserted, that, though Britannia rules the waves, wind and sea are no respecters of persons, and that British landmen, especially at the height of the London season, are very fit and proper persons to offer sacrifice to the sea gods at whose altars they presume to worship. 'We'll not offend one stomach with our play' is a promise that even the British Admiralty cannot obtain from the facile Nereids of the Solent when they offer the two Houses of Parliament as hostages. A July gale is not so bad, perhaps, as a March or September one; but a gale is a gale, and the eager venturers who paid so dear for the whistle on the 17th had the satisfaction of facing, if not a whole gale, something very like half a gale. We would rather not attempt to picture to our readers or to ourselves the secret sufferings of many an illustrious and many an obscure pleasure-seeker on that occasion, in pursuit of patriotic emotions under difficulties. A fleet of fifty war-ships riding out a storm is in itself a splendid sight: a fleet of steamers and yachts freighted with ardent and curious idlers, who, disdaining the 'suave mari magno' philosophy, go out to share the 'great labour' of their naval fellow countrymen, is a spectacle that almost reaches the moral sublime. But here at all events it was one of fun and frolic."

In reference to these proceedings the following minutes have been communicated to the fleet.

"Victoria, at Spithead,

"18th July, 1867.

"GENERAL MEMORANDUM.

"I have much pleasure in promulgating for the information of the flag officers, captains, commanding officers, and crews who served

under my orders at the naval review yesterday, the accompanying minute of the Lords Commissioners of the Admiralty, communicating her Majesty's approval of the manner in which their respective duties were performed.

" I request that Rear-Admiral Wellesley, Rear Admiral Warden, Commodore Tarleton, and the captains and other officers assembled at Spithead and in Portsmouth Harbour, will accept my thanks for their exertions and able assistance in carrying out the arrangements connected with the naval review, although the complete fulfilment of the programme of the review was interfered with by the state of the weather, which prevented the intended evolutions of the fleet under way.

" I have further to express my approval of the general good conduct of all classes belonging to the fleet, during their stay at this port; and to make known to the officers and five hundred men of the Royal Naval Reserve who volunteered their services for the review the satisfaction with which I have received from Commodore Tarleton reports of the zeal and efficiency with which they discharged their duties on this the first occasion of their being employed on service with the fleet.

" The accompanying Admiralty minute, together with this memorandum, are to be read to the officers and ships' companies of Her Majesty's ships at Spithead and Portsmouth.

" T. S. PASLEY, Admiral.

" To the respective flag-officers, captains, and officers commanding Her Majesty's ships and vessels at Spithead at Portsmouth."

" The Board of Admiralty has received the command of Her Majesty to notify to Admiral Sir T. Pasley, Bart., and the flag officers, captains, officers and men, who served under his orders at the Naval Review this day, Her Majesty's approval of the manner in which their respective duties were performed.

" The Board is further commanded to express Her Majesty's gratification at the spectacle presented to Her Majesty in passing through the lines of ships which were drawn up for Her Majesty's inspection.

" My Lords direct that these commands may be made known to the fleet.

" By command of their Lordships,

" (Signed), W. G. ROMAINE.

" To Admiral Sir T. Pasley, Bart.,
Commander-in-Chief, Portsmouth.

" 17th July, 1867."

ROYAL NATIONAL LIFE-BOAT INSTITUTION.

A MEETING of this Institution was held at its House, John-street, Adelphi; Thomas Chapman, Esq., F.R.S., V.P., in the chair. There were also present Sir Edward Perrott, Bart., W. H. Harton, Esq., Admiral Sir Wm. Hall, K.C.B., Captain De St. Croix, Admiral M'Hardy, Colonel Palmer, and Richard Lewis, Esq., the secretary of the Institution.

The minutes of the previous meeting having been read, a reward of £4 10s. was voted to the crew of the Society's Rhoscolyn lifeboat, for going off on the 5th ult., in a gale of wind and very heavy sea, and assisting to take to a place of safety the schooner *Hope*, of Beaumaris, and her crew of three men, which vessel was in a perilous position in Cymmuran Bay, Anglesey. Various other rewards were also granted to the crews of the Institution's lifeboats at Lytham, Lancashire, and Cahore, Ireland, for putting off during rough weather with the view of rendering assistance to the crews of distressed vessels. A reward of £4 was likewise voted to the crew of a shore-boat, for rescuing in a heavy sea the crew of four men from the sloop *Woolpacket*, of Dartmouth, which was wrecked on Barnstaple Bar. Other rewards were also granted for saving life from different wrecks on our coasts.

It was reported that during the past month the Institution had sent new lifeboats to Redcar Yorkshire, Seaton Carew Durham, and West Wittering Sussex. The several railway and steam packet companies had kindly granted the boats a free conveyance to their destinations. The Redcar lifeboat was taken to Burton-on-Trent on the way to its station, and a grand demonstration took place there on the occasion of the presentation and launch of the boat. The West Wittering lifeboat was also publicly inaugurated on the 20th ult., at which the Bishop of Chichester assisted.

The late Miss Mary Shortridge, of Cleadon, Durham, had left the Society a legacy of £50, free of duty. It was also stated that a contribution of £500 had been received from the City of Worcester Lifeboat Fund, through Captain Saumarez Frazer, R.N., in aid of the Bembridge, Isle of Wight, lifeboat station. £400 had also been handed to the Institution on account of the lifeboat fund raising among licensed victuallers, on behalf of the new lifeboat establishment about to be formed at Hunstanton, on the coast of Norfolk. £300 were also contributed for a new lifeboat for Dundalk, Ireland, from the Stockport Sunday School Lifeboat Fund. New lifeboat houses were ordered to be erected at St. Ives (Cornwall), Hunstanton, and Stromness, N.B. The Institution decided to place a new lifeboat at Kessingland, on the coast of Suffolk. Payments amounting to £1,900 were ordered to be made on various lifeboat establishments.

Mr. Lewis, the secretary of the Institution, reported that he had on the occasion of the great ceremony on Monday the 1st ult., in the Palais d'Industrie, Paris, received from the hands of the Emperor of the French the Grand Prize of Honour, awarded to the National

Institution in acknowledgment of its great services to sailors of all nations when shipwrecked on our shores. The medal is a magnificent work of art, and weighs about 12oz. H.R.H. the Prince of Wales, who sat next the Sultan, on the right of the Emperor, appeared much pleased at this great tribute to the English Lifeboat Institution, he having recently presided over its annual meeting at the Mansion House. Reports were read from the inspector and assistant-inspector of lifeboats to the Society on their recent visits to different stations. Most favourable accounts had been received of several of the safety fishing boats of the Institution. The proceedings then terminated.

NOVELTIES—PAST, PRESENT, AND FUTURE.

A NOTICE to Mariners in *Mitchell's Maritime Register* says: "CHEFOO, April 12.—The Chinese government have erected a lighthouse on one of the islands at the entrance of the harbour." We have heard nothing of a light in it, and should be thankful to our readers for any further intelligence concerning it.

THAT new island reported by a Boston paper as having been so recently found "exactly in the track of vessels from China and Japan to San Francisco," turns out to be an old one not in the place assigned to it, and the story of the wreck of the *Canton*, being wrecked fifty years ago, seems to have originated from the following extract of a Sandwich Island paper. The account of the *Libelle's* wreck on Wake Island appeared in our number of December last, in a letter from Madame Bishop, dated at Guam.

CRUISE OF THE CAROLINE MILLS.—The American schooner, *Caroline Mills*, Captain Nickols, returned to report on the 22nd inst., having left here on a wrecking voyage to the westward about three months ago. She was provided with all the appurtenances for recovering wrecked property, and her Captain and crew were thoroughly experienced in those enterprises, and equipped with the proper instruments for navigation. A complete modern diving apparatus was on board—commonly known as a "submarine armour," with two men to operate it, one to don the "armour," and the other to attend to the signals of his confederate while exploring the bottom of the ocean. The first island visited by the schooner, and the principal object of the expedition, was Wake or Halcyon Island, one of the Palmyra group, lying in latitude 19° 11' N., and longitude 166° 31' E. Here they obtained some flasks of quicksilver from the wreck of the bark *Libelle*, which left here last year, having as passengers, Madame Anne Bishop and others. On the voyage, Captain Nickols visited an island which is on some charts called Gasparico and on others Cornwallis Island, in 14° 43' north, and 169° 03' east longitude, where he found portions of a wreck that had evidently laid there for years. It was that of a teak-built ship, with composition fastenings. By *Lloyd's Register* we find

that a ship called the *Canton*, left Bengal, and in 1822 was reported as missing, at Lloyd's. From the fact of her having composition metal, which was only invented after 1840, it could not have been the *Canton* suggested by the *Gazette*, and besides, that vessel was not of the size by several hundred tons, as it is apparent was the ship, the remains of which were found by Captain Nickols. Another circumstance which goes to prove that the wreck is a modern one, is that the masts, which are still to be seen, are what are called by seamen "made masts," that is, built in pieces and bound by iron bands. The coat of arms from the stern Captain Nickols has brought here and deposited in the Harbour Master's office. The fair inference is, that the ship in question was the Hudson Bay Company's ship *Canton*, chartered by the East India Company, perhaps, in 1822, or the wrecks now to be seen there may be those of two distinct vessels. On the shield, which is certainly a curiosity and well worthy of inspection, are first, the royal arms of England—three lions, etc., surrounded by the crown. Under this are evidently the arms of the Hudson's Bay Company, a beaver and a bear. On the outer circle of the shield are a succession of elephants and castles. Then comes a cypher which Captain D Smith, an experienced British shipmaster, interprets to signify 1799, the date at which the ship was built. There are few probabilities that the fate of the crew of that ship will ever be ascertained. The only sign that men had ever been on the island, beside the remains of the wreck, were some pieces of woodenware. The unfortunate men who were thus cast on a barren island may have perished there of starvation, or, what is more likely, have gone away in the ship's boats and foundered at sea, or fallen a prey to the savage inhabitants of the neighbouring islands.

The *Caroline Mills* is loading oil, and will sail for San Francisco.

As to the harbour for the San Francisco line of steamers to China, we believe that the prospect of Honolulu being a point of call between Panama and China for a new line of American steamers has induced the authorities there to turn their attention towards preparing a landing pier with an appropriate depth of water, which seems likely to be effected by the following extract from the same paper.—"We understand that the Hawaiian Government will act with becoming liberality towards the new enterprise, and will immediately set to work to extend the wharf on the Esplanade, so that a new pier may be in readiness by January next, or as early thereafter as is possible. It is now proposed to extend the present steamboat wharf south on a line with its present front, say one hundred and fifty feet, making a wharf of two hundred and seventy feet for the steamers to lie at. The China steamers are three hundred and forty feet in length, but as they remain in port only a day or so on each stoppage, this wharf will amply accommodate them. The depth of water alongside varies from twenty to twenty-four feet, but it will be dredged to a uniform depth of twenty-four feet. As this wharf lies at the head of the channel, the steamer will reach it without the necessity of turning around, and when ready to leave, has simply to cast off the bow lines and head out to sea.

The bar at low water has twenty-one feet, and at full tide twenty-three to twenty-four feet. It is stated that the steamers will draw, when fully loaded, only twenty-one feet. Excepting in the event of southerly storms, which seldom occur, there can be no difficulty in the ships entering and leaving in any ordinary half tide. The bar and channel are very smooth in all weathers, except during southerly storms, when the swell is heavy, as is usual at all entrances, when exposed to the wind. It is understood that efforts will be made to deepen the channel as soon as arrangements can be perfected.

HONGKONG.—*Extract of a Letter.*—To us at the Islands, who are so fortunately situated on the great ocean highway between the advancing civilization and Christian enlightenment of the East, and the receding barbarism and paganism of the West, everything relating to those hitherto little known regions of the globe possesses, at the present time, a peculiar interest. The probabilities are, that ere long Honolulu, through the steamer line of the Pacific Mail Steamship Company, will be in monthly communication with the ports of China and Japan, and it may become a common occurrence for those of our residents who can afford it, and wish a change of scene, to embark on one of the great "floating palaces" of the line and make a trip to Hakodadi or Hongkong.

Hongkong (or Victoria), is located on an island, near the mouth of the Canton river, in $22^{\circ} 12' N.$ (nearly the same as Honolulu, which is 21.19) and longitude $114^{\circ} 32' E.$ The Island is a barren, rocky one, with several rough and abrupt looking peaks, one or two of which reach an altitude of eighteen hundred feet above the level of the sea. It is eight miles long by two to five broad, and is estimated to contain about twenty-nine square miles. It was ceded by the Chinese to Great Britain, June 25th, 1843, at the conclusion of the "opium war," though it was in reality possessed by the East India Company some years previously. The climate of Hongkong has been variously represented by different visitors as unhealthy and as salubrious, though the weight of evidence would go to show that those who take proper care of themselves have no trouble. As it is, like Honolulu, situated in the tropics, the months from May to September are extremely hot, for it is not, as here, favoured with the cooling trade winds, and the invariable custom is to suspend all kinds of work in the middle of the day. The town is well watered, from the numerous streams of the island, and is conducted through stone aqueducts.

From a late letter writer in a San Francisco paper, who visited Hongkong in the *Colorado* on her first trip, we make the following extracts of interest in regard to Hongkong. We will observe, however, in passing, that the estimate of the number of foreign residents strikes us as being too small.

"The European population—under which term the Americans are also included—numbers about five hundred. The merchants mostly live in the same buildings in which they do business; the clerks, for the most part, boarding and living with their employers. The Chinese

population numbers about forty thousand, their quarter being at the western end of the settlement, called the Tai-ping-shang. A San Franciscan cannot but remark the cleanliness of the streets in this quarter, when compared with the disgustingly filthy condition of that portion of San Francisco occupied by the Chinese. This is owing to the very strict municipal regulations, and the severity of punishment inflicted for any infringement of the same. There is a large police force, consisting of Sepoys and Chinamen, officered by Europeans. The mode of punishment adopted toward the Chinese is rather severe under the administration of the present governor. For a light offence the culprit is imprisoned for a few days, then branded on the ear, and ordered to leave the colony, for which purpose he is provided with sufficient means. Should he ever return, and be caught, he is publicly whipped and sent off again; and the whipping is no joke I assure you. This severity has had the effect to greatly lessen crime amongst Chinese, and gives entire satisfaction, not only to the Europeans, but also to the better class of Chinese. The governor of the island is absolute. There is a council, appointed by the Crown, upon the recommendation of the governor.

There are three churches in Hongkong—one Protestant Episcopal, one Catholic, and one Presbyterian. They are all handsome buildings, the Protestant Cathedral, especially, and on Sundays one is always sure to see a large portion of the Europeans at one or other of the churches.

The Government buildings are also large and commodious—the Post Office, particularly; and although the letter business of the place is not one-third that of San Francisco, this building is twice as large as ours—from which the U. S. Government might draw a wholesome lesson. The Jail, also, is a model of a well-built and ventilated establishment, and although the majority of prisoners are Chinese, it is kept scrupulously clean. At present there are but 800, although the number has been as high as 1,600.

The hotels of Hongkong are nothing to boast of. Hitherto there has been but little business for them, as most of the visitors to the place were called there on business, and bringing letters of introduction with them were accommodated by resident firms, and the hospitality of the people in Hongkong, and, in fact, of the Europeans throughout China, is proverbial. But of late years travel having increased to a considerable degree, the necessity for hotels has become more apparent, as it is impossible for the residents here to accommodate indiscriminately every one who may bring a letter of introduction with them. The Hotel d'Europe heads the list, although, of course, there are several smaller and less convenient ones. The former, however, although by no means equal to what the Americans generally consider a good hotel, is nevertheless kept in a very respectable style by a Frenchman, and is, in fact, the only one fit to stop at. An association has been formed who are building a commodious and large establishment, which is to be kept more on the English, or American style.

Hongkong boasts of but one newspaper, *The China Mail*, from the

issue of which for Feb. 17, we extract the following words of cheer for the *Colorado* :

Before our next issue the *Colorado* will be some hundreds of miles on her return to San Francisco, having opened a line of communication between the Eastern and Western worlds, and marked the accomplishment of an object at which the Americans have always more or less vigorously aimed. We do not wish to inquire too curiously into the past history of the American trade with the South of China; nor perhaps would we willingly drag to light some of the incidents of the earlier career of the old East India Company in Hindostan. Wherever a foreign trade has to be forced upon unappreciative natives of a strange country, circumstances must occur painful to the feelings of any good man who does not happen to be engaged in the said trade. But so rapid has been the march of events, and we may say the change of policy, as regards Asiatic nations both in England and America, that we can afford to let by-gones be by-gones and wish our cousins all the success to which their energy and enterprise so fairly entitle them. The new year has been inaugurated by an event which must at least occupy a line or two in Universal History; the completion of a line of regular communication round the world. One cannot but regard the *Colorado* with peculiar interest as being the vessel which has thus carried out what but a few years ago was considered but the visionary scheme of a mad enthusiast. England commenced it by bridging with steam the oceans of the Eastern hemisphere, and America, her worthy successor in the Western world, has completed her undertaking. The *Colorado* will convey to America the first Pacific steam-carried inward mail from China to that continent. In this capacity, no less than for intrinsic merits, we wish her God speed on her homeward voyage.

Doubtless the establishment of a company which for 300 dollars, 200 dollars, or 100 dollars will take a European passenger, and for 50 dollars a Chinese, from Hongkong or Shanghai to San Francisco, and whose list of ships comprise four steamers of and above 4,000 tons burden, combining comfort, safety, and low fares to an extent hitherto unheard of, is likely to affect our own companies at first; but universal experience has shown that traffic increases in exact proportion to the facilities afforded for intercommunication between port and port.

LOSS OF THE BARQUE DANIEL WOOD.

BEFORE daylight on Wednesday morning Captain J. Richmond, with a boat's crew of the whaling bark *Daniel Wood*, belonging to New Bedford, arrived at Honolulu in a whale boat from French Frigate Shoals, where the bark was wrecked April 14th. It will be remembered that the whale ship *South Seaman*, a fine, nearly new vessel, was lost March 13th, 1859, on the same shoals, which consist of a series

of rocks, reefs, and sandbanks, located about four hundred and fifty miles to the north and west of these islands. Owing to their low position, being in no case more than six feet elevation above the sea, and also the fact that strong and variable ocean currents prevail in their neighbourhood, they are peculiarly dangerous to navigators, especially to ships bound hence to the northward. On some of the islets, which are very small, consisting of only an acre or two each, a limited supply of brackish water can be obtained, although that is not to be depended on at all seasons. Turtle usually abound, and fresh fish are easily taken, while sea birds flock there in myriads to deposit their eggs, which, contrary to general supposition, are very palatable and devoid of fishy taste.

The *Daniel Wood* arrived at Honolulu on the 5th of April, from a cruise to the westward, with a hundred and odd barrels of sperm oil, which was here discharged for shipment home, the bark leaving again on her cruise to the northward on the 10th. On Saturday, the 13th, Captain Richmond ascertained his position at three p.m. to be lat. $23^{\circ} 10'$, and long. $164^{\circ} 20'$, the shoal on which the vessel afterwards struck, which is known on the chart as Basse Française Shoal, then bearing west by north half north, distant eighty-five miles. The course of the vessel was given north-west, which would have made, with the variation, a course of north-west by north, and if no currents had interfered, and the position of the shoal been correctly laid down, the vessel would have gone forty-five miles to the windward of all danger. On Saturday night the weather was beautiful, with a clear atmosphere, and a full moon, and the bark, under all sail, was steadily pursuing her course with a fine favourable breeze.

At one o'clock Sunday morning, Captain Richmond, who was below, heard the second officer, in charge of the deck, shout to the man at the wheel: "Hard up the helm!" The Captain immediately sprang up on deck and ordered the vessel to be put about; but before this could be accomplished she struck heavily on the reef, and pounding her way over the first or outer rock, went on to the inner ones. Here the breakers were reached, about half a mile from the place where she first struck, and the vessel heeled over to the blows of the breakers. It having become apparent that she could not be saved and was about breaking up, the masts were cut away to keep her upright. The crew all went into the boats with the Captain, second officer, cooper and three seamen, who remained on board as long as safety would admit, and got about a hundred gallons of water into their boat before leaving. At daylight the only sign of terra firma in sight was a bleak looking rock, for which the boats pulled. At a distance of fifteen miles from the ship they reached a small sand bank, barren, with the exception of here and there a tuft of grass.

On Monday morning they again boarded the ship, through a heavy sea, and the Captain was washed overboard, but fortunately regained the deck. On this occasion they secured six casks of water and a lot of bread and meat. It occupied them a whole day and a good part of one night, to tow the casks of water to the sand bank through tortuous

channels, and on getting there the men were given each a pint of fresh water. On broaching two of the casks they were found to contain *salt water*, and they were the first of the six that were landed. Imagine the feelings of these shipwrecked mariners when the thought arose that they were on "a lone barren isle," without fresh water!

On Monday noon the ship broke up, and the Hawaiians of the crew, expert swimmers, were active in the water in securing provisions. The Captain decided at once to proceed to Honolulu for assistance. Taking a favourite large whale-boat, named the *Ann E. Wilson*, he put on her what the sailors call a "sister gunwale" and a "washboard," and declared his intention to start for Honolulu. As an instance of Yankee enterprise and determination of character, under difficult circumstances, it is well to mention that the only tools the Captain and his men had to operate with in making their boat seaworthy for the long and perilous voyage of nearly five hundred miles to this port, was a saw, a hammer and a chisel. The nails with which to fasten their work they had to draw from the fastenings of the other boats.

On Tuesday, the 16th, the boat being ready, the Captain, second officer and six men embarked at three p.m., with a necessarily limited stock of water and bread, bound for Honolulu, leaving twenty-seven of their shipmates on the sand bank, doubtless with a feeling of uncertainty, both on the part of those who went and those who remained, as to whether they should ever see one another again. One party left on an unfrequented barren sand beach in mid-ocean, and the other, with scanty provisions, undertaking, in an open boat, a sea voyage of hundreds of miles.

For the first four days after leaving the shoal the *Ann E. Wilson* encountered strong winds from the north and north-north-east, but made very good headway in the desired direction, sometimes pulling and sometimes sailing when the wind gave a slant. For prudential reasons all hands in the boat were put on an allowance of one pint of water and one biscuit a day. Thus they struggled on, until Sunday morning, April 23rd, when they made the Island of Niihau. Landing there, they were most hospitably and kindly received by the proprietors of the Island, Captain Sinclair and family, of whom Captain Richmond speaks in the highest terms. Leaving Niihau at six o'clock on Monday morning, they continued their course for Honolulu without touching at Kauai. During that night they spoke the *Monticello*, Captain Phillips, who gave them the course to steer, their compass having become disarranged. On Tuesday night they spoke the *Massachusetts*, Captain Williams, who hove his ship to and insisted upon their coming on board and taking some refreshments. They landed at the wharf in Honolulu on Wednesday morning, at three o'clock, after an open boat voyage of eight days, during tempestuous weather and on starvation rations.

As soon as the facts became known to General Smith, the American Consul at this port, preparations were at once made to get the United States steamship *Lackawanna*, Captain Reynolds, ready for sea to proceed to French Frigate Shoals, for the purpose of rescuing the

shipwrecked officers and crew of the *Daniel Wood*. She was made ready with all possible dispatch, and sailed on Thursday, at one o'clock, and will probably be absent on her errand of mercy about a week or ten days. Her presence here is quite fortunate on this occasion, and forcibly illustrates the propriety of the policy which we have repeatedly urged, that the American Government should always have a war vessel either at or in the neighbourhood of Honolulu. Just now, in these "piping times of peace," what better occupation for one of "Uncle Sam's bull-dogs" than to succour his shipwrecked mariners from a barren sand spit where, without this timely assistance, they all might have perished.

In this connection it may not be amiss to refer back to the loss of the whaleship *South Scaman*. From a letter of Capt. Norton's, published in *The Pacific Gazette*, we learn that she left Honolulu March 19, 1859, and ran on to the shoal at 5 a. m. on the morning of the 13th following. The vessel was a total loss. A few gallons of water and some hard bread were safely landed, and the Captain and crew decided to start in whaleboats for Guam. Just as they were leaving on their voyage, they fell in with a boat belonging to the schooner *Kamehameha IV.*, which was on a wrecking cruise in that neighbourhood. She took half the crew on board, and was twelve days reaching Honolulu. Returning to the shoal she brought the remainder of the men to Honolulu.

There are six small islets, the largest of which contains only an acre or so of surface. The reef extends northwest and southwest, and is variously estimate at 25 to 35 miles long. Capt. Norton took an observation on the largest islet, and placed it in $166^{\circ} 16'$ west long, and $23^{\circ} 40'$ north lat. Bowditch places it in $165^{\circ} 59'$, and Lieut. Brooks of the *Penimore Cooper*, in $166^{\circ} 25'$. Captain Norton's position is believed to be most correct.

The arrival of Captain Richmond and a portion of his crew on Wednesday morning, after a cruise of four hundred and fifty miles in an open whale boat, affords another instance of the daring of American seamen. Had the strong north-east trades been blowing, the chances of this boat reaching this group would have been small. A northerly wind, with unusually good weather, favoured the little craft, which arrived at this port safely. When it is remembered that schooners are usually ten or twelve days making the passage, any unbiassed mind will recognize the hand of a kind Providence directing the winds and the waves, and thus favouring the timely rescue of the seamen still remaining on the barren sand bank of French Frigate Shoal.

Naval Chronicle.

[With the view of adding to the utility of our pages we propose to record the names of the Royal Navy in commission at the commencement of each quarter, as an important feature in our Naval Chronicle.]

SHIPS OF THE BRITISH NAVY IN COMMISSION.

Name of Vessel.	No. of Guns.	Horse Power.	Commander's Name.	Station.
Aboukir	86	400	Commodore Sir F. L. M'Clintock, K.C.B.	
Achilles	26	1250	Com. G. M. Smith ...	Jamaica
Active	20	...	Capt. E. W. Vansittart...	Channel Squadron
Adventure ...	2	400	Com. G. G. Duff	Sunderland
Alert	17	100	Capt. C. L. Waddilove ...	China
Algerine	1	80	Com. H. H. Knocker ...	Pacific (ord. home)
Antelope	3	260	Lieut. C. E. Domville ...	China
Arethusa	35	500	„ J. Bruce	W. Coast of Africa
Argus	6	300	Capt. R. Coote	Mediterranean
Asia .....	...	...	Com. F. W. Hallowes ...	China
			Capt. W. C. Chamberlain	
			Flag of Rear-Admiral	
			Wellesley, C.B.	Portsmouth
Assurance.....	4	200	Com. W. H. Pym	W. Coast of Africa
Aurora	35	400	Capt. A. F. R. de Horsey	N. Amer. & W. Ind.
Barracouta ...	6	300	Com. G. D. Bevan	N. Amer. & W. Ind.
Basilisk.....	6	400	Capt. W. N. Hewitt, V.C.	China
Bellerophon ...	14	1000	„ R. J. J. G. Mac-	
			Donald	Channel Squadron
Boscawen	20	...	Com. MacLeod B. Cock-	
			craft.....	Portland
Brilliant	16	...	„ J. E. Bickford	Dundee
Brisk	16	250	Capt. C. W. Hope.....	Australia
Bristol	31	600	„ L. E. H. Somerset	
			Commodore G. T. P.	
			Hornby	W. Coast of Africa
Britannia	8	...	Capt. G. G. Randolph ...	Dartmouth
Cadmus	21	400	„ A. C. Gordon	N. Amer. & W. Ind.
Caledonia	31	1000	„ A. H. Gardner. Flag	
			of Vice-Admiral Lord	
			C. Paget, C.B.	Mediterranean
Cambridge ...	...	...	Capt. the Hon. F. A. C.	
			Foley	Devonport
Cameleon	17	200	Com. W. H. Annesley ...	Pacific
Caradoc.....	2	350	Lieut.-Com. E. H. Wil-	
			kinson	Mediterranean
Castor	22	...	Com. E. C. Symons	Shields
Challenger ...	18	400	Commodore R. Lambert,	
			C.B. Com. C. J. Brown-	
			rigg	Australia

Name of Vessel.	No. of Guns.	Horse Power.	Commander's Name.	Station.
Chanticleer ...	17	200	Com. W. W. S. Bridges...	Pacific
Charybdis ...	17	400	Capt. A. Mc. L. Lyons...	Australia
Clio	22	400	" N. E. B. Turnour...	Pacific
Columbine ...	4	150	Com. J. E. Erskine	Pacific (ord. home)
Constance ...	39	500	Capt. E. K. Barnard	N. Amer. & W. Ind.
Cordelia	11	150	Com. T. A. de Wahl.....	N. Amer. & W. Ind.
Cormorant ...	4	200	" G. D. Broad.....	China
Cruiser	5	60	" M. Singer.....	Mediterranean
Cumberland ...	24	...	Capt. the Hon. A. A. Cochrane, C.B.	Sheerness
Cygnets	5	80	Com.—	N. America and W. Indies (ord. hom.)
Daphne.....	4	300	Com. G. L. Sullivan	Devonport
Dart	5	80	" M. Lowther	W. Coast of Africa
Dædalus	16	...	" I. T. M. Nicholl ...	Bristol
Dasher	2	100	" J. H. Bushnell.....	Channel Islands
Dauntless	31	580	Capt. E. P. B. Von Donop	The Humber
Donegal	81	800	" E. W. Turnour	Liverpool
Doris	24	800	" O. Vesey	N. Amer. & W. Ind.
Dromedary ...	2	100	Staff-Com. J. H. Allard	W. Coast of Africa
Dryad	4	300	Com. T. H. B. Fellowes...	Devonport
Duke of Wellington ...	49	700	Capt. C. Fellowes	Portsmouth
Duncan.....	81	800	" G. Hancock	North Britain
Eagle	16	...	Com. W. E. Fisher	Liverpool
Egmont	4	...	Capt. H. F. W. Ingram...	Rio de Janeiro
Endymion ...	21	500	" C. Wake	Mediterranean
Enterprise ...	4	160	Com. G. S. Bosanquet ...	Mediterranean
Esk	21	250	Capt. J. P. Luce	Australia (ord. home)
Espoir	5	80	Com. M. S. L. Peile	W. Coast of Africa
Excellent .....	...	...	Capt. A. W. A. Hood	Portsmouth
Falcon	17	100	Com. W. H. Blake	Australia
Favourite	10	400	Capt. F. H. Shortt	N. Amer. & W. Ind.
Fawn	17	100	Com. C. A. J. Heysham...	N. Amer. & W. Ind.
Fisgard	42	...	Capt. W. Edmonstone, C.B.	Woolwich
Flora.....	40	...	" A. Wilmhurst	Ascension
Formidable ...	26	...	" D. Mc L McKenzie Flag of Vice-Adml. Sir B. W. Walker, K.C.B.	Sheerness
Fox	2	200	Staff-Com. Moriarty.....	Particular Service
Frederick William.....	74	500	Capt. J. J. Kennedy, C.B.	The Shannon
Galatea	26	800	" H. R. H. the Duke of Edinburgh, K.G. ...	Particular Service
Gannet	3	150	Com. W. Chimmo	N. Amer. & W. Ind.
Ganges	20	...	" J. E. M. Wilson ...	Falmouth
Gladiator	6	430	Capt. E. D'O. D'A. Aplin	Particular Service
Greyhound ...	5	200	" C. Stirling	W. Coast of Africa
Helicon .....	...	250	Com. E. Field	Channel Squadron
Heper	2	150	Staff-Com. J. G. H. Thain	China (ord. home)

Name of Vessel.	No. of Guns.	Horse Power.	Commander's Name.	Station.
Hibernia	104	...	Com. G. L. Norcock. Flag of Rear-Admiral H. Kellett, C.B.	Malta
Highflyer	21	250	Capt. T. M. S. Pasley ...	East Indies
Himalaya	2	700	" S. B. Piers	Particular Service
Hydra	1	220	" P. F. Shortland ...	Mediterranean
Icarus	3	150	Com. S. P. Townsend ...	China
Implacable	24	...	" P. W. Pellew	Devonport
Impregnable	78	...	Capt. F. S. Tremlett	Devonport
Iudus .....	...	...	" G. O. Willes, C.B. Flag of Rr.-Adml. the Hon. J. R. Drummond, C.B.	Devonport
Industry .....	...	80	Staff-Com. C. T. Youel ...	Particular Service
Investigator	2	34	Lieut.-Com. A. E. Kay ...	W. Coast of Africa
Irresistible ...	60	400	Capt. J. Borlase, C.B. ...	Southampton Water
Jackal	1	150	Lieut. A. E. Dupuis	W. Coast of Scotland
Jason	17	400	Capt. C. M. Aynesley ...	N. Amer. & W. Ind.
Landrail	5	80	Com. H. L. A. L. Maitland ...	W. Coast of Africa
Lion	60	400	Capt. J. M. Hayes, C.B. ...	Greenock
Liverpool	39	600	" J. Secombe	Particular Service
Lizard	1	150	Lieut. S. G. Price	Sheerness
Lord Clyde ...	24	1000	Capt. R. Dew, C.B.	Channel Squadron
Lya	7	60	Com. R. A. Parr	East Indies
Malacca	13	200	Capt. R. B. Oldfield	Pacific
Megæra	4	350	" J. Simpson	Particular Service
Minotaur	26	1350	" J. G. Goodenough. Flag of Rear-Admiral F. Warden, C.B.	Channel Squadron
Mutine	17	200	Com. W. Swinburn	Pacific
Mullet	5	80	" C. A. P. V. Robinson ...	W. Coast of Africa
Mankin	50	...	Capt. R. Hall	Pembroke
Narcissus	35	400	" J. C. Wilson. Flag of Rear-Admiral G. Ramsay, C.B.	S. E. Coast America
Nassau	5	150	Capt. R. C. Mayne	Straits of Magellan
Nereus	6	...	Master J. P. Dillon	Valparaiso
Niger	13	350	Capt. J. M. Bruce	N. Amer. & W. Ind.
Nimble	5	80	Com. A. J. Chatfield	N. Amer. & W. Ind.
Niobe	4	300	" T. K. Mackenzie ...	Devonport
Nymphæ	4	300	" T. Barnardiston ...	Woolwich
Oberon	3	260	Lieut.-Com. H. Hand ...	W. Coast of Africa
Ocean	24	1000	Capt. C. S. S. Stanhope ...	Mediterranean
Octavia	35	500	Commodore L. G. Heath, C.R. Com. M. G. Jackson	East Indies
Orontes	2	500	Capt. H. Phelps	Particular Service
Osprey	4	200	Com. W. Menzies	China (ord. home)
Pallas	6	600	Capt. M. Connolly	Channel Squadron
Pearl	21	400	" J. F. Ross	China
Pelorus	21	400	" W. H. Haswell ...	China (ord. home)

Name of Vessel.	No. of Gun.	Horse Power.	Commander's Name.	Station.
Pembroke ...	25	200	Commodore J. W. Tarleton. C.B. Capt. Hon. J. W. S. Spencer	Harwich
Penguin	5	80	Lieut. E. St. J. Garforth	East Indies
Perseus	15	200	Com. C. E. Stevens	China
Peterel	3	150	" W. E. Gordon	Cape of Good Hope
Phœbe	35	500	Capt. T. Rythesea, V.C.	Devonport
President	16	...	Com. H. W. Comber.....	City Canal
Prince Consort	31	1000	Capt. E. A. Inglefield ...	Mediterranean
Princess Charlotte.....	12	...	" O. J. Jones	Hong-Kong
Princess Royal	73	400	" W. G. Jones. Flag of Vice-Admiral G. St. V. King, C.B.....	China (ord. home)
Racer	11	150	Com. L. Brine	Mediterranean
Racoon	22	400	Capt. R. Purvis	Cape of Good Hope
Ranger	5	80	Com. W. A. Cambier ...	W. Coast of Africa (ord. home)
Rattler	17	200	" J. T. Swann	China
Reindeer	7	200	" E. Nares	Pacific
Research	4	200	" A. Morrell	Particular Service
Revenge	73	800	Capt. G. LeG. Bowyer	Pembroke Dock
Rifleman	5	100	Mas.-Com. J. W. Reed...	China Seas
Rinaldo	7	200	Com. W. K. Bush	China
Rodney	78	500	Capt. A. C. F. Heneage. Flag of Vice-Admiral Sir H. Keppel, K.C.B.	China
Royal Adelaide	26	...	Capt. W. G. Preedy, C.B. Flag of Admiral Sir W. F. Martin, Bt., K.C.B.	Devonport
Royal Alfred ..	18	800	Capt. F. A. Herbert Flag of Vice-Admiral Sir G. R. Mundy, K.C.B.....	N. Amer. & W. Ind.
Royal George	72	400	Capt. T. Miller	Kingstown
Royal Oak ...	35	800	" the Hon. G. D. Keane	Mediterranean
St. George ...	72	500	" M. S. Nolloth	Portland
St. Vincent ...	26	...	Com. R. Carter	Portsmouth
Salamander ...	6	220	" G. S. Nares	Australia (ord. hom.)
Salamis .....	...	250	" F. G. Suttie	China
Satellite	17	400	Capt. J. Edye	China
Scout	21	400	" J. A. P. Price	Pacific
Scylla	21	400	" R. W. Courtenay...	China (ord. home)
Sealark	8	...	Lieut. J. N. Croke	Devonport
Seringapatam	...	...	Commodore H. Caldwell	Cape of Good Hope
Serpent	4	200	Com. C. J. Bullock	China
Sharpshooter.	6	160	Lieut. B. W. Bax	S.E. Coast America
Shearwater ...	4	150	Com. T. E. Smith	Pacific (ord. home)
Simoon	4	400	Capt. T. B. Lethbridge...	Particular Service
Slaney	1	80	Lieut. W. F. L. Elwyn...	China
Snipe	5	80	Com. H. A. Trollope.....	W. Coast of Africa (ord. home)

Name of Vessel.	No. of Guns.	Horse Power.	Commander's Name.	Station.
Sparrow-hawk	4	200	Com. E. A. Porcher	Pacific
Sphinx	6	500	Capt. R. V. Hamilton ...	N. Amer. & W. Ind.
Spiteful	6	280	Com. B. L. Letroy	S. E. Coast America
Star	4	200	" R. Bradshaw	East Indies
Steady	5	80	" J. P. J. Parry	Devonport
Supply	2	80	Staff-Com. C. Bawden ...	Particular Service
Sutlej.....	35	500	Capt. T. P. Coode. Flag of Vice-Admiral Hon. J. Denman	Pacific (ord. home)
Sylvia	5	150	Com. E. W. Brooker.....	China Seas
Tamar	2	500	Capt. F. W. Sullivan, C.B.	Particular Service
Terrible	19	800	" J. E. Commerell, V.C., C.B.	Particular Service
Terror	16	200	" J. F. B. Wainwright	Bermuda
Topaze	31	600	Com. R. A. Powell, C.B.	Pacific
Torch	5	80	" G. A. Douglas.....	W. Coast of Africa
Trincomalee...	16	...	" W. J. Pollard	Hartlepool
Triton	3	260	Lieut.-Com. R. H. Napier	S. E. Coast America (ord. home)
Urgent	4	400	Capt. S. H. Henderson...	Particular Service
Valorous	16	400	" C. C. Forsyth	Cape of Good Hope (ord. home)
Vestal	4	300	Com. S. P. Brett	W. Coast of Africa
Victoria	102	1000		Portsmouth (to pay off)
Victory	12	...	Capt. Hon. F. Egerton. Flag of Vice-Admiral Sir T. Pasley, Bart. ...	Portsmouth
Vigilant	4	200	Com. R. A. O. Brown ...	East Indies
Viper	2	166	" H. E. Crozier	Sheerness
Virago	6	220	" H. M. Bingham ...	Australia
Warrior.....	32	1250	Capt. J. Corbett. Flag of Rr.-Adml. O. Frederick	Queenstown
Wasp.....	13	100	" N. B. Bedingfield...	East Indies
Wellesley	72	...	" W. H. Stewart, C.B.	Chatham
Winchester ...	12	...	Com. G. M. Balfour.....	Aberdeen
Wolverine.....	21	400	Capt. T. Cochrane	N. Amer. & W. Ind.
Wyvern	4	350	" H. T. Burgoyne, V.C.	Particular Service
Zealous	20	800	" R. Dawkins. Flag of Rear-Admiral Hon. G. F. Hastings, C.B. ...	Pacific
Zebra	7	200	Com. E. J. Pollard	China

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 81, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 408.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist in Mls	[Remarks, &c. Bearings Magnetic.]
38. Ireland, Waterford	Spit Point of Passage	Seven Miles within the entrance	F.	...	...	Est. 15th August, 1867. Beacon pole and barrel removed. See directions in note (a.)
39. Aransas Pass	Coast of Texas, Low Island	... ..	F.	64	12	Est. 15th June, 1867. See note (b.)
Little Egg Har- bour near En- trance	Tucker's Beach, New Jersey	39° 30' 3 N. 74° 16' 8 W.	F.f.	...	12	Est. 20th June, 1867, varied by a flash every minute. See note (c.)
40. Prince Ed- ward Island.	East Point	46° 27' 1 N. 61° 58' 3 W.	F.	313	18	Est. 30th July, 1867.

F. Fixed. F.f. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

(a.) IRELAND—SOUTH-EAST COAST.—*Fixed light in Waterford Harbour.*
—The light is a *fixed red* light. The lighthouse is built on seven iron piles. The beacon pole and barrel recently standing on the site of the Passage lighthouse have been removed.

DIRECTIONS.—To a vessel entering the harbour the Passage light will first become visible when she is half a mile above Duncannon fort, the light then bearing N.N.W. $\frac{1}{4}$ W., distant nearly one mile. By keeping the light open on the port bow, and while passing giving it a berth of half a cable, a vessel will pass through the best part of the channel leading to the Passage anchorage and can there bring up in safety.

[All Bearings are Magnetic. Variation 24° in 1867.]

(b.) UNITED STATES—COAST OF TEXAS.—*Fixed light at Aransas Pass.*
—The light is a *fixed white* light, at an elevation of 64 feet above the mean level of the sea, and should be seen in clear weather at a distance of 12 miles. The illuminating apparatus is dioptric or by lenses, of the fourth order. The light when bearing N.W. $\frac{1}{4}$ W. will be seen between the two points of the Pass; but as the bar frequently shifts, no directions can be given for crossing without a Pilot.

(c.) NEW JERSEY.—*Light near the entrance to Little Egg Harbour.*—The light is a *fixed* light varied by a flash every minute, and should be seen in clear weather at a distance of 12 miles. The illuminating apparatus is

of the fourth order. The tower is white, and stands in lat. $39^{\circ} 30' 18''$ N. and long. $74^{\circ} 16' 48''$ West of Greenwich.

[All Bearings are Magnetic. Variation at Aransas Pass $8^{\circ} 45'$ East in 1867.]

CHINA PILOT.—NOTICE 4.—In consequence of the total wreck of the *Corra* steamer at night, on her passage from Hong Kong to Yokohama, in January last, on a sunken rock supposed to exist about $1\frac{1}{2}$ miles to the southward of Flat reef, one of the dangers near Breaker point, on the east coast of China, and which rock did not appear on the Admiralty charts, the neighbourhood of this point has been closely examined and sounded; the following information relative to this examination has been received from Mr. J. W. Reed, Master, R.N., commanding H.M. Surveying Vessel *Rifleman*, 1867.*

Corea Rock.—A pinnacle of 14 feet at low water spring tides and 6 fathoms around it, stands two thirds of a mile S.W. $\frac{1}{4}$ S. from Flat reef, with the summit of the islet westward of Flat reef bearing N.N.W. $\frac{1}{4}$ W., distant a large mile; Dome hill N.E. $\frac{1}{4}$ E., about $2\frac{1}{2}$ miles; and Breaker point N.E. by E. $\frac{1}{4}$ E., $2\frac{1}{2}$ miles.

The Three Fathoms Patch.—Is westward of the Corea rock a cable and a half, with 3 to 5 fathoms water over it, and 7 fathoms around. From the 3 fathoms spot the summit of the islet westward of Flat reef bears N. by W. $\frac{3}{4}$ W., distant about a mile; Dome hill N.E. $\frac{1}{4}$ E., $2\frac{3}{4}$ miles; and Breaker point N.E. by E. $\frac{1}{4}$ E., $2\frac{3}{4}$ miles.

Sunk Rock.—Has but 7 feet water over it at low water springs being the shoalest part of a rocky patch about a cable across. From this rock the summit of the islet westward of Flat reef bears N. $\frac{1}{2}$ E., distant half a mile; Dome hill N.E. by E. $\frac{3}{4}$ E., $2\frac{1}{2}$ miles; and Breaker point E. by N. $\frac{1}{2}$ N., 2.8 miles.

When on Sunk rock, the black rock (15 feet high,) and the rock (12 feet high,) respectively to the West and N.W. of Flat reef, are in line.

Soundings.—The depths outside of these dangers are regular, but between the Corea rock and Flat reef are very irregular, with numerous patches of 3 to 5 fathoms.

Flat Reef.—Is a bed of dark-coloured rocks, half a cable in extent, crowned with two conspicuous masses 12 feet above high-water mark. A quarter of a mile W. by N. $\frac{1}{4}$ N. from Flat reef is a small black rock 15 feet, and N.N.W. half a cable, another, 12 feet above high water.

General Remarks.—Dome hill seen from the westward has the appearance of a Dome, but is by no means conspicuous when passing at a moderate distance southward of Flat reef, and when seen from off Breaker point it is still less conspicuous, appearing then as a low straggling sand-hill.

No safe judgment could be formed at night as to the distance of the land, although the weather—during the three nights the *Rifleman* remained there—was clear and starlight, and the horizon to seaward plainly visible. The islet could only be made out with difficulty from a distance of 2 miles, and Breaker point from a distance of $2\frac{1}{2}$ miles could not be distinguished. The range of dark hills seen over the high sandy coast is very deceptive at night, and Dome hill can then very seldom indeed be recognised with certainty; strangers cannot do so readily by daylight, and at night are very liable to mistake for it a round-shaped hill at the extremity of the back range.

*See Admiralty Chart, Chelang point to Chauan bay, No. 1963; also the China Pilot, 4th Edition, page 98.

For these reasons sounding only can be relied upon to enable vessels to pass the above dangers safely at night; when by keeping in depths of 11 or 12—but not less than 11 fathoms, they will pass from one to two miles to the southward of the Corea rock.

[*All Bearings are Magnetic. Variation 2° Easterly in 1867.*]

VANCOUVER ISLAND PILOT.—NOTICE 1.—(*Corrected Notice of No. 4, 1866.—Rock in Seymour Narrows, Discovery Passage.*—A dangerous rock, with 3 fathoms water on it, has been discovered almost in the centre of Seymour narrows—but rather on the western side—between Maud island and Wilfred point. It lies S.W. $\frac{1}{4}$ W., nearly 3 cables from the north-west point of the island, and N.N.E. $\frac{1}{2}$ E. 3 cables from the south-east extreme of Wilfred point; it is near the position of the heaviest part of the tide race.

The passage is therefore dangerous for large vessels during the strength of either stream, and it is recommended to enter it—especially from the southward—at slack water, and to pass on the eastern side of the rock.

[*All Bearings are Magnetic. Variation in 1867, 23 $\frac{1}{2}$ ° Easterly.*]

See Admiralty Charts:—Vanvouver island, No. 1917; North America, West Coast, Strait of Georgia, Sheet 2, No. 580; Seymour Narrows, No. 538; and Vancouver Island Pilot, page 157.

THE LOSS OF IRON SHIPS.

THIS question, which has recently excited so much attention amongst underwriters and shipowners, was incidentally discussed recently at Liverpool, at the annual meeting of the Maritime Insurance Company (limited), the directors of which are all largely interested in shipping. The general opinion of those present was that the risks on iron ships were unduly great. 1st. From the use of cement and iron ballast. Vessels at present, it was stated, are constructed to float on rather than in the water, and, consequently, they had to be weighted down to a certain depth by iron. For instance, a first-class merchant ship (A 1 twenty years at Lloyd's) had 200 tons weight of iron on her ties and rivets. It was also urged that the space occupied by iron ballast filled the space which would otherwise be occupied by the leakage water, which was in consequence thus frequently forced to an undue height to the great injury of the cargo. 2nd. The deviation of the compasses was another serious and frequent cause of risk, and it was recommended that all iron ships should carry a compass on the mainmast, twenty feet above deck. It was also remarked that Shipmasters very often did not make sufficient allowances for these deviations. 3rd. It was urged that another great cause of risks was attributable to the fact that young and inexperienced Captains were allowed to command large vessels, while old and experienced Masters were not sufficiently encouraged. It was also recommended that not only should more care be taken with the compasses, but that the instructions with regard to the use of the lead should be very strict, and that Shipowners and Underwriters should endeavour to show their warm and liberal appreciation of careful and experienced navigation.

REFUGE HARBOURS.

SOME ill informed landsman who may have profited more by the insurance office than by the working of his ships, has adopted the opinion that harbours of refuge are the graves of seamanship. It would afford this gentleman a good lesson to be caught in one of his own craft on a lee shore in a gale of wind, where he could find no harbour of refuge, that he might be cast away with his own ship and her crew, that he would thus consign to perdition instead of being able to go to the insurance office and realize the money (and for aught any one may know) more than the money that she cost him. Such a friend to seamen, we say, would be served quite right, but unhappily these gentlemen are the only parties who do not suffer on such occasions. So that on they go and flourish with their very *considerate* doctrines. Happily common sense people look on harbours of refuge in a different light, as will be seen by the following extract from the *Morning Post* on the subject.

“Harbours of refuge have been called the graves of seamanship, and they no doubt have a tendency to produce a certain laxity and carelessness among so proverbially foolhardy a class as sailors; but that, of course, is no reason why they should not be constructed, any more than it would be a reason against increasing the other means of securing men from danger, and in the abstract it would be desirable, if it could be effected, to build harbours of refuge every five miles round our stornbound coasts. When the question of providing the money, however, comes to be considered, it is generally found that the conviction of the advantages to be derived is not strong enough to induce those for whose advantage harbours are made to provide the funds necessary, and Ministers do not like to come upon the people at large, and thus it happens that there are much fewer harbours fit to receive and shelter vessels of all sizes, in all weathers, than either the ship-owners or the philanthropists desire to see. The importance of this question of money will be appreciated by those who study the return now in question, and it will be seen that the expense of forming, by artificial means, a good safe anchorage, even in localities where nature has already done much, is very great indeed, and not to be undertaken except for the strongest reasons.

“The return now before us refers to the four great undertakings at Dover, Alderney, Portland, and Holyhead, all of which are now fast approaching completion. At Dover, the pier which is familiar to all travellers, and which forms the breakwater or western arm of the harbour of refuge, was commenced as long ago as October, 1847, and has been advanced to a state which renders it a perfect delight to embark and disembark there for the Continent. The estimated cost of this work is £725,000, of which £611,277 has already been spent, and the further extension of the pier, which was decided upon this year, has already been begun and is progressing fairly. Although not offering any very great natural advantages for the formation of a har-

bour of refuge, Dover is yet from its position, in the very heart of the Channel trade, the spot of all others where such a harbour is most desirable, and there is no doubt that the present works when completed will offer a very considerable advantage to vessels which may be caught in bad weather either coming up or going down Channel.

“ At Alderney a breakwater was also begun in 1847, and now, twenty years afterwards, we are beginning to see the end of the undertaking, after an expenditure of no less than £1,130,018 out of the whole estimated cost of £1,300,000. These works, although more costly, will not probably be nearly so useful as those at Dover, but the navigation of the Channel Islands is beset with difficulties which are at any rate diminished by the new harbour, and for vessels bound to the south, round Ushant, Alderney is undoubtedly capable of being of much use.

“ Portland is perhaps the finest and altogether the most valuable harbour we possess. The fine bay, sheltered on two of its sides by the Chesil Bank and the Isle of Portland, has been enclosed on a third side by a breakwater 8,500 feet, or nearly two miles long, stretching out towards Weymouth, and enclosing over 2,000 acres of the finest anchoring ground in the world. Whole navies could lie afloat in this port, secure from all the winds that blow; and, lying as it does directly in the track of all our westward-bound trade, its importance is incalculable, as may be judged by the crowd of vessels which flock in on the first approach of bad weather. This breakwater was begun in December, 1849, and has been completed now since December, 1865, with the exception of some minor works which are continued by separate contracts. The amount which, up to April last, had been expended on the undertaking is £1,002,248, or some £5,000 less than the original estimate, and this includes the cost of the convict labour which has been so largely employed in this work. No less than 5,627,654 tons of rough stone have been thrown into the sea to form this barrier, and so effectual has it been that the most violent gales have had no perceptible effect upon it, further than displacing a few blocks of stone which are at once reset.

“ It is, however, at Holyhead, which lies directly in the course of all our American trade from Liverpool, and which is the door of communication with Ireland, that the greatest efforts are being and have been made. This harbour, as begun according to the original design of 1845, intended to provide for a small packet station, included an anchorage of two hundred and sixty acres; but this was reconsidered, the breakwater was extended, and it has now been carried 7,151 feet out into the sea, and encloses a sheltered anchorage of four hundred acres of deep water. In addition to this, piers and various conveniences have been established for the packet service to Ireland, which is certainly one of the best, if not the best, in the world, and deserves all that can be done and said for it. The old harbour, too, has been improved, and altogether £1,371,155 have been expended upon the works. By far the greater part of the breakwater is already actually completed, and the rest is not far behind; while the worth of the

harbour is shown by the fact that during the last year no less than 3,647 vessels, or upon an average ten per day, have availed themselves of the shelter it offers. The original estimate of £1,536,000 will certainly produce for us as good a harbour as could be made in that particular spot, and it will certainly not be grudged by the nation. But it is useful to keep this fact in mind, that our harbours of refuge do, as a rule, cost us from one to two millions each, and that it is therefore a serious matter to undertake their construction at the expense of the nation. The four we have mentioned are pretty fairly distributed among the lines of our great traffic, and it will be proper, for many reasons, to pause before we engage upon other works of a similar nature—unless, indeed, the shipowning interest is disposed to submit to the imposition of adequate dues to recoup the nation for its original expenditure.

LOSS OF HER MAJESTY'S SHIP OSPREY.

WE regret much having to record the following account of the loss of the *Osprey*, which we have no doubt has been occasioned by the strong westerly current on the southern African coast.

By the arrival of the Cape mail steamer *Briton* at Plymouth on the 23rd ultimo, we have detailed accounts of the loss of the *Osprey*, 4, screw gun vessel, commander William Menzies. The *Osprey* was on her way from the China station for England. Having crossed the Indian Ocean, she was running along the southern coast of the South African colonies with the intention of rounding Cape Agulhas, probably in sight, and calling in at Simon's Bay. On the evening of the 29th of May she was continuing this course under sail and easy steam, her reckoning being believed to make her about twenty miles from land. For two or three days previously the wind had been variable and strong. That evening the weather was very boisterous, and the sea heavy and chopping. During the night it came on to rain, with a strong north-west gale. Everything, however, was taut and trim, and although the night was pitch dark, no danger was apprehended. As the night progressed the wind increased, a very heavy sea set in, and the rain poured down in torrents. In the latter part of the middle watch, while it was yet dark, suddenly there was a sharp grating, grazing, hollow sound that made her quiver from stem to stern, and all hands were aroused to the fact that she had grounded on a shoal.

The situation was most appalling. A narrator who was on board says:—"The ship was gone. The fact was realized in a moment, and it was now her gallant captain's care to save life. 'Cheerily, my boys,' he said, and it was so, not a heart quailed. It wanted an hour of daylight, and the task of rescue was a difficult one. The dull, grating sound continued above the roar of the waters, and the vessel was filling where she struck amidships. All on board were calm, and

orders were promptly obeyed. She bumped and rolled, till at last a huge wave took her over a reef into a gully at least a hundred yards wide. As morning dawned land could be seen about two hundred yards from the ship, and boats were got out to take a line ashore. This was no easy task in broken water, and Acting Lieutenant Meade and two men who attempted it were capsized. Two men succeeded in swimming back to the ship. Lieutenant Meade struck out for the shore with the line, but it got entangled among the rocks, and was carried away. Nothing daunted, the gallant swimmer made a second attempt, again struck out for the shore, and after severe exertion succeeded in reaching land with the life line, by which all but one man were rescued. The crew consisted of eighty-three officers and men, all told; the poor fellow who was drowned was George Devereux, leading stoker, a native of Portsmouth, who leaves a wife and five children." The spot where the vessel struck is to the westward of Algoa Bay, near Klippen Point, about ten miles west of Cape St. Frances, and near the township of Humansdorp. The local papers speak very highly of the kindness experienced by the shipwrecked crew.

The only articles rescued from the wreck were sixteen rifles, three revolvers, one chronometer, two sextants, a change of clothing for each man, some sails, and remains of the rigging. The crew were forwarded in five bullock waggons to Port Elizabeth, where they at once embarked on board the *Peterel*, 3, screw sloop, lying there. The *Peterel* left Port Elizabeth on the 8th of June for Simon's Bay, and visited the wreck. As she passed the scene of the disaster, it was found lying about one hundred yards from the shore at low tide, and had broken up, the stern having washed ashore. It was not likely that anything more would be recovered. The *Peterel* arrived in Simon's Bay on the 12th of June, and a court was sitting to inquire into the circumstances attending the wreck when the *Briton* left. The accident is generally considered to have arisen from the strong currents, as yet but imperfectly known, that prevail on the coast; and the *Eastern Province Herald* hopes that the Admiralty will now recognise the necessity of proper charts of that coast, with reliable currents and soundings marked on them, being provided, and gives a long list of wrecks occurring near the spot under similar circumstances.

So the Atlantic Cable is again broken, for we find that a telegram dated Valentia, Saturday, 6 p.m., reports that the cable of 1866 was broken suddenly on Saturday afternoon; that the preliminary experiments give the locality at 50 nautical miles from the other side—i.e., from Heart's Content. "This," says the chairman of the Anglo-American Telegraph Company, "would indicate a very moderate depth of water, in which the injury can be repaired with great facility, as in the case of the recent accident on the shore end of the same cable. The 1865 cable is in perfect order." No doubt there must not only be a very moderate depth but a bank of soundings which it would be most important to have explored, and which we have no doubt will not escape the attention of the Admiralty.

MERCHANT SEAMEN'S ACT.

THE following important clause appears in the Merchant Shipping Bill, and we trust it will have the effect of preventing such disgraceful disasters occurring as the foundering of the *London* and her companion another iron ship, and that on such occasions of barefaced overloading there will be found some one bold enough to point out the defect of such ships to the Board of Trade :

“ Whenever, in any legal proceeding before any Justice or Justices, between the Master or Owner of any ship on the one hand, and any Seaman or Apprentice belonging to such ship on the other, it is alleged that such ship is, by reason of unseaworthiness, overloading, improper loading, defective equipment, or for any other reason, not in a fit condition to proceed to sea, the Justice or Justices may, and, if required by either party, shall, call upon one of the Surveyors of the Board of Trade to survey such ship, or to answer any question concerning her which the Justice or Justices may think fit to put to him; and if there is no such Surveyor at or near the place, the Justice or Justices shall apply to the Board of Trade, and the Board of Trade shall thereupon direct one of their Surveyors to proceed to the place; and in every such case the Surveyor so called upon or directed shall survey the said ship and shall make his report in writing to the Justice or Justices, and such report shall be communicated to the parties by the clerk to the Justices, and shall be received as evidence in the said proceeding, and shall be accepted as *prima facie* evidence of the facts therein stated; and the Justice or Justices shall determine the question before them in accordance with the opinions expressed in such report, unless it is proved to his or their satisfaction that such opinions are ill-founded; and every such Surveyor shall for the purpose of the said survey have the powers given to Inspectors by the first part of the principal Act, and shall be paid such sum for expenses, if any, as the said Justice or Justices may direct; and such expenses shall be costs in the proceeding, and be paid by such of the parties as the Justice or Justices may direct, and be accounted for by the Surveyor in such manner as the Board of Trade may direct.”

 SAN FRANCISCO.

OUR readers may have observed in the late San Francisco papers, an account of the destruction of Rincon Rock, in San Francisco harbour, by means of powder explosions. The powder is simply laid on the rock in a tin canister, and exploded by means of a wire, thus blowing the rock into atoms. The experiments have been very successful, comparatively inexpensive, and have resulted in removing a dangerous obstruction to navigation. There are several places in our harbour where rocks exist, which can, no doubt, be destroyed by his process. The gentleman who has been engaged in removing Rincon

Rock has offered to visit Honolulu and remove any harbour obstructions there may be here. The experiment is certainly worth a trial. Just off the point of the Esplanade is a troublesome rock, which should be removed, as it prevents large vessels from coming up to the wharf. Another lies at the point where the new steamboat wharf is to be extended to, which may possibly be blown up, and allow the extension of the pier in a straight line five or six hundred feet further on. As our harbour is small, every fathom of space that can be rendered serviceable to shipping is so much gained, and all experiments with that end in view must meet public approbation. —*Sandwich Island Paper.*

The process mentioned in the foregoing extract seems to be peculiar to the American engineers and certainly beneath the attention of ours. A ridiculous attempt was made by us to remove a rock at the entrance of Plymouth Sound, about fifteen years ago by blowing up an old cylinder of powder which produced no effect whatever on it. But the way that we go to work and the way the Americans did at New York, as recorded in these pages now many years ago, are two distinct operations. Commend us to our American friends on occasions where patience and perseverance are required rather than to the off-hand work of our clever engineers.

WE noticed in our last the departure of the *Nonpareil* from New York on her voyage across the Atlantic. She has made a very successful voyage as appears by the following account of her arrival at Southampton. Our South American friends will recognise in her the principle of the Balsa of Arica.

The American life-raft *Nonpareil*, forty-three days from New York, arrived here between five and six o'clock on the evening of the 25th of July, and is moored off the dock shore. This daring adventure has been conducted by Mr. John Mikes, captain, and a crew of two, named George Miller and Jerry Mallene. She is twenty-four feet long and twelve and a half feet broad. The raft, which has two masts, consists of three cylinders, pointed at each end, united together by canvas connections, having no real deck, and is strengthened by boards slipped under strong iron neck-pieces, the whole kept together by lashing. A waterproof cloth, hung over a boom, closed at each end, somewhat resembling a gipsy tent, affords sleeping accommodation, two at a time, and the third keeping watch. This is fixed on a strong locker, in which the provisions are kept. The raft lay to seven times from stress of weather, and the last vessel spoken was the *John Chapman*, a week since, from which they were given a fowl, which is still alive and well. They have arrived with thirty gallons of water to spare. The captain was poorly two days during the passage, otherwise all have been in perfect health, and the men are in good spirits, their countenances looking healthy and bronzed by the weather. They had no chronometer on board, and sailed by dead

reckoning, and corrected their position by vessels they spoke. There is a smaller raft on deck for use as a boat. The raft has kept perfectly water tight all the way, not a leak of any sort having occurred. She is fitted with an apparatus for filling the tubes with air. On the arrival of the raft, Mr. J. R. Stebbing, the president of the Chamber of Commerce, went on board, congratulated them on the success of their daring enterprise, and tendered them any good offices that might be required. The captain landed on his arrival to report to the United States' Consul, Captain J. Britton.

—
WHAT an amount of good sense there is in the following lines—

Speak kindly!—'tis a simple thing,
 Yet bears a wondrous power;
 'Twill shed the bloom of summer time
 O'er every darken'd hour.
 'Twill calm the jarring chords of life,
 By grief or passion stirr'd;
 Like oil upon the troubled waves,
 Is a kindly spoken word.

And they who fought, but yielding fell,
 Were wreck'd by passion's blindness,
 Though fall'n, may yet be won by love
 And blessed words of kindness.
 Then let no cold self-righteous spirit
 Place love and pity under ban;
 Con well this lesson's holy teachings,
 "Deal gently with thy fellow-man!"

Speak kindly!—many a bitter word,
 Is thoughtlessly and rashly spoken,
 And through years of vain regret
 Its galling chains remain unbroken.
 The sweet glimpse of Paradise,
 The truest types of Heaven above,
 Are beaming smiles and kindly deeds,
 And gentle words of love.—*Selected.*

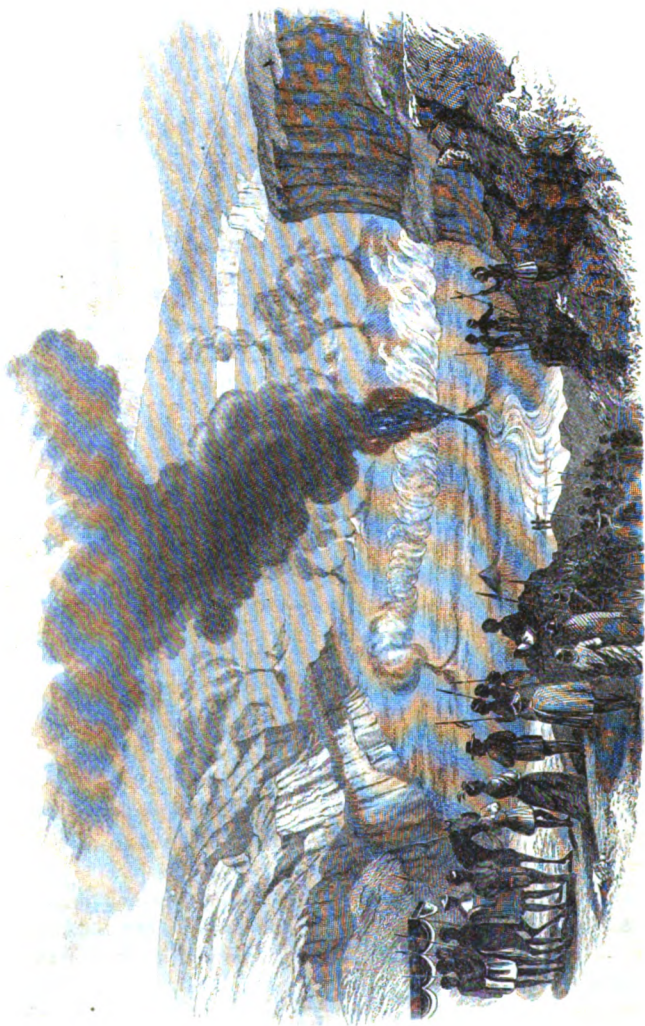
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 CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY,
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EDWARD DUNSTERVILLE, *Commander, R.N.*

*Hydrographic Office, Admiralty,
 22nd July, 1867.*



CRATER of MAUNA LOA
Fourteen Thousand feet above the Sea
(Sandwich Islands)

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

SEPTEMBER, 1867.

ENGLAND'S MARINE.

LEAVING, for the present, all practical details of the subjects contained in the first article of the *Nautical Magazine for August*; I wish to devote this short paper to a consideration of the relations existing between the owners of ships and their commanders, and between the commanders and their crews.

This is undertaken now for two reasons;—first, because I hope that among the readers of the *Nautical*, there are some commanders who take a sufficient interest in all important questions affecting their profession, and that they will bring their skill, intelligence, and experience to bear upon those subjects, and send the results of those considerations for publication in this periodical magazine of useful information.

Second. Because I have a conviction that the source and origin of the larger part of our enormous list of annual *casualties* and disasters at sea may be traced to the very unsatisfactory character of these relations.

1. The relation between the owner of a vessel and her commander is materially injured by the practice of **INSURANCE IN FULL**. In confirmation of this assertion, it is only necessary to state, that the cases are not few where the owners would be glad to *hear no more*

about their ships after they have left port! and so long as owners can send their ships to sea at the *risk of others*, just so long will they continue to be indifferent about the abilities and the characters of their commanders, and also careless about the equipment and seaworthiness of their vessels! For instance, no one acquainted with maritime interests can think that the unfortunate *London* would have left port in the condition she was in, to founder in the Bay of Biscay, had she been at the owner's risk, and under the *uncontrolled* command of the captain. The strange fact is, that it is not the *owner* who is so much concerned about the character of the commander of the vessel, as the *underwriter* is,—a party who knows as little about the ship or her commander as the Llama of Thibet does, and with about as much control in her equipment.

If this contrast between owners and underwriters were simply a speculation, no one would have a right to interfere; but as it is a question affecting the lives of seamen and passengers, as it is also a question of national importance, as well as one seriously affecting our interests and reputation as a great maritime people, it demands consideration. The best remedy appears to be **PARTIAL INSURANCE**, and anything beyond it to be made *illegal*. No doubt this ought not to be necessary. But as the present time is one in which excessive competition is sure to be destructive alike of both honesty and humanity, some interference of the government is absolutely necessary.

2. England will never attain to *true* maritime greatness until those who command her ships act upon the principle that they have a **DUTY** to perform towards those who sail under their charge, *equal in importance* to what they owe to their employers and superiors. This remark applies as much to the Royal Navy, as it does to the merchant service.

There never was a time, in this country, when the relations between capital and labour were in so unsatisfactory a condition as at present. The want of harmony between these two main elements of national prosperity is deeply felt among the nautical classes. Had there been for them the same facilities of combination as there are among landmen, we should before now have had a general strike of seamen, not so much, perhaps, for better wages, as (in the first place) for better *forecastle accommodation*. Who, when going over a ship, has not been struck in passing from the gilded saloon to the dingy stifling fore-castle, with, what may be called, the *inhuman contrast* between them; and has not ceased to wonder that discontent and disaster should have become chronic in our merchant service. Wherever a flag flies over a vessel so *unequally* freighted, with splendour in her after part, and

squalor in her fore part, though it be that flag of which the proud boast is made, that it has "braved a thousand years the battle and the breeze," in every such vessel, when the hour of peril comes, there will be found wanting the essentials of good discipline and of safety.

The "Sailors' Home" has become an institution of our land, and one greatly to be commended. But it is a question whether such institutions are rightly named; for what is a *sailors' home* after all but a short temporary refuge for a seaman from land sharks and other two legged creatures of prey, in which *home* he passes not more than perhaps one year out of every ten on an average, and all the rest of his life he passes on board ship, which ship *really* is his *home*, and where he should be so treated as to be made to feel that really as the old sea song says,—“His HOME is on the Deep.”

W. C. P.

NETHERLANDS.

Report by Mr. Thurlow, Second Secretary at the Hague, on the "Waterstaat" of the Netherlands.

The Hague, April 10th, 1867.

The actual kingdom of the Netherlands is composed of the following eleven Provinces:—

- | | |
|----------------|------------------|
| * Friesland, | * North Holland, |
| * Groningen, | * South Holland, |
| Drenthe, | * Zeeland, |
| * Overijssel, | North Brabant, |
| * Guelderland, | Limburg |
| * Utrecht. | |

Of the eleven Provinces above mentioned, the eight marked with an asterisk abut more or less upon the "outer waters" of the German Ocean, and combine in their conditions of existence the double danger of submersion from the "inner" and the "outer" water—*i. e.*, from the drainage of the higher lands of Central Europe and from the inroads of the open sea; of which two evils the former is most dreaded, being strangely, as it will be later shown, more entirely beyond the power of man to keep within control.

Constructionist and Destructionist Schools.—The physical formation of the Netherlands, as a subject of much interest to the Dutch themselves, has received a large share of the attention of their learned and scientific men. Two schools have thus been founded; one of which maintains that the Netherlands have been abandoned by the

sea to man by the very gradual upheaving of the land, and the deposit among the sandbanks, as they emerge from their watery cradles of slime and soil, borne down through the lapse of countless ages by the Rhine, the Meuse, and the Sheldt. The second school, whose tenets appear to be less upheld by science, pretend that the elements have, through many centuries, been endeavouring to regain possession of the Netherlands; that the sandy soil has been constantly washed and blown away, and buried in the depths of the German Ocean; and that the bare existence of the Netherlands of to-day is only due to the mastery of mankind over matter.

Both these doctrines, diametrically opposed to one another as they are, may, however, be applied to certain portions of the country under discussion; for no less surely do the hands of man, by building dykes, exclude the stormy waters of the Zuyder Zee from overriding the rich pastures of Friesland, Groningen, and Utrecht, than do the "dunes" or downs of sand, thrown up by the sea along the coast-line of North and South Holland, keep at bay the tempest-tossed waves of the German Ocean, as they lash in vain fury a breakwater of their own formation.

The two schools above referred to are known as "Constructionists" and "Destructionists." Both adduce arguments and examples in support of their respective theories. They first point with pride to what has been termed the Archipelago of Zeeland, or "See-land"—"a region outcast of ocean and earth," which "the slow process of nature," backed by "the untiring industry of man," has transformed from floating quicksands into rich alluvial grain, fruit, and flower-bearing plains. These islands are quite unknown to the ancients; and this fact, when taken by the side of the careful geographical descriptions handed down to us by Pliny and Tacitus, tends to prove that, if existing in their time, they must at least have been uninhabited. The earliest authentic records of them describe "the spongy land as rendered almost uninhabitable by the frequent overflow of numerous rivers when forced back upon their currents by the stormy sea. Here, within a half-submerged territory, a race of wretched ichthyophagi dwelt upon 'terpen,' or mounds, which they have raised like beavers above the almost fluid soil;" and "here it was that, at a later day, the same race chained the tyrant ocean and his mighty streams into subserviency, forcing them to fertilize, to render commodious, and to cover with a beneficent network of veins and arteries, a country disinherited by nature of its rights." This province has adopted, as its national crest, a lion rising out of the sea, with the appropriate motto, "Luctor et emergo."

The destructionists, on the other hand, derive a gloomy satisfaction from the contemplation of the ravages of the relentless penetrating ocean. The season of the spring-tides is naturally the one that a sad experience has taught the coast inhabitants of the Netherlands to watch with annual anxiety; and if, as often happens, the spring-tides have been preceded by a long continuance of south and north-westerly winds, their anxiety is not unfrequently succeeded by despair.

Dangers from the "outer waters."—South-westerly gales, acting on the surface of the Atlantic, drive an accumulation of waters round the north of Scotland into the German Ocean, where, encountering northerly winds, the sea is propelled with great violence through the British Channel, in search of its original level in the Atlantic.

The straits of Dover being, however, too narrow to carry off the waters as rapidly as they accumulate, they fall back, and pile themselves up against the coast of Holland. Then the weight of the "broad ocean leans against the land," and the preservation or submersion of the latter is at such times entirely dependent on the solidity and powers of resistance of the sea-walls or dykes.

On these and similar occasions the alarm-bell sounds in every fishing village and coast hamlet, and every human being, capable of bearing aid in strengthening and heightening the dykes by the application of hurdles, sails, and whatever is most ready to hand, is forcibly impressed into what is literally the service of the State.

This race in the erection of an embankment against the rising tide is frequently continued through many midnight hours, along a length of many leagues of quaking dykes, by men, women, and children; and relief to their anxiety and labours only dates from the happy moment when the ocean tide begins to ebb again, and they acquire an undisturbed repose of some few hours to gird themselves for a renewal of their struggle with the elements.

Inundations from the Sea.—It is in the above combination of wind and tide that past disastrous inundations from the sea have had their origin; and it is to them that has been due successively the submersion of fertile provinces, now represented on the map by the stormy waters of the Dollart and the Zuyder Zee. •

The history of the submersion of the former has been accurately preserved. It was in the spring of the year 1277 that the piled-up waters of the German Ocean broke their barriers to the north of the Province of Groningen, and converted the smiling, fertile delta of the River Ems into a watery waste, which the Dutch have christened "the Furious," or Dollart.

Similar catastrophes, on a greater or a smaller scale, all well authenticated, occurred in the years A.D. 533, 792, 806, 839, 1164, 1170, 1205, 1210, 1221, 1230, 1237, 1248, 1249, 1250, 1257, 1277, 1282, 1287, 1300, 1336, 1400, 1421, 1429, 1500, 1507, 1516, 1524 (in which year three inundations occurred), 1530, 1532, 1559, 1570, 1584 (on November 1 of this year some of the highest ground in Friesland was submerged, and over 100,000 persons lost their lives), 1591, 1647, and 1687. In this year the Spanish Governor Robles introduced an improved method of dyke construction; yet notwithstanding the erection of more efficient barriers against an ever-watchful and invulnerable enemy, fearful inundations of the sea are recorded for the years 1591, 1610, 1647, 1649, 1675, 1687, 1717, 1776, and 1825.

To the inroads of the sea, above recorded in the twelfth and thirteenth centuries, was due to the gradual formation of the Zuyder

Zee ; a destructive work of vast magnitude, conducted by the hand of nature with most relentless energy and precision. No terrestrial convulsion came to the aid of the "outer waters" in the execution of their design ; it was accomplished in the course of a century and a half, in a laborious, patient kind of way, and Texel, Vlieland, Ter Schelling, Ameland and Schiermonnik, isolated continuations of the "dunes," or "narrow rope of sand," which constitutes the sole natural defence of Holland against the ocean, are all that now remain to mark the actual limits of these vast submersions.

Such are the dangers by which the existence of the Netherlands is daily threatened from irruptions of the "outer waters ;" or the sea. It is but necessary that a tide should rise one inch higher than is provided for by some sea wall, a circumstance dependant upon the ungovernable forces of the winds, and fertile provinces descend forthwith into the watery depths of the German Ocean, whence it is pretended that they originally sprang. Yet, great as are the dangers thus menacing Holland from the outer waters, or the sea, still more formidable are those to which she is exposed from abnormal incidents and conditions of the "inner waters" of the Rhine, the Meuse, the Scheldt, the Wasl, the Leck, the Yssel, and their affluents and tributaries, which seam the Kingdom of the Netherlands, and parcel it out in an archipelago of islands.

Dangers of the "inner waters."—The breaking up of the winter is the period of the year when danger is most to be apprehended from the "inner waters ;" and the Rhine, "the father of all German rivers," is then the origin and source of evil. The great danger to be dreaded is the breaking up of the ice on the upper and swift waters of the Rhine and Meuse, before a thaw has opened up a free passage for the ice-blocks to the sea ; and this danger is augmented when much snow has fallen, and suddenly melting, has soaked and soddened the artificial banks by which the Rhine and other rivers are held within their bounds in periods of flood. This combination, which occurs to a greater or a less extent almost every year, may at any moment of the winter season deluge and destroy some of the richest provinces of the Netherlands. The last great catastrophe of the kind occurred in 1861, when the ice from the "upper waters," unable to force a passage through the still solidly frozen "lower waters," completely filled the river bed, and rising high above the artificial banks, compelled the accumulating waters to break their bounds, and spread themselves over many hundreds of square miles, dealing death and destruction among villages, flocks, and herds, and provender.

To understand, however aright, the great dangers to which this "low land," "nether land," "hollow land," or Holland, is exposed from irruptions of its "inner waters," it is necessary to realize the fact that the Rhine, the Meuse, etc., like the Mississippi, the Ganges, and all other great natural drainage systems of the world, deposit much soil, earth, and sand (only partially held in solution), along the river bed ; that this process of silting up has been going on without intermission for countless ages ; that it has been combated by the Dutch by the

gradual construction of artificial banks, and that the actual results with which the Netherlanders of to-day are brought face to face, is, that the great waters of the lower Rhine are borne above the level of the country through which they flow, and which in many places lies many feet below the bed of a river twenty feet in depth. Under these circumstances it does not require a prophet to foretell some grand disaster from the "inner waters" at perhaps no very distant day, when some unusual and unforeseen conditions of the thermometer and barometer will throw a greater strain upon the artificial river banks than they are capable of supporting, and when we shall have in Holland a redistribution of land and water, and a probable return to a more natural topography than that offered by the Netherlands of to-day. It is now very generally held in Holland that, in building up the banks of rivers in proportion as their beds have silted up, the Dutch have committed a fatal blunder, for which they will inevitably pay dearly at some future time; and it is argued that the frequent overflowings of the great rivers of the delta of the Netherlands were designed by nature to fertilize the soil. To escape however from inundations, which are not hailed with the delight of the Egyptians as absolutely necessary to the growth of grain, and to rid themselves of the practical inconvenience in a densely-peopled country of having, at uncertain periods, great rivers wandering about among their towns and villages in search of new outlets to the sea, the presumptuous Dutch have built up bulwarks to defeat the aims of Nature, and time alone can test the wisdom of the experiment.

Origin of the Waterstaat.—Still, whether right or wrong in the course it has adopted to defend itself against these watery dangers from within and from without, it is hardly strange that as this country advanced in science and the arts of civilization it should have concentrated much energy and thought upon the means of best supplying, by the hand of art, the security which the hand of nature had denied; and it is the result of three centuries of such an expenditure of energy and thought that it is now intended to record in a short account of the administration known as the "Waterstaat," to whose supervision the construction and maintenance of all hydrographical undertakings in the Kingdom of the Netherlands are by law and ordinance entrusted.

Powers vested in it.—The powers vested by the State in the senior officers of the Waterstaat are in full proportion to the national importance of their office, and to the variety and extent of the work involved in watching and controlling "the state of the waters." At the command of an employé of this administration any subject of the Netherlands can be summoned from his bed and compelled, under heavy pains and penalties, to labour in the public service. From this primary obligation to the State not even the uniform of the King's Guards can exempt a Dutchman; individual soldiers and whole regiments are as much bound to obey the signal of alarm as the poorest operative.

In times of danger, the proprietors, whose landed and household interests are at stake, are not permitted to exhaust their energies and

resources in the construction or fortifying of barriers to resist the growing waters within the narrow limits of their own fields and villages; on such occasions a law obtains, more respected by a Dutchman and more absolute than any martial law that ever was proclaimed. The whole population, and, if necessary, drafts from the neighbouring provinces, are called together by the booming of cannon and the tolling of bells to resist the threatened watery invasion at the most strategic points, and, so long as danger lasts, "force majeure" reigns supreme, and the personal service of the King, the conduct of legislation, artillery practice, and the passing bell are hushed, and held in due subservience to the mandates of the Waterstaat.

Training of its Officials.—To educate engineers for the performance of the duties of this administration a special college has recently been founded at the historical little town of Delft, in the province of South Holland; a nearly central point as regards the more important hydrographical public works in the Kingdom of the Netherlands. On every suitable opportunity the theories there taught are tested and explained to the students by practical illustrations; and the receipt, by the Governor of the Institution, of a telegram from some threatened point, is frequently a signal to the members of the College to put away their books, and betake themselves without delay to witness the rising and resisting of the waters of the Rhine or Zuyder Zee.

Cost of the Waterstaat.—Such are the general duties, and such is the education, of an administration which, according to competent authorities, has, in the last 200 years, had the spending of over 3,600,000,000 florins (300,000,000*l.*), within the narrow tract of country lying between the Dollart and the Scheldt. This sum may be regarded as the price at which Holland has been purchased from the waters; but, great as it is, the interest on this money sunk does not fully represent the rent that Dutchmen pay for the uncertain tenure of their land, and the Kingdom of the Netherlands can only be compared to a copyhold property, with Neptune for Lord of the Manor, to whom annual fines are paid amounting to over 1,000,000*l.* sterling, in the shape of repairs and superintendence.

Calculated as these figures are to inspire respect for a little country, with an area of but 12,623 square miles, hardly as large as Wales and Yorkshire put together, to which this money stands in the light of a national debt, amounting to little short of half of that with which the revenues of Great Britain and Ireland are chargeable, we must examine in more detail the stupendous public works on which this money has been spent, in order to form a due appreciation of the untiring energy and industry necessary for the preservation of the land described in Hudibras, as—

"A country that draws fifty feet of water,
In which men live as in the hold of Nature;
And when the sea does in upon them break,
And drowns a province, does but spring a leak."

The works may be divided into two great categories, as destined for the construction of new land, or the preservation of the old, and as

noble specimens of each class we will cite the draining of the lake of Haarlem, and the dykes of West Capelle, to which the island of Walcheren owes its existence as dry land.

Lake of Haarlem and Dykes of West Capelle.—The first of these works was accomplished in 1852, after thirteen years of toil and anxiety, at a cost of 11,000,000 of florins (916,666*l.*), a sum which, large as it is, has nevertheless been completely recovered both in capital and interest, by the sale of 42,481 acres of valuable land; while the second presents to view a sea wall 40 feet in height, with a foundation 150 feet in width with a slope towards the German Ocean of but 1 in 13, faced with granite brought from Norway, thatched with turf, and surmounted by a carriage road lined with fine trees. Of this dyke it has been said, that had it been originally made of solid copper, the first cost would have been less than the sums successively expended in building and repairs.

Three hundred miles of dykes on the above pattern, but varying in solidity and cost according to the accidents of their position as destined to resist the heavy seas of the German Ocean, or the steady pressure of a rising river tide, protect the islands of the Province of Zealand from the irruptions of the outer and the inner waters: while no less than 85 per cent. of the superficial area of the eight provinces marked with an asterisk on page 473, lie below the level of the sea, and have been reclaimed at different times by private or public enterprise, after the manner of the great instance quoted of the Lake of Haarlem.

Boezemlanden.—The remaining margin of 15 per cent. of the natural land, the Dutch term “boezemlanden,” or lands from which the water runs off without artificial aid. These are principally sandy wastes or rabbit warrens, and represent well nigh the only portion of the Netherlands that Nature appears to have designed as habitable for man.

Having thus briefly shown the important part that water plays in the physical economy of Holland, covering as it would, if unchecked, eight and a half-tenths of eight of her provinces, we shall proceed to a more detailed account of the uses to which this water is put in times of peace and war by the skilful hands of the patient race by whom this country has been constructed.

This inquiry, so far as regards pacific purposes, may be dealt with under two heads, Agriculture and Navigation, and both of them become subservient in times of war to the necessity of the State, which in the exercise of its “eminent domain takes to the water like a duck,” and finds its natural refuge in resort to inundation.

To appreciate the beauty of the Dutch science of hydrodynamics, it is necessary to understand that from the first to last it is a question of comparative levels. The error of a centimètre in level might drown a province, or frustrate the purpose for which some canal had been designed.

Amsterdamsche Peil.—Thus it may be said, without exaggeration, that the most important institution in the Kingdom of the Netherlands

is a certain antiquated pile at Amsterdam, but one of many millions of pine-trees brought from Norway on which the city is perched, which indicates the rise and fall of the outer waters of the Zuyder Zee and German Ocean

For 200 years this pile has been watched with anxiety by the burghers of the Netherlands, and a graduated scale has been marked upon it, in which the mean water level is represented by zero. It is known as the "Amsterdamsche Peil," and every hydraulic undertaking in the country is measured by its standard, as having a level of so many mètres or centimètres above or below the usual level of the sea. The initials A. P. (Amsterdamsche Peil), O. A. (Zero of Amsterdam), or Z. P. (Zero of Peil) are the forms of abbreviations most generally used to represent the starting point in all hydraulic calculations; and one of these with the signs + and — must therefore necessarily occur in every intelligible description of Dutch public works. In the course of this Report, the last one, Z. P., will consequently be used without further explanation.

Polder and Boezem.—Before proceeding further it is necessary to explain the meaning of two technical Dutch words, which are best retained in a descriptive task of this kind, as difficult, if not impossible, of translation. The first is "polder," which signifies a drained lake or tract of low-lying ground, only kept free from water by dykes and periodical pumping out; the second is "boezem," or the basin into which are pumped the waters from the polders belonging to any one of the hydraulic administrations among which the Netherlands are parcelled out.

Thus, in point of fact, the Haarlemer Meer is but a polder, and it is indeed so called on every Dutch map; while the river IJ, an estuary of the Zuyder Zee, on which Amsterdam is situated, is the great boezem into which it is pumped.

When the boezem is natural, and a marked feature in the topography of the country, like the river Amstel, the old Rhine, or the Vecht, it often gives its name to the hydraulic administration of which it is the heart; in other cases, when the boezem is artificial or less marked, the administration takes its name from some central town, as Delft or Neerden. Thus we have Amstellands Boezem, Rijulands Boezem, Delftlands Boezem, etc.

Many of the Artificial boezem, and indeed many of the lower-lying polders, have been formed in early times by excavations of turf, of which fuel many millions of tons are still annually consumed; and to such a point has this mine of wealth been worked in some provinces—for instance, in Groningen and Drenthe—as to have entirely changed the face of the country, producing most abnormal topographical conditions, which will call for observation at a later period in this Report.

The value of a polder for agricultural purposes is dependent on its situation with reference to the boezem of the system to which it belongs. Different terms are used to distinguish those polders that abut on the boezem itself, from those lying, so to speak, further inland. Then there are also what are termed "administrative polders," of per-

haps a lower level, and nearer to the boezem than others, and into which these others may be drained without resort to artificial means.

The machine in most general use in the Netherlands for agricultural draining purposes is the Archimedes screw pump, and the motive power is almost invariably the windmill, which is in much favour with the Dutch husbandman, as applicable to his three primary requirements of draining, the conversion of his own corn into flour, and the sawing of the timber needed for the construction of his dwellings and farm buildings.

The most constant winds that blow over the flat surface of the Netherlands are thus utilized, and become of immense importance to the country as a grain-bearing land. Without them it would be a superhuman labour to keep the polders free of water; and the only circumstance that tends to check their utility is the fact before alluded to, that a continuance of certain winds, piling up the outer waters into which the boezems discharge, renders it necessary to shut the sluices to keep out the ocean knocking at their doors. When this occurs, during the rainy months or the melting of the snows, all agricultural pursuits in the locality affected are brought to a standstill. The water rises daily in the polders, and they assume the aspect of inland seas; while the boezem, full to the brim, and incapable of discharging into the sea, will not stand the introduction of more water without overflow.

The orders of the Waterstaat are then rigorously enforced; the windmills cease pumping, and the peasant knows that he cannot sow or plough his fields until a change of the high wind, which, if it only came from another quarter would be so favourable, allows the outer waters to retire, and permits the re-opening of the sluices towards the sea.

(To be completed in our next.)

A FOREIGNER'S ACCOUNT OF US—*The Docks of London.*

(Concluded from page 443.)

AT a short distance from the West India Docks and at the same Blackwall which forms the maritime quarter of London are situated the East India Docks, constructed in 1804 and 1805, in the reign of George the Third. These are entered through a massive stone archway, supported by large columns and bearing an historic inscription. A black board shews the names of the vessels recently arrived, and also the part of the quay where they are to be found. It should be observed that these docks are like towns, and that a ship in them is as difficult to be found as a merchant would be in London. The line of quays is evident enough by the basin of ships and their masts, and by the sheds destined for the merchandize. These are covered in with tiles and have windows, and the cases are admirably arranged in them, leaving a clear passage for the workmen. Behind these there is another range of storehouses, strongly built of brick with iron doors.

These buildings were destroyed by fire some years ago, when eight thousand bales of hemp were consumed. The effects of the fire may be traced along the ground, the surface of which is strewn with ruins. Since 1838 the East India Docks have belonged to the same Company as the West India. The names import and export are painted in black letters and distinguish the two grand divisions of these depots; and certainly a comparison of the goods they contain is rather interesting. Those assigned to imports contain generally the raw material—such as buffalo horns, indigo, silk, spices, etc.; the export display, on the contrary, the results of labour—such as spades, ploughshares, furniture for houses, etc. In fact, against the produce of nature, is collected the work of art, fashioned by the hand for the benefit of the human family and the tillage of the ground. A walk through the docks gives an excellent lesson in political economy, and the history of the races is well represented by the condition of their productions. But how to keep one's attention fixed in the midst of the perpetual whirl to and fro of trucks laden with merchandize, running almost between one's legs, is the great difficulty. Every one works here, that is, every one of a living form. Even the cranes which are fixed over the jetties, stretching out their long necks with sacks of biscuits, which they are depositing on board ships fitting for sea. From time to time, workmen are passing and repassing the planks which are afforded by the gates, which serve to keep the water in the basin containing the ships, and they answer the double purpose of sluices and swinging bridges. Across the gates one enters a new district of streets behind streets, where may be seen persons gravely entering in books the accounts of the merchandize which passes and repasses. However, the hour of one is struck by the Dock clock, on which all manual labour is suspended, and groups of workmen are seen on their way to the great entrance going home to dinner. We will take advantage of their absence and pay a visit to the ships which they have left.

The basins of the East India Docks being intended for the largest ships have never less than twenty-three feet of water in them, and in these are seen ships of every form and every country. The English are great admirers of these floating monsters, many of them built by themselves, and living, as it were, much among them, accounts for the enthusiasm with which they look on naval architecture. Their huge masts at rest, the fine nature of their cordage, the enormous cables coiled by themselves like serpents in their nests, the long hulls of certain steamers, either of iron or wood coppered all alike, suggest the sea. What pride do these vessels evince in their imposing form, having found out the secret of making swift and rapid passages. And with what propriety do their constructors communicate to these monsters the distinguishing traits of those creatures which make their way on the surface of the ocean. As to the interiors of these vessels, some of them are really palaces afloat, their saloons of rosewood or citron, a magnificent silver service, and every Asiatic delicacy. But what is no less amusing is the nomenclature of these ships as well as the specimens of sculpture they carry about their bows.

Among the English the ship is a person, generally a female; her name is not only a means of identifying her, but in certain cases a reasonable being, the destination of which belongs also to the crew. Many among them have received the name of the regions to which they go. For instance, the *Indus* with the figure of a river, the *Mauri* decorated with the figure of one of the aborigines of New Zealand, with a spear in his hand and a red mantle over his shoulder, the *Delhi* which is bound to Bombay, and which carries a black female at her bows. The English sailor is no stranger to ancient history, he likes a touch of the classics if one might judge by the name *Ulysses*, for so is a vessel called, with a figure-head wearing a hemlet painted blue, bearing on the breast a shield with a red scarf on, the shoulder and one arm raised in a threatening position against an enemy. Again, the *Centurion* is a heavy vessel which has a complete Roman figure armed from head to foot. But what Jack prefers to history is something marvellous and allegorical. He particularly likes the figure of *Jason* with the golden fleece, with a lance in his hand and a dragon under his feet. Sometimes he is undecided between fable and mythology. The bows of the *Calcutta* has angels with a Centaur holding the head of *Medusa*. The favourite emblems of navigation appear in the order of Nymphs and Naiades. What lovely Sirens with their bare breasts. There is the *Water Nymph*, a damsel with a wreath of water lilies and a blue scarf over her shoulders and a golden wand in her hand. A notice informs us that this vessel will soon quit the docks for New Zealand. The *Conflict* with a figure head bidding defiance, with a buckler on one arm and a trident in the other hand. Again, the literature of the day supplies subjects for nautical sculpture. The same with the heroes and heroines of Walter Scott, Byron, and Shelley, and political men like Bright, also celebrated singers and dancers, and angels of charity like Florence Nightingale have often the honour of conducting across the seas vessels of which they form the principal ornament.

But the seaman will also follow the dictates of his own heart in his choice of a figure head. He will have his vessel named after the lady of his choice. Certainly, we all have our own ideas of beauty, and Jack's is generally a bouncing, jolly damsel, with regular features and a fresh coloured skin, for what the seaman, who is generally well bronzed, likes particularly with females is a bright rosy face. As the artists in these productions generally are very scrupulous in their ideas the ladies become old fashioned, and not always according to the taste of the present generation. Whilst I was contemplating one of these figure heads dressed in the old style, a young sailor, who was passing by, observed, "what a pretty lass, she only wants a little of the crinoline." Most of these figure heads, however, contrive to lose their arms in their contests with the elements. The seamen frequently have a superstitious confidence in the lady figure head, always represented in an unarmed condition; but what are the crew for but to defend them at all hazards. Bad luck will he have who insults them. And if he cannot take his beauty to sea with him in real flesh and

blood, at any rate, he can take her effigy in wood at the prow of his ship.

It is by no means necessary to go far from London to find the great places of nautical industry. Since 1805 the London Docks have been open between Shadwell and Wapping for ships laden with wine, brandy, tobacco, and rice. Land is far more expensive in the town than in the country, and the London Docks are distinguished for what the English call compactness. Here vessels are crowded together in basins, where the water is nearly stagnant. The storehouses rise like fortresses on the quays and are gorged with merchandize. What a mass of exotic produce. One must not be here surprised to see articles of first importance in trade removed by shovels, such as sugar and coffee, but who is familiar with commerce, and is not surprised on meeting with a large accumulation of certain drugs? Who is ever to consume the amount of 1800 barrels of olives? Nutmegs enough to frighten one; and cinnamon, some 8000 bundles imported in a year, is pretty well: in fact, the visitor here may wander amidst riches of which it is hard to tell the real value. A range of bottles, conspicuous from their ugliness, represent a fortune. They contain quicksilver, and one knows pretty well, that is an expensive article. But the great advantage in a commercial point of view of these docks, is, that as they are under the surveillance of the Custom House. The merchant is not obliged, as formerly, to pay the duties at the time of their entering the port. They are themselves a guarantee for their own expenses as long as they remain in the docks, and continue within sight of the customs without losing any of their value.

The labour of the docks is very much done by means of mechanism. Hydraulic lifts raise and lower goods at pleasure, even bringing them to the window appointed for their reception or discharge. These moveable ladders are summoned, and immediately appear. Among these enormous warehouses are those for the reception of tobacco, covering an area of nearly five acres. They are high four storied buildings of brick, connected with each other along the quay with casks before them, openings being occasionally left in them leading to what are called the cellars.

As I had an entrance not only to the cellars, but also to entitle me to taste the wines, I stopped at the opening No. 5, according to the card which I had. One of the attendants lighted two lamps, presenting one of them to me, attached to a long wooden handle, and proceeded to guide my steps. The cellar to which I had come contains 20,000 casks of wine, and this is by no means the largest, I found, on visiting the same day the East Crescent Vaults. Who then could thank his stars there was no wine in England? But I must say, that the wines which the English prefer do not come from France. The English do not appreciate French wines; they think them weak and sour. For my part, I think their taste is bad, and I think I can prove it. Numerous historical monuments attest that the produce of our vineyards was formerly much more common across the Strait, and that in those days they were the principal on the tables of the rich men. So it was

up to the year 1693, when William the Third who certainly had more than one reason for disliking France, determined then to be revenged on her commerce, and one of her principal articles. He accordingly levied a special duty on her wines, and thereby closed this country against them, and the English had to look to another source for wines. In fact, for red wine they gave the preference to that of Oporto, not that it was better than French, but because by the treaty of Methuen concluded in 1703 with Portugal it was more favoured. Since that time it is true, the tariff of the English custom house has been equalized in 1831, and successively reduced on all the foreign wines: but the change came too late; the die was cast, and the British palate was suited to another kind, which was not French. Whether the fault lay with Louis the fourteenth, or William, is a question, but the last commercial treaty will require a long time to contend against a taste established by two centuries. The regime at their tables is not favourable to French wines, they do not drink till they have dined, and then require strong wine instead of spirits.

My guide conducted me to two particular wines, Port and Sherry (Xeres), which each of their kind certainly were excellent. The first came from the banks of the Douro, about fifty miles from the town where it received its name for the voyage as far away as the New World. Red and prime in colour is really the genuine Portuguese wine. The other (Sherry) is made in the vicinity of Cadiz, between the Guadalquivir and the Guadalate. The country in which this wine is produced is in the form of a triangle, of which Xeres on the frontier occupies one of the angles. It varies from pale to brown, but it is an axiom among the English not to judge by colour. The age, the crust, the name of the vineyard, and the merchant are the veritable tests of the wine. As I returned the glass to the attendant from which I had tasted the wine, a discussion took place between two gentlemen near us. As the subject was particularly interesting and had nothing personal I attended to it. For a long time the wines of Andalusia as well as of the Canaries were always known by the name of *Sack*. The word is found preserved by the poets of Elizabeth's reign, particularly Shakspeare. Walter Scott himself uses the term more than once in his novels to indicate Sherry. On the origin of this term, the English will dispute with all the Science of Etymology. One party will agree that it is derived from the French word *Sec*, which seems to designate the wine faded with age from its original colour. The other will maintain that it comes from the Spanish word *Saca*, and refers to the skin of the animal in which it is enclosed originally. To this last explanation, however, there is one difficulty, which is that the skin in which the Spaniards preserve their white wine is not called *Saca*, but *odre*. The two Englishmen being unable to agree on the subject appealed to my arbitration in my quality of a foreigner no doubt. But they were very unfortunate, for such a post of honour had never fallen to my qualifications, and of course I declined my interference. But it appears to me the word is neither Spanish nor French, but simply English. The old merchants of Great Britain were no doubt struck by

the form and nature of the skins in which the Andalusian wines were brought to their ships. And naming the wine contained in the skin by the skin which contained it, the wine was called by them *Sack*, a word long known in their language, and which is applied to certain envelopes of merchandize. This, as they said, was the wine in *Sack*.

My Cicerone seeing that I was no connoisseur of Sherry, then took me to be curious in some matters, and proposed to shew me the interior of the vaults. This was just what I wanted. We then continued along the avenue, each side of which was formed by casks, granite pillars succeeding others with arched roofs until lost in the distance and darkness, they appeared a confused mass. This architecture, rude and simple as it is, reminds me of the crypts of old cathedrals. But the most remarkable feature of it here is the mouldy vegetation which springs from the arched ceiling in its darkness. A moist pulpy mass, presenting a curious appearance, is always springing out from between the bricks. To the touch it seems like tinder, and it often appears covered with a sooty coating which disappears. The dock people are extremely touchy on the subject of this arabesque ornament, and don't allow it to be meddled with. According to them it is a proof of the excellence of the vaults. The curious fact is, that such kind of vegetation is never found but in vaults devoted to the conservancy of wine; and they believe that it is to the fumes of the wine this cryptogrammatic vegetation is due. Some of these fungus masses hung down like stalactites charged at the extremity with a cotton like appearance. We continued through these festoons, brushing them aside sometimes with the hand, and solid as they appeared, they would arrange themselves as we left them like linen which had been disturbed by the breeze. At short distances along our route large lamps were placed, the light from which however failed to penetrate the darkness of the vaults. But they served to give an idea of the distance we were going over; and they marked the presence of work without shewing the workmen. The ground which is level, is always covered with sawdust, and I forget how many millions of bushels are thrown on it every week. The tramways on which the pipes of wine are moved about, wind about in all directions, and altogether in one length would extend over a distance of thirty-six miles.

We have now reached the great subterranean road, each side of which is marked by a forest of posts on which, in several parts, thermometers are placed, and which are continually being consulted at least three times a day. It is well known that equality of temperature is essential to the due conservancy of wine, and the temperature of the vaults does not vary more than 2° between summer and winter. At the end of one of the dark transepts which branch off from the main line, I perceived for the first time a window which opened out to the street. The wall was twelve feet in thickness, and thence an opinion may be formed of the small quantity of light that enters through this small opening just enough in fact to make one wish for the light of the sun. Young men and old, and some veritable gnomes pass their lives in these vaults: the day in fact there consists of two nights, in one of

which they work, and in the other, take their rest. As we passed along, my guide directed my attention to a tower of masonry which occupied the whole height of the vaults, the bases of which however was below the floor. This tower which, after all, is but an oven of bricks has a certain celebrity, as known by the name of the Queen's tobacco pipe. It is, in fact, the furnace where certain smuggled merchandize, such as tobacco or tea is disposed of by the orders of the customs. If I am correctly informed, this pipe of the Queen's is some source of jealousy. More than one poor family would crave the articles which it consumes, and however damaged they may be, poverty would know how to turn them to account. At the time when I visited the docks, several weeks had elapsed since the flames of a sacrifice had been seen.

The value of each of these pipes of wine is about £70, and as there are twenty millions of these pipes in a vault, the amount of riches contained in these vaults, which extend over eighteen acres of ground, may be easily calculated. Besides, the brandy vaults contain about thirty-six thousand casks. Each pipe bears its own initials, which specify its owner, the year of its production, the date of its arrival in the docks, and the name of the vessel by which it was brought home. Some of these pipes were actually bearing a crop of fungus of the mushroom kind, but that is considered an honourable sign, not only of itself, but in favour of the parties in whose care it has so long remained. Each pipe pays for its lodging in the docks the sum of fourpence per week, and each barrel twopence. This is tolerably high, and some rich wine merchants of London, who are well known, expend a considerable sum every year for nothing more than the lodging for their wine. But it is right to add, that for this payment they are relieved of all care; their property is well looked after and quite safe and forthcoming whenever they please. Another advantage they have is, that they need not pay the duty on it as long as the wine remains in the docks, a consideration which has no doubt contributed much to the success of the docks. Who then would not admit that the wines of Spain and Portugal require long time to ripen. It is necessary the wines should remain in the wood for some years after their arrival in England, as the only means of correcting the faults of being new. Now the English know well how to calculate (to do them justice) and consider that the interest of the money for the duty is just as well in their pockets as in that of the government. All the time the wine is ripening and increasing in value the government get nothing by it. The merchant can employ, as he pleases, the funds he owes the government for duty up to the day of its delivery in his hands. The reduction of the duties of entrance might modify the habits of business of the English, but the increasing prosperity of the docks defies any modification of the tariff.

On leaving the vaults, I was in a curious condition. The ships in the docks appeared to be all in motion, even the warehouses were turning round before me like windmills, and I remembered hearing that persons on coming out of the vaults have suffered from intoxication

of the fumes of the casks of wine with which the air of the vaults is charged. The labourers themselves employed there, although sober, temperate men, know well this extraordinary effect of the fumes, for they soon contract an appearance in person and figure of the attendant of Bacchus, even Silemus himself. I felt as if I could hardly walk, and my thoughts were all upset. However, this unpleasant effect did not last long, thanks to moving about in the invigorating air. But it was a lesson, for I had in the same day a visit to the St. Katherine docks before me, and they were in the vicinity, surrounded by a high wall separating them from Nightingale Lane, near the Tower of London. These are the two establishments which of all others have cost the most to build. In 1823 a society of rich merchants applied to the British Parliament for authority to commence the works of these docks. On the ground which they proposed to use, there stood the Hospital of St. Katherine, a charitable institution, with the governors and persons of which it was necessary to treat. The result was they consented to leave it upon an indemnity of no small amount and a substitute being provided. Therefore, a building was decided on in the Eastern part of the Regent's Park. But this was not all that was required. There were about twelve hundred and fifty houses to be knocked down, and their thirteen hundred inhabitants to be provided for. The celebrated engineer Telford and Hardwick the architect undertook the work. The most difficult part of it was to excavate the hard soil for the basin and dispose of the matter, and at length it was determined to transport it to Millbank, where it was wanted to fill up an old empty reservoir. So one basin served to fill up another.

The St. Katherine docks are the only ones that a vessel can enter and leave the same day. The warehouses, supported for the most part on pillars sunk to the surface of the ground, have open galleries in which the cargoes of ships are received, and where the workmen are secured from the weather. But the real recommendations of these docks to the economist of all others, is that the system is one of perfect liberty, instead of monopoly. While the earlier establishments of the kind obliged vessels with certain merchandize to enter them, the St. Katherine's docks leave it entirely to the owners of the merchandize, and the convenience of the vessel. This last principle has always succeeded among our neighbours, for in proportion as the licences for old liberties die out, it is found that Parliament will not renew them.

Who are those miserable looking individuals in the garb of poverty in a crowd at the entrance of the London and St. Katherine's docks? Leaning about pale, and immoveable statues of hunger. Their very looks are those of uneasiness and disappointment. Poor men, they are waiting for work. The docks employ a very large number of labourers, porters, etc. ; but occasionally there is even a greater pressure of work than at other times, and it is necessary then to have recourse to what are called extra hands. It is this chance of extra work on which the Bohemians of London form a group which crowds about the entrance to these docks ; in fact, the dock gates seem to be the last resource of English poverty. There are assembled, from day to day and month to

month, all the victims of dissipation or ignorance, or every one in unhappy circumstances. One special trait of man, who is in such circumstances, is an inexhaustible stock of patience, no doubt essential for a person who must work for his bread.

Besides this the work of the docks has an attraction for the poor man, of whom neither address nor apprenticeship is required, but merely strong arms. But the worst of it is, and the fact has been confirmed to me, that many of them have received an education and even held a position in the world, and have not resorted to this mode of living but from having been reduced to the very lowest condition of circumstances. There is no doubt that it is the gentleman whose fall is the severest of the London poor. However, the long line of candidates at the entrance of the docks sometimes bears fruits of success. A voice calls out in the street "men wanted." These statues are in a moment alive: the whole mass at one bound are in the gate, but the want includes about a dozen only of the whole hundred candidates, for which luck of course there is a fierce contest. After the demand is arranged the rest return to their usual condition, there they are as before, and nothing discourages them. Death, sickness, imprisonment, sometimes thins their ranks, but the blanks are soon filled by others, and the specimens of starvation are always to be seen pale and poverty struck, waiting against hope for employment where the riches of the world are accumulated. But what renders these men so interesting is that they beg for work. What a contrast to see indigence obliged to be idle at the very gate of those huge establishments where navigation is incessantly heaping together all the elements of public riches.

The great attraction for the docks to be in the interior of London is naturally the great facility of depositing the merchandise on its arrival and then moving it only to its destination. This advantage is perhaps rather lessened in these days by the great facility of transport, thanks to a new agent for reducing distance. In about 1850, a petition was presented to parliament for the construction of the Victoria docks, about eight or ten miles from London, in the Plaistow Marshes, where there is a creek running into the Thames. Nature herself indeed had prepared for the work, and although these docks are on a much larger scale than those of London, the cost of their construction has been very much less. The whole capital of the company does not exceed a million sterling. To visit the Victoria dock I went by water to Blackwall, where an old craft conducted me to their entrance into the river, and the first feature that strikes one is the size of the basins. They are in fact small lakes where lie huge ships in abundance of room; for instance, the *Northumberland* herself a huge plated ship of five masts and whose battery consists of invisible guns. One of the features of these plated ships is that she does not show the number of guns she carries; one might call them monsters which conceal their teeth. It is however quite by chance or accident and for the purpose of completing them that these ships of war remain any time in these docks, which are devoted to the interests of trade. The West India mail

steamers, large Russian ships, others laden with wood from Campechey, and other merchandize called bulky, have here plenty of room. Such are the vessels which occupy the Victoria docks, where every thing savours of the sea, but still an assemblage of birds which frequent the banks lend a kind of charm to this collection of nautical works. The pigeons apparently like to make themselves at home on the yards and spars of the vessels in the docks. The basins are surrounded with six large stone jetties which are covered by large storehouses. There are also sheds which can receive under cover a thousand tons of guano, and it is only in these docks that this compost can be received. But what is still more worthy of notice is the system of receiving and dispatching goods. A branch of the Eastern Counties Railway penetrates into the midst of these docks. The carriages come to the very sides of the basins, where steamers from sea lie with their cargoes or are ready to proceed to sea on another voyage. The transit for the merchandise in these cases is best from the steamer to the rail. This branch of the Eastern Counties communicates with every other line of the kingdom, and once landed on it, the goods proceed to their destination without leaving their waggon till they reach the end of their journey.

Another interesting scene is that of ships entering or leaving the docks. But it was the last that I was fortunate in seeing, and this was the case of two steamers, the *St. Laurence* and the *Medora*, which were going to Canada. The departure was stated on a board to take place at three o'clock. Their decks were already pretty well blocked up by merchandize, as well as men, women, and children holding, evidently with some anxiety, by the ropes stretched along fore and aft in the vessel. The steam was up, the chimney sent forth its volumes of smoke, the steam hissed, and everything seemed to be ready. The *St. Laurence* and the *Medora* were two screw vessels, but one can scarcely imagine these powerless floating masses in the confined space of the entrance to the basins, where they could not avail themselves of their power. It was necessary to haul them out by means of hawsers; all this was readily effected, and the gates were replaced, and soon the two steamers found themselves at liberty to exert their powers, and they took their course down the river under the usual waving of hats, handkerchiefs, etc.

The London, St. Katherine, and Victoria Docks have been recently united under the same company, and this is about the largest mercantile enterprise on the face of the globe. In the month of June, 1866, their capital was £9,252,549. Their affairs are managed by a court of directors who are most of them merchants, and have the same interest in forwarding the success of the docks by increasing the imports and exports. At the beginning of each year, and at the end of some, their net revenue amounts to £178,930. Their office is one of the handsomest houses in Leadenhall Street. Nothing so much as the construction of the docks has contributed to English commerce. Preserved from molestation by a high wall, and well looked after, the merchandize has been rescued from a system of pillage, accelerated

by the loading and unloading of the vessels which facilitates the classification and distribution of the merchandize. But they owe all this advantage to concentrating at the same place the terminus of the navigation, the railroad, and the electric telegraph.

Every six months the company sees the increase of their revenue. Certainly among the causes which contribute to this prosperity is that confidence for which the English are well known : their free institutions, the participation of all classes in the affairs of the state, the increase and the number of the mercantile marine, and their habit of depending only on themselves. This increase of public prosperity is without doubt a sign of maturity. A nation which, like Great Britain, depends on navigation and-commerce for the elements of prosperity, requires money.

In order therefore to infuse fresh life into useful labour she has to spread information among the working classes and to reduce pauperism. But the English should know that riches are not the only index of national greatness. The rank in society in the scale of modern civilization is not measured by the amount of their imports and exports. Looking to the full condition of the docks, to all those bales of cotton on which the genius of trade and speculation may recline so easily, there is certainly no room for doubting the continued prosperity of her resources. The fear is that they will increase too much, that is in the midst of commercial opulence without parallel, she may lose sight of the interests of station for those of trade. The real power of a nation is the enlightened protection she extends to generous sentiments. Let Great Britain consult her own history, and she will herself confess that at a time when her finances were much less than at present, she held a much higher position in the councils of Europe. The sentiments of complaisance which the present state of her affairs suggests, is not this the cause of this inertness. The repose of being well off, has not this been the rock on which all commercial people have split, and for all that it is in vain we seek for peace in egotism. Among nations as well as among individuals the day will come when the mind will revenge itself on the accumulated triumphs of matter. One may measure ideas by stifling them for a moment under the effervescence of pecuniary interests, they do not ferment less in the depth of societies. Great Britain begins herself to perceive this, agitated and troubled as she is at this moment by the management of certain political matters. And whence comes the cry for war? From those same workmen who have contributed by land and sea to the production of riches. In a free state the sentiments of the dignity of man grows with the development of navigation and industry.

THE VOLCANO OF MAUNA LOA, OWHYHEE, SANDWICH ISLANDS.

The Eruption of January 23rd, 1859.

(Concluded from page 420, with a view. See also plan in former number.)

IN grandeur and beauty, no eruption within the memory of men now living can compare with the present. It differs from most previous ones in the fountain-like manner in which the lava is ejected from the crater to a height varying from two hundred to five hundred feet. It is seldom that eruptions occur combining a great flow of lava with such a lofty spouting. That of 1852 is the only exception we know of. From an account published in our papers of February 17th, by the Rev. Mr. Lyons, we quote the following description of the commencement of this eruption :

“ Had I the ability, I should like to give a description of the present volcanic eruption ; but I am fearful of a failure, should the attempt be made. When one has seen the real thing itself, there is no room for the play of the imagination of poetry. You may exhaust language of its most impressive and descriptive terms, and yet fail to reach the reality. I shall attempt no more than to give a few facts. On Sabbath, January 23rd, volcanic smoke was seen gathering on Mauna Loa. In the evening the mountain presented a grand, yet fearful spectacle. Two streams of fire were issuing from two different sources, and flowing, apparently, in two different directions. The whole region, earth and heaven, were lighted up, and even the interior of our houses received the lurid volcanic light direct from its source. In the morning of the second day, we could discern where the eruptions were. One appeared to be very near the top of the mountain, but its steam and smoke soon disappeared. The other was on the north side, further below the top, and was sending out its fires in a north-westerly direction. On the second and third nights, the dense smoke and clouds prevented us from having a fair view of Pele's doings ; but on the four following nights we had a view—and such a scene ! It seemed as though the eye could never weary in gazing at it. The burning crater seemed to be constantly enlarging and throwing up its volumes of liquid fire above the mouth of the crater—I will not venture to say how high—and the fiery stream rolled onward and onward, still adding grandeur and terror as it proceeded, till on the morning of the 31st, about sunrise, the stream was compelled, though reluctantly, to stop, by meeting the waters of the ocean. Even then its resistless and opposing energy carried it on some distance into the sea.”

From our account as published in the number of the *paper* we quote a further description of the same :

“ Our camping ground is located on the elevated table land lying between the three great mountains of Hualalai, Mauna Kea and Mauna

Loa, sixteen miles from Kailua, and some ten miles in an air line from the crater, which lies over against us on the side of Mauna Loa, distinctly in view. This plain is some five thousand feet above the level level of the sea, and is covered with small shrubs and trees, growing from ten to twenty feet high. In some places it is level, and covered with a coarse, black sand, similar to that found on the sides of the Punch Bowl, only much coarser, while the shrubs are so sparse as to allow a horse to travel across it on a full gallop. In others it consists of a dense jungle with numerous pits or caves concealed by overgrowing shrubs. This part of the plain is almost impenetrable. In still other localities it is covered with coarse lava stones or "clinkers," over which travelling is next to impossible. The nights are extremely cold, frost covering the ground every morning. The days, are however, warm and pleasant, and the air, both night and day, is cool and invigorating.

During the day-time the light of the crater and the lava streams is hardly perceptible. The night is the time for observation. Soon after the sun had set, the molten streams began to show their courses, while the spouting of the lava from the crater became more and more distinct. The reflection of the numerous fiery streams rolling rapidly down the side of the mountain and across the plain lit up the overhanging clouds, making it as bright as moonlight for many miles around. As night advanced, and every little stream became more and distinct, the scene was grand.

This new crater, is located on the northern slope of Mauna Loa, at an elevation of, say eight thousand five hundred feet above the sea. It is some ten or more miles westward and about four thousand feet lower down than the last eruption of 1855, known as that of Mokuaweo. The course of the stream, from its source to the sea, we judge to be nearly N.W. by N. The crater bears due east from Kailua by the compass, and is about twenty-four miles from that harbour in a straight line. Its latitude, as near as we are able to determine without instruments, is $19^{\circ} 37'$; longitude $155^{\circ} 49'$. By referring to a map or chart, its position on the island can readily be noted. Our figures are only estimates, and accurate observations may prove that we are in error in some of them.

The actual size and form of the crater can only be determined by visiting its immediate vicinity, which we were not prepared to do. From the distance at which we observed it, about ten miles, and from various points of observation, it *appeared* to be circular, its width being about equal to its breadth, and perhaps two hundred and fifty feet across the mouth. This may be too moderate an estimate, and it may prove to be three hundred or four hundred feet across it. The rim of the crater is surrounded or made up of cones constantly varying in extent, now growing in size and again all tumbling down. The lava does not simply run out from the side of the crater like water from the side of a bowl, but is thrown up in continuous columns, very much like Geyser springs, as represented in school geographies.

At times this spouting appeared to be feeble, rising but little above

the rim of the crater, but generally, as if eager to escape from the pent-up howels of the earth, it rose to a height nearly equal to the base of the crater. But the columns and masses of lava thrown were ever varying in form and height. Sometimes, when very active, a spire or cone of lava would shoot up like a rocket or in the form of a huge pyramid to a height nearly double the base of the crater. The mouth of the crater being about two hundred and fifty feet across, the perpendicular column must be five hundred feet in height! Then, by watching it with a spy-glass, the columns could be seen to diverge and fall in all manner of shapes, like a beautiful fountain."

This part of the scene was one of true grandeur—no words can convey a full idea of it to our readers. The molten fiery-redness, ever varying, ever changing its form, from the simple gurgling of a spring to the hugest fountain conceivable, is a scene that, only when viewed in its surpassing grandeur, will remain painted on the memory till death. Large boulders of red-hot lava stone, weighing hundreds, if not thousands, of tons, thrown up with inconceivable power high above the liquid mass, could be occasionally seen falling outside or on the rim of the crater, tumbling the cones down and rolling over the precipice, remaining brilliant for a few moments, then becoming cold and black, were lost among the mass of surrounding lava. So awfully grand, so beautiful was this ever varying scene, that the observer cannot help watching it with intense delight and increasing excitement for hours together; the only drawback being the severe cold of the night, against which travellers should be provided.

A dense heavy column of smoke continually rose out from the crater, but always on the north side, and took a north-easterly direction, rising in one continuous column far above the mountain, to a height of perhaps ten thousand feet above the crater. This smoke hovers over that island, and indeed all the islands, and must at times, when the trade wind lulls, obstruct the view. During our stay, however, it passed off from the mountain leaving the lower atmosphere quite clear. We watched closely to observe whether any *steam* could be seen issuing, either from the crater or from any of the streams of lava, but could not see anything that could be called steam or vapour, unless occasionally very slight indications along some of the lava streams. Considerable smoke rose along the stream, as the molten lava came in contact with trees and vegetable masses, but the mass of smoke came from the crater itself. Steam was noticed in various places on the plain, issuing from the rocks, and near one of the camps the heat was so intense that a tea kettle could be boiled over it. But this steam was undoubtedly caused by the heat of the flowing lava which was about a mile distant, coming in contact with pools of water in caves or pits.

On leaving the crater, the lava stream does not appear for some distance, say an eighth of a mile, as it has to cut its way through a deep ravine or gulph, eighty or one hundred feet deep, which hides it from the eye. The first then that we see of the lava after being thrown up in the crater is its branching out in streams some distance below the

fountain head. Instead of running in one large stream, it divides into a great number—perhaps as many as fifty—spreading out over a tract of five or six miles in width. For the first six miles from the crater, the descent is very rapid, and the flow of the lava varies from four to five miles an hour. But after it reaches the plain, where it is level, it moves slower. Here the streams are not so numerous as higher up, there being a principal one which varies and is very tortuous—from an eighth to a quarter of a mile in width, with frequent branches running off from it.

Some of the finest scenes of the flow were the cascades or falls formed in the stream as it flowed down the steep declivities below the crater, and before it reached the plain. There were several of them, and they appeared to be changing and new ones formed in different localities as new streams were made. One, however, which appeared without change for two days, was eighty to one hundred feet in height. First there was a fall, then below were cascades or rapids. To watch this fall during the night when the bright cherry-red stream of lava was tumbling over it at the rate of ten miles an hour, like water, was a scene not often witnessed, and never to be forgotten. In fact, the lava near its source had all the characteristics of a river of water flowing rapidly along, and gurgling with cascades, rapids, currents and falls.

On reaching the plain, where it is more level, the lava stream of course moves along more slowly and in one general stream less divided than above. The stream which had run into the sea, had apparently ceased flowing and was cooled over, so that we crossed and re-crossed it in many places, and through the fissures we could see the molten lava with its red-hot glow, an intense heat issuing out from them. In many places the surface was so hot that the soles of our shoes would have been burned had we not kept in rapid motion. The length of the lava stream from the crater to where it enters the sea at Wainanalii, is estimated to be forty miles.

On the afternoon of our arrival at the camping ground, a new stream started some few miles below the crater, which had evidently been dammed up by some obstruction, and came rushing down with tremendous noise and fury through the thick jungle which lay in its track, burning the cracking trees, and sending up a thick smoke almost as dense as that from the crater. This stream, from the time it broke away from the embankment, moved along two miles an hour till it reached the vicinity of our camp, when its progress was checked, and it moved not more than a quarter of a mile an hour. But it formed a magnificent sight. Here was a stream of lava rolling over the plain, twenty to twenty-five feet in height, and an eighth of a mile in width, though its width varied a great deal, sometimes broader, sometimes narrower. It was in fact, a mass or pile of red-hot stones, resembling a pile of coals of fire, borne along by the more liquid lava underneath. As it moved slowly along, large red boulders would roll down the sides, breaking into a thousand small stones, crushing and burning the trees, melting the rocks, and destroying everything which lay in the

track. It is impossible to give a true impression of the immense force and power of this lava stream, bearing along as it does an almost inconceivable mass. It reminds us most vividly of the breaking up of the ice in a large river, only the imagination must stretch the comparison and suppose the ice piled up twenty-five feet, and thus borne along by the current beneath, the whole width of the river moving at the same time, crashing and breaking and piling up cones and irregular masses on top. But even this comparison is far below the reality—to be conceived it must be seen.

After running a distance of about forty miles from its source, the lava stream entered the sea at a small fishing village called Wainanalii, about fifteen miles south of the port of Kawaihae, on the morning of January 31st. The eruption having commenced on the 23rd of January, it was consequently eight days in running over that distance. Of this the Rev. Mr. Lyons writes :

“The poor inhabitants of Wainanalii, the name of the village where the fire reached the ocean, were aroused at the midnight hour by the hissing and roaring of the approaching fire, and had but just time to save themselves. Some of the houses of the inland portion of the village were partly surrounded before the inmates were aware of their danger. Wainanalii is near the northern boundary of North Kona, and about twelve or fourteen miles from Kawaihae. It is, of course, all destroyed, and its pleasant little harbour all filled up with lava. The volcanic stream was one mile wide or more in some places, and much less in others. It crossed the Kona road interrupting the mail communication. The whole distance of the flow from the crater to the sea is some forty miles.”

The schooner *Kekauluohi* was passing this village at the time the stream reached the sea, and several foreigners on board have described the scene as one of terrific grandeur. Perhaps we cannot give a better account of it than to insert here the description given of the meeting of the lava stream with the sea in the eruption of 1840 :

“When the torrent of fire precipitated itself into the ocean, the scene assumed a character of terrific and indescribable grandeur. The magnificence of destruction was never more perceptibly displayed than when these antagonistic elements met in deadly strife. The mightiest of earth’s magazines of fire poured forth its burning billows to meet the mightiest of oceans. For two-score miles it came rolling, tumbling, swelling forward, an awful agent of death. Rocks melted like wax in its path ; forests crackled and blazed before its fervent heat ; the very hills were lifted from their primeval beds, and sank beneath its tide, or were borne onward by its waves ; the works of man were to it but as a scroll in the flames ; Nature shrivelled and trembled before the irresistible flow. Imagine Niagara’s stream, above the brink of the falls, with its dashing, whirling, madly raging and hurrying on their plunge, instantaneously converted into fire, a gory-hued river of fused minerals ; the wrecks of creative matter blazing and disappearing beneath its surface ; volumes of hissing steam arising ; smoke curling upwards from ten thousand vents, which give

utterance to as many deep-toned mutterings, and sullen, confined, and ominous clamourings, as if the spirits of fallen demons were struggling against their final doom; gases detonating and shrieking as they burst from their hot prison-house; the heavens lurid with flame; the atmosphere dark, turgid and oppressive; the horizon murky with vapours, and gleaming with the reflected contest; while cave and hollow, as the hot air swept along their heated walls, threw back the unearthly sounds, in a myriad of prolonged echoes. Such was the scene as the fiery cataract, leaping a precipice of fifty feet, poured its flood upon the ocean. The old line of coast, a mass of compact, indurated lava, whitened, cracked, and fell. The waters recoiled, and sent forth a tempest of spray; they foamed and lashed around and over the melted rock; they boiled with the heat, and the roar of the conflicting agencies grew fiercer and louder. The reports of the exploding gases were distinctly heard twenty-five miles distant. They were likened to discharges of whole broadsides of heavy artillery. Streaks of the intensest light glanced like lightning in all directions; the outskirts of the burning lava as it fell, cooled by the shock, was shivered into millions of fragments, and, borne aloft by strong breezes blowing towards the land, were scattered in scintillant showers far into the country. For three successive weeks, the volcano disgorged an uninterrupted burning tide, with scarcely any diminution into the ocean. On either side, for twenty miles, the sea became heated, and with such rapidity, that on the second day of the junction fishes came ashore dead in great numbers at Keaau, fifteen miles distant. Six weeks later, at the base of the hills, the water continued scalding hot, and sent forth steam at every wash of the waves.

PROF. ALEXANDER'S ACCOUNT.

At a time when all information relating to the eruption is eagerly received, a brief sketch of what the company to which I belonged, saw and did, may be interesting to your readers, particularly as we reached the source by a route different from that taken by any other party, excepting perhaps Mr. Vaudry. Our party sailed from Honolulu in the *Kinoole*, on Tuesday, February 1st, and landed at Kealakekua Thursday noon. During the preceding night we had a distant view of the eruption, like a star, two-thirds up the mountain, with streaks of light branching out from below. Friday was spent in preparations for the jaunt, and on Saturday morning we set out for the crater, from Kuapehu, in a direction nearly east. * * *

As we began to emerge from the woods we had a fine view of the jet, playing at a distance of perhaps twenty-five miles, to the height, as we afterwards estimated, of three hundred feet. It was of a deep red colour, in form and movement exactly like a fountain, and was accompanied by immense columns of steam. It was soon concealed from our view, however, by the flanks of Mauna Loa. About twelve miles from the coast road we reached a watering place called Waiio, which we found nearly dry.

Here we were obliged to send back our horses and pack oxen and proceed on foot. Our guides then led us in a direction about E.S.E. across a rugged tract of clinkers to a cave, eight miles from Waïio, where we encamped for the night. This cave had formed part of the channel of a subterranean stream, which left a series of deep caverns, fissures and pits to mark its course. * * *

During the afternoon, the party, being in want of water, pushed on six or eight miles S.S.E. to a well known watering place called Puapuawai, where they encamped. At this point the cold was so intense at night, that a crust of ice half an inch thick was formed in our calabashes, and the berries around our camp were frozen hard. As far as we could judge by the horizon, we were about a thousand feet lower than the summit of Hualalai, and accordingly, eight thousand feet above the sea. On account of the failure of this spring, as well as for other reasons, it was thought expedient to divide the party. Half of them, headed by President Beckwith, returned to Kaawaloa, and went out to the lava flow by Governor Adams' road.

The advanced party started again directly for the crater on Wednesday morning, consisting of twelve white men and thirty kanakas, with a week's provisions. During this day's march the rarity of the atmosphere affected us all more or less, but especially our natives, who seemed unable to carry their usual loads. We were slowly ascending nearly all day. The vegetation became more and more scanty, till it almost entirely disappeared.

About noon we crossed a recent flow, perhaps that of 1847, and at four p.m. (February 9th), after a march of about twenty miles N.E., we suddenly found the two active craters, and the lava stream in its whole extent, immediately below us. We encamped a mile and a half S.W. of the larger cone, on an eminence commanding a fine view of the whole eruption. Large banks of snow and ice were found within a quarter of a mile from our camp, so that all anxiety on the score of water was soon dissipated.

The sight which we enjoyed that night will not be forgotten by any of the party. The jet had ceased to play, but the two craters were blowing off enormous columns of steam, and showers of red-hot scoria, with a noise like that of heavy surf, or occasionally like discharges of artillery. Half a mile below the lower crater appeared a cataract of fire, continued for several miles in a winding river of light, which then divided into a net work of branches, enclosing numerous islands. The branch towards Kawaihae still gave a dull red light in a few spots, but the force of the stream seemed to be directed west towards Kona.

Two new streams seemed to be running a race, as it were, in that direction, and we could see the forest blazing before them. The next day (10th) was rainy, and the fog so dense that we could not travel. We moved down a couple of miles, and encamped on the fresh lava stream, half a mile south of the principal cone. By the heat of the steam cracks we boiled our coffee, roasted meat and potatoes, and melted the snow, which our natives had brought down in sacks, till we

filled all our water containers. During the day parties explored the craters.

The two principal cones are about a quarter of a mile apart, the upper one bearing S.E. from the other. They are about 150 feet high, and are composed entirely of pumice and small fragments of lava which were thrown out in a liquid state. The upper cone was a closed crater, enclosing two red-hot vent holes or furnaces, several feet in diameter, from which it was emitting steam and sulphurous gas, and now and then showers of light pumice. The suffocating gases rendered it impossible to approach it except on the windward side. The lower crater, from which the great get had been playing two days before, was somewhat larger, and a great gap was left open on the lower side, through which a torrent of lava had flown down the slope.

We found a third crater, above the two we have mentioned, which was still smoking, and in fact we could trace a line of fresh lava and scoria cones two or three miles farther up the mountain. The larger cones were in the center of a still smoking stream, a mile wide, which must have flown from a source considerably higher up.

It was a subject of regret to the party that they did not have a barometer to measure the elevation of the source, but, taking all things into account, we think it cannot be less than 8000 feet, and is probably nearer 10,000 feet above the sea. The elevation of the "heiau of Umi" is given by Wilkes at 5000 feet, and we think the source of the eruptions is certainly 3000 or 4000 feet higher.

We slept on the warm lava that night, and early next morning revisited the lower crater, and followed the central flow for half a mile, passing two or three small cones, till we reached the present outlet, to which the stream evidently had found its way from the crater by a subterranean channel. It was in appearance like a pool of blood, a few rods in width, boiling up like a spring, and spouting up thick, clotted masses to the height of ten or twenty feet. One of our party approached near enough to run his pole into it. On the other side it poured in a cataract of molten metal at a white heat, down a descent of about fifty feet, with a roar like that of heavy surf. A strong south wind was blowing, which enabled us, by holding our hats before our faces, to get within a few feet of the brink. The lava appeared almost as fluid as water, and ran with a velocity which the eye could scarcely follow. The solid fragments which now and then fell in torrents disappeared almost instantly. For several miles the fiery river was a continuous series of rapids and cataracts. At length we reluctantly returned to our camp, a distance of two or three miles across the fresh lava, which in several places was hot enough to burn our sandals.

After taking our breakfast, and starting our natives over the old "pahoehoe" along the south bank of the stream, we returned to the great cataract. The action had greatly increased during the last three hours; the pool had become a fountain, playing to the height of thirty feet, and the falling pieces were fast forming a crater around it, the rim of which was already ten feet high, but open on the lower side to

form an outlet to the torrent. Two smaller jets were playing above it, which will probably unite with it to form one crater. The upper one threw up light pieces of pumice to the height of sixty feet, and was forming a very regular cone.

It was fortunately a clear day on the mountain, and a strong wind was blowing from the southwest, so that we travelled for three or four hours along the very brink of the stream, without inconvenience. It had worn for itself a deep, well-defined channel, so that there was no danger of any sudden change in its course. The channel in which it ran varied from twenty to fifty feet in width, and was ten to fifteen feet deep. But the stream was in reality much wider than this, for the banks on either side were undermined to a considerable distance. Often we met with openings in the crust, through which we could see the rushing torrents a few feet or even inches below our feet.

To describe the scene is impossible. No epithets in the English language are adequate to the task. For the first time we saw actual *waves* and actual *spray* of liquid lava. As its surges rolled back from the enclosing walls of rock, they curled over and broke like combers on the reef. Its forms, however, were bolder and more picturesque than those of running water, on account of its being a heavier and more tenacious fluid.

There was besides, an endless variety in its forms. Now we passed a cascade, then a whirlpool, then a smooth, majestic river, then a series of rapids, tossing their waves like sea; now rolling into lurid caverns, the roofs of which were hung with red-hot stalactites, and then under arches which it had thrown over itself in sportive triumph. The safety with which it could be approached was matter of astonishment to us all.

After following it six or eight miles, we halted for dinner on an island, about a quarter of a mile from the largest fall, and then proceeded down the stream till four p.m. As the descent became more gradual the torrent changed its colour, first to rose-colour, then to a dark blood-red; its surface began to gather a greyish scum, and large drifting masses became frequent. It now began to separate into numerous branches, and it became more unsafe to follow the central stream, as changes were constantly taking place, and our retreat was liable to be cut off at any moment. We therefore kept nearer the edge of the flow, and at length encamped on an island in the woods. During the night the craters were very active, and the whole plain seemed to be on fire below around us.

The party were called out by four o'clock the next morning, and went up a short distance to observe a new stream which was pouring down through the woods to our camp. It was a shallow flow in a high state of fusion, and was forming smooth "pahoehoe." Its mode of advance through the woods, girdling and slowly consuming the trees, the surface constantly cooling over and breaking up by turns, was exactly the same as that observed at Hilo, and needs no description. Here we were able to take out as many specimens in a liquid state as we wished, to insert coins into them, and if we had carried moulds with us, we might have forced the liquid into almost any

required shape. We spent the forenoon in following the stream to the plain, partly crossing it in some places to reach the scene of a new overflow. We had been particularly curious to see how clinkers are formed, and our curiosity was now gratified. The difference between "pahoehoe" or smooth lava, and "aa" or clinkers, seems to be due more to a difference in their mode of cooling than to any other cause. The streams which form the "pahoehoe" are comparatively shallow, in a state of complete fusion, and cool suddenly in a mass. The "aa" streams, on the other hand, are deep, sometimes moving along in a mass twenty feet high, with solid walls; they are less fluid, being full of solid points, or centres of cooling, as they may be called, and advance very slowly. That is, in cooling, the "aa" stream *grains* like sugar.

March 7th, 1859.

In the dearth of more exciting news, the volcano continues to be an object of interest, and a few lines of later date than those previously published may be acceptable to your readers.

I started on foot for the scene of the eruption on Wednesday, the 16th ultimo, from the house of Mr. W. Johnson, of Kona, accompanied by three natives in the capacity of guides and carriers. We arrived at the Heiau of Umi before dark, and passed the night in a cave, the entrance of which commanded a fine view of the fiery rivers that were rushing down the mountain side and spreading over the plain. In the morning we arose early, and after filling our water vessels at a neighbouring spring, directed our course towards the great column of smoke that rose like a beacon from the upper crater at a distance of from twenty to twenty-five miles. Our route lay for a short distance through thick woods and shrubbery. We then emerged on to the solid *pahoehoe*, which is on the lower part of the slope, adorned with ohia trees and richly laden ohelo bushes, and found excellent walking until we reached the immediate vicinity of the crater. We arrived at the upper crater on Friday noon, after an easy journey of two days and a half from the time of leaving Mr Johnson's. A good walker, unencumbered with baggage, might accomplish the distance in half the time.

The height of this crater, as nearly as I could estimate from the apparent elevation of the horizon above the summit of Mount Hualalai, is as much as nine thousand five hundred feet.

We chose for our camp the same site which had been previously occupied by Mr. Alexander's party, and were so fortunate as to find there a calabash full of water, cool and limpid, saving us an anticipated ascent to the snow for supplies; and we cooked our mutton and baked our kalo cakes in the same hot air holes that had proved so useful to them before. The air from some of the crevices was heated to so high a temperature that a piece of paper or a dry stick placed within it at the surface of the ground ignited immediately.

From the camp was visible at night, one of the most magnificent

spectacles that the imagination can conceive. The evening was clear and starlight, and afforded us a complete view of the flowing lava. A river of lava issuing from the lower, and smaller of the three craters there in action (probably the one in process of formation at the time of Mr. Alexander's visit) separated into two streams a short distance below, and these, after running side by side for several miles, re-united and descended the declivity in a common flood, throwing off towards the plain to the southward in their course fifteen or twenty smaller streams of lava, some of them miles in length, and all meandering hither and thither, and intersecting one with another, so that the whole slope of the mountain, for the distance of a day's journey, and a width in some places of three or four miles, presented the appearance of shining rose coloured lace work. In the foreground were the two larger active craters which, although they had ceased to spout forth lava and scoria, still threw up flames, and from which arose immense pillars of smoke and cloud, looking, in the red reflection from within, like columns of living fire, reaching to the zenith, and forming a majestic termination to the brilliant arch of fiery cloud which, floating above the lava stream, covered one-half the blue dome from the sea to the crater.

At a distance it looks like an immense mass of half red-hot cinders and slag from a foundry, rolling along over and over itself, impelled by an irresistible power from behind and beneath. That power is the liquid stream, almost concealed by the pile of cinders, which has been formed from itself in cooling. We heard frequent explosions, caused by the lava penetrating caves and blowing them up. The principal stream of running lava which we saw on the plain, was three or four miles S.E. of the extremity of the Judd Road, and was moving west by north. At this point we left the lava stream, and descended to Umi's temple by a short cut, through an open forest of "pahoehoe." We reached the heiau about three p.m., and arrived at Mr. Johnson's about eight o'clock the same evening. The other division of our party had already visited the flow by way of Governor Adams's road and had returned. We sailed again from Keauhou the following Tuesday, and arrived in Honolulu on Sunday morning.

Profiting by the favour of a strong sea-breeze, I succeeded in descending a short distance, perhaps twenty feet, into the upper active crater to a small projecting ledge, but a sudden whirl of the wind, threatening me with suffocation, obliged me to retreat again in double quick time. This crater had changed materially in appearance since the visit of the previous party. Instead of the comparatively small blow-hole, there was now a deep chasm or rift, some eighty feet in depth, and ten in width, between whose red-hot walls a great volume of steam ascended, allowing only an occasional glimpse at the region beneath. At intervals, however, when an obliging puff of wind thinned for an instant the vaporous mass, I could distinguish below a stream of incandescent lava rushing forth from the mountain side with almost incredible velocity. Before leaving the crater the chasm was again covered, and the river ran beneath the crust until it again

emerged at the other crater, a quarter of a mile below. We are unable to explore the interior of this crater. It seemed, however, to possess more action than the upper one. Upon leaving it, the stream once more passed under ground and finally emerged again for the last time at the lower and smaller crater.

During our visit at the lava flow, we were not so fortunate as to witness the formation of the "aa" or clinker beds, which is said to be the most interesting of all the lava formations. The force of the lava was distributed entirely among numerous shallow flows of "pahoehoe," extending slowly into the plain, cutting down trees and bushes, and spreading desolation everywhere in its path. One can imagine no more perfect embodiment of desolation than the old track of a lava flow. The slow march is accompanied, when the lava is flowing over a surface of old "pahoehoe," by constantly recurring reports caused by the blowing up of cavities sometimes at a distance of one hundred and fifty yards from the stream. Large rocks are sometimes thrown to a great height by these explosions, and the reports have been heard in the night as far as Mr. Johnson's house,—a distance of twenty-five or thirty miles.

The lava had approached to within an hour's walk of the heiau at the time of our leaving the scene of action. There had probably been little or no diminution in the quantity of molten matter poured forth from the mountain side, and there appeared to be every prospect of its continuing many months.

On the evenings of the 26th and 27th of February, being the last two nights before my departure from Kona, an unusually bright reflection was visible in the direction of the lava stream—affording ground for the belief that a new fountain had burst forth. The light was similar to that observed some weeks previously at the time of the great jets, which have been estimated variously at from two hundred and sixty to five hundred feet in height.

Parties going to the volcano should carry plenty of blankets, and go prepared for rainy weather. If they are good pedestrians they had better go on foot. The Governor Adams' road is in good condition, and though longer, is, unless in very dry weather, preferable to the Dr. Judd road. People who wish to see all that is to be seen, should pass at least a week among the mountains. If the party is small, comfortable shelter can be found in caves, and tents will be a useless incumbrance. In conclusion, I would express my grateful sense of the kind hospitality experienced at the hands of Mr. William Johnson and Mr. Thomas H. Paris, during my stay in Kona.

The following extract shews the state of the volcano in June last :
"The volcano is lively, and having fine times. No less than eleven fires are burning. In different places about the bank, where the road goes down, the lava has flowed up sixty feet and cooled over. Your feet will be so hot after crossing, that if you should spit on your toenails they would hiss, like hot iron ! But in the neighbourhood of the crater there are strawberries galore, large and luscious, besides ohelos."

THE MERCHANT SHIPPING ACT, 1867.

Be it enacted by the Queen's most excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same as follows :

1. This Act may be cited as The Merchant Shipping Act, 1867, and shall be construed with and as part of the Merchant Shipping Act, 1854, hereinafter termed the Principal Act.

COMMENCEMENT OF ACT.

2. This Act shall come into operation on the first day of January, 1868, but shall not apply to any ship which belongs to the United Kingdom and is absent therefrom at the time of the passing of this Act until such ship has returned to the United Kingdom.

ACTS REPEALED.

3. The 224th, 227th, and 231st sections of the principal Act are hereby repealed.

LIME OR LEMON JUICE AND OTHER ANTI-SCORBUTICS TO BE PROVIDED.

4. The following rules shall be observed with respect to medicines, medical stores, and anti-scorbutics (that is to say) :—

(1.) The Board of Trade shall from time to time issue and cause to be published scales of medicine and medical stores suitable for different ships and voyages, and shall also prepare or sanction a book or books containing instructions for dispensing the same.

(2.) The owners of every ship navigating between the United Kingdom any place out of the same shall provide and cause to be kept on board such ship a supply of medicines and medical stores in accordance with the scale appropriate to the said ship, and also a copy of the said book or of one of the said books containing instructions.

(3.) No lime or lemon juice shall be deemed fit and proper to be taken on board any such ship, for the use of the crew or passengers thereof, unless the same has been obtained from a bonded warehouse for and to be shipped as stores; and no lime or lemon juice shall be so obtained or delivered from any warehouse as aforesaid unless the same is shown, by a certificate under the hand of an Inspector appointed by the Board of Trade, to be proper for use on board ship, such certificate to be given upon inspection of a sample after deposit of the said lime or lemon juice in the warehouse; nor unless the same contains fifteen per centum of proper and palatable proof spirits, to be approved by such Inspector, or by the proper Officer of the Customs, and to be added before or immediately after the inspection thereof;

nor unless the same is packed in such bottles, at such time and in such manner as the Commissioners of Customs may direct; provided that when any such lime or lemon juice is deposited in any bonded warehouse, and has been approved as aforesaid by the said Inspector, the said spirits, or so much of the said spirits as is necessary to make up fifteen per centum may be added in such warehouse; and when any spirit has been added to any lime or lemon juice, and the same has been labelled as aforesaid, it shall be deposited in the warehouse for delivery as ship's stores only, upon such terms and subject to such regulations of the Commissioners of Customs as are applicable to the delivery of ship's stores from the warehouse.

(4.) The master or owner of every such foreign-going ship (except those bound to European ports or to ports in the Mediterranean Sea, and also except such ships or classes of ships bound to ports on the Eastern coast of America north of the thirty-fifth degree of north latitude, and to any islands or places in the Atlantic Ocean north of the same limit, as the Board of Trade may from time to time exempt from this enactment) shall provide and cause to be kept on board such ship a sufficient quantity of lime or lemon juice from the warehouse duly labelled as aforesaid, such labels to remain intact until twenty-four hours at least after such ship shall have left her port of departure on her foreign voyage, or a sufficient quantity of such other anti-scorbutics, if any, of such quality, and composed of such materials, and packed and kept in such manner, as her Majesty by Order in Council may from time to time direct.

(5.) The master of every such ship as last aforesaid shall serve or cause to be served out the lime or lemon juice with sugar (such sugar to be in addition to any sugar required by the articles) or other anti-scorbutics as aforesaid to the crew so soon as they have been at sea for ten days, and during the remainder of the voyage, except during such time as they are in harbour and are there supplied with fresh provisions; the lime or lemon juice and sugar to be served out daily at the rate of an ounce each per day to each member of the crew, and to be mixed with a due proportion of water before being served out, or the other anti-scorbutics, if any, at such times and in such quantities as her Majesty by Order in Council may from time to time direct.

(6.) If at any time when such lime or lemon juice or anti-scorbutics is or are so served out as aforesaid any seaman or apprentice refuses or neglects to take the same, such neglect or refusal shall be entered in the official log-book in the manner provided by the 281st section of the principal Act, and shall be signed by the master and by the mate or some other of the crew, and also by the surgeon or medical practitioner on board, if any:

And if in any such ship as aforesaid such medicines, medical stores, book of instructions, lime or lemon juice, sugar, or anti-scorbutics as are hereinbefore required are not provided, packed, and kept on board as hereinbefore required, the owner or master shall be deemed to be in fault, and shall for each default incur a penalty not exceeding £20, unless he can prove that the non-compliance with the above provisions,

or any of them, was not caused through any inattention, neglect, or wilful default on his part; and if the lime or lemon juice and sugar or other anti-scorbutics are not served out in the case and manner hereinbefore directed, or if entry is not made in the official log in the case and manner hereinbefore required, the master shall be deemed to be in fault, and shall for each default incur a penalty not exceeding £5, unless he can prove that the non-compliance with the above provisions, or any of them, did not arise through any neglect, omission, or wilful default on his part; and if in any case it is proved that some person other than the master or owner is in default in any case under this section, then such other person shall be liable to a penalty not exceeding £20.

PENALTY FOR SELLING, ETC., MEDICINES, ETC., OF BAD QUALITY.

5. Any person who manufactures, sells, or keeps or offers for sale any such medicines or medical stores, as aforesaid, which are of bad quality, shall, for each such offence, incur a penalty not exceeding £20.

INSPECTION ABROAD.

6. In any British possession out of the United Kingdom, the governor or officer administering the government for the time being shall, subject to the laws of such possession, have power to make regulations concerning the supply within such possession, of lime or lemon juice and anti-scorbutics for the use of ships; and any lime or lemon juice or anti-scorbutics duly supplied in accordance with any such regulations shall be deemed to be fit and proper for the use of ships.

SEAMEN'S EXPENSES IN ILLNESS.

7. Whenever it is shown that any seaman or apprentice who is ill has, through the neglect of the master or owner, not been provided with proper food and water according to his agreement, or with such accommodation, medicines, medical stores, or anti-scorbutics as are required by the principal Act or by this Act, then, unless it can be shown that the illness has been produced by other causes, the owner or master shall be liable to pay all expenses properly and necessarily incurred by reason of such illness (not exceeding in the whole three months' wages), either by such seaman himself, or by Her Majesty's Government, or any officer of Her Majesty's Government or by any parochial or other local authority on his behalf, and such expenses may be recovered in the same way as if they were wages duly earned; provided, that this enactment shall not operate so as to affect any further liability of any such owner or master for such neglect, or any remedy which any seaman already possesses.

FORFEITURE OF WAGES, ETC.

8. Where a seaman is, by reason of illness, incapable of performing his duty, and it is proved that such illness has been caused by his own wilful act or default, he shall not be entitled to wages for the time during which he is by reason of such illness incapable of performing his duty.

PLACE APPROPRIATED TO SEAMEN.

9. The following rules shall be observed with respect to accommodation on board British ships (that is to say) :—

(1.) Every place in any ship occupied by seamen or apprentices, and appropriated to their use, shall have for every such seaman or apprentice a space of not less than seventy-two cubic feet, and of not less than twelve superficial feet, measured on the deck or floor of such place.

(2.) Every such place shall be such as to make the space aforesaid available for the proper accommodation of the men who are to occupy it, shall be securely constructed, properly lighted and ventilated, properly protected from weather and sea, and as far as practicable properly shut off and protected from effluvia which may be caused by cargo or bilge water.

(3.) No such place as aforesaid shall be deemed to be such as to authorise a deduction from registered tonnage, under the provisions hereinafter contained, unless there is or are in the ship one or more properly constructed privy or privies for the use of the crew; such privy or privies to be of such number and of such construction as may be approved by the surveyor hereinafter mentioned.

(4.) Every such place shall, whenever the ship is registered or re-registered, be inspected by one of the surveyors appointed by the Board of Trade under Part IV. of the principal Act, who shall, if satisfied that the same is in all respects such as is required by this Act, give to the collector of customs a certificate to that effect, and thereupon such space shall be deducted from the register tonnage.

(5.) No such deduction from tonnage as aforesaid shall be authorised unless there is permanently cut in a beam and out in or painted on or over the doorway or hatchway of every such place the number of men which it is constructed to accommodate, with the words "certified to accommodate seamen."

(6.) Every such place shall be kept free from stores or goods of any kind, not being the personal property of the crew in use during the voyage.

(7.) Upon any complaint concerning any such place as aforesaid, one of the surveyors appointed by the Board of Trade may inspect such place, and if he finds that any provisions of this Act with respect to the same are not complied with he shall report the same to the collector of customs at the port where the ship is registered, and thereupon the registered tonnage shall be altered, and the deductions

aforsaid in respect of space disallowed, unless and until it shall be certified by such surveyor, or by some other surveyor appointed by the Board of Trade, that the provisions of the Act in respect of such place are fully complied with.

(8.) If any such place in any ship is not kept free from goods and stores as aforesaid, the Master shall be deemed to be in fault, and shall for every such failure to comply with the provisions of this section forfeit and pay to each seaman lodged in such place the sum of one shilling a day for each day after complaint made to him by any two or more of such seamen during which any goods or stores, not being the personal property of the crew, are stored or kept therein.

(9.) If in any other respect the provisions of this section are not observed with respect to any such place in any ship the owner shall be deemed to be in fault, and shall for every failure to comply with the provisions of this section incur a penalty not exceeding twenty pounds.

RULES FOR MEDICAL INSPECTION OF SEAMEN.

10. The following rules shall be observed with respect to the medical inspection of seamen (that is to say):—

(1.) At any port where there is a Local Marine Board, the Local Marine Board, and at any other ports in the United Kingdom, the Board of Trade, may appoint a Medical Inspector of seamen.

(2.) Such Medical Inspector of seamen shall, on application by the owner or master of any ship, examine any seaman applying for employment in such ship, and shall give to the superintendent of the Mercantile office a report under his hand stating whether such seaman is in a fit state for duty at sea, and a copy of such report shall be given to the master or owner of the ship.

(3.) The master or owner applying for such inspection shall pay the superintendent such fees as the Board of Trade direct, and such fees shall be paid into and form part of the Mercantile Marine Fund.

(4.) The said Medical Inspectors shall be remunerated for their services as the Board of Trade may direct, and such remuneration shall be paid out of the Mercantile Marine Fund.

(5.) In British possessions out of the United Kingdom the Governor or other officer administering the government for the time being shall have the power of appointing Medical Inspectors of seamen, of charging fees for inspections, when applied for, and of determining the remuneration to be paid to such Inspectors.

OFFENCES BY BRITISH SUBJECTS ON FOREIGN SHIPS.

11. If any British subject commits any crime or offence on board any British ship, or on board any foreign ship to which he does not belong, any court of justice in her Majesty's dominions, which would have had cognisance of such crime or offence if committed on board a British ship within the limits of its ordinary jurisdiction, shall have jurisdiction, to hear and determine the case as if the said crime or offence had been committed as last aforesaid.

HOLYHEAD HARBOUR-MASTER MAY BE COMMISSIONED AS JUSTICE.

12. The harbour-master for the time being of the harbour of Holyhead, in the event of its seeming meet to her Majesty to assign to him her Majesty's Commission to act as a justice of the Peace within the limits within which he is empowered to act in harbour matters, shall, during the continuance of such assignment and of his tenure of the office of harbour-master, execute within such limits the duties of a justice of the peace, notwithstanding he may not be qualified by estate to be a justice of the peace for a county, and shall have within such limits the same power and jurisdiction as a stipendiary magistrate has by Act of Parliament when sitting at a police court or other place appointed in that behalf.

SUMNER'S METHOD—*improved on.*

We have received the following very useful problem from the Naval Instructor of H.M.S. *Britannia* at Dartmouth.—The great importance of it will be at once evident to the experienced navigator.

The valuable Rule known as "Sumner's Method" is in favour with Navigators on account of its extreme simplicity. The following, which is founded on similar principles, is worthy of notice on account of its conciseness, being only about half the length of an ordinary "Sumner's."

Problem :—To lay down two positions on a chart, and by bearings of a ship from them to ascertain its latitude and longitude.

Rule :—Take two chronometer observations, at any time from noon, provided that the sun is not nearer the meridian at either observation than about two points, and that the intervals between the bearings is not less than about the same. Correct the second altitude for sun in usual way, and work both chronometers with the latitude by dead reckoning at the second observation; then if the two observations agree, they give the true longitude, and show the latitude used to be correct; but if they do not agree, lay off each position on a chart, and draw through it a line showing the sun's bearing at the time of observation, and another at right angles to the same; the point of intersection of the two latter will be the position of the ship. The bearings may be taken from Broadwood's Azimuth Tables, or from that at page 10, Inman's Tables (New Ed.), or, under favourable circumstances, they may be found with sufficient accuracy by correcting the sun's bearing by Azimuth compass for Variation and Deviation in the usual way.

ROYAL NATIONAL LIFEBOAT INSTITUTION.

At the meeting on the 1st of August, a reward of £13 4s. was voted to pay the expenses of the institution's lifeboat at Exmouth, in putting off on the 13th of July, in a strong gale of wind, with a view of rendering assistance to the crew of the brig *Ranger*, of Newcastle, which was totally wrecked off Budleigh Salterton. The lifeboat in crossing the bar, where a heavy sea was breaking, was repeatedly filled with water, and had four of her oars broken. She, however, behaved very well under these circumstances; but while the boat was on her way to the wrecked vessel, the crew were rescued by means of the rocket apparatus, and the lifeboat was thereupon signalled to return to her station.

Rewards amounting to £34 were also granted to the crews of the society's lifeboats at Fraserburgh, Arklow, Cromer, and Teignmouth, for various services during recent heavy gales. A reward was likewise voted to Mr. Curran, for swimming off at the risk of his life, in a heavy surf, and assisting to bring ashore the crew of nine men of a shore-boat which had capsized off Meenacladdy, Ireland, on the 25th June. A reward of £9 10s. was likewise voted to the crew of a Pakefield yawl, for rescuing on the 16th July, in a strong wind and heavy sea, the crew of six men of the French lugger *Edouard et Rose*, which had sunk on the Newcombe Sand, Suffolk. Other rewards were also granted for saving life from different wrecks on our coasts. It was reported that the institution had recently forwarded new lifeboats to Llandudno (Wales) and Sheringham (Norfolk).

The railway companies had, as usual, kindly given a free conveyance to the boats. It was also stated that the late Jacob Nathan, Esq., of Plymouth, had bequeathed £50 to the institution. Legacies had also been received from the executors of the late Miss Caroline N. Oxenham, of Kensington (less duty), £180, and the late Mr. Edwin Bagshaw, of Nottingham, £25. Titus Salt, Esq., of Bradford, had presented to the institution £620 to pay for an additional lifeboat station. £300 had also been received from *Routledge's Magazine for Boys' Lifeboat Fund*, to defray the cost of the surf lifeboat now being built for Caister, Norfolk, the amount of which had been principally raised through the zealous exertions of Edmund Routledge, Esq., the editor of this very instructive periodical. £8 16s. 6d. had also been contributed to the institution by the officers and passengers on board the Cape mail steamers, *Roman* and *Anglian*, on their last passages from the Cape of Good of Hope, through the respective commanders, Captain Walter Dixon and Lieutenant R. W. Ker, R.N.R. Payments amounting to £1,486 were ordered to be made on various lifeboat establishments. New lifeboat houses were ordered to be built at Kessingland in Suffolk, Cadgwith in Cornwall, and Bembridge in the Isle of Wight. Reports were read from the Inspector and Assistant Inspector of Lifeboats to the society on their recent visits to some of the lifeboat stations on the coast. The proceedings then terminated.

NOTES OF NOVELTIES.

AMONG the novelties of the present month the most important are in the way of Docks abroad : Malta and Hong Kong, two important places, have had these valuable additions made to their attractions ; the benefits of which hereafter will be very considerable in many points of view. Of that at Malta the *Hants Telegraph* thus speaks :—An interesting event took place here on Thursday, the 1st of August. On that day was laid the first stone of the New Royal Naval Dock in the French Creek, by Rear-Admiral Kellett, in the presence of the principal officers of the dockyard and a few private friends. The grand ceremony of laying the “key-stone,” will, it is hoped, come off about October, when the works will be far enough advanced to admit of the public being present, without fear of a flooding of the works, a contingency which is at present not at all improbable. Thanks, however, to the arrangements made by the Admiralty Civil Engineer, Mr. Lovell, everything worked admirably, and the stone was set at a depth below sea-level of forty-one feet, without any disappointment on the part of the authorities or the slightest inconvenience to the guests. As this dock will be the largest single graving dock in the world, some particulars of its dimensions, and those of other existing docks for the sake of comparison, may be interesting :—Length of floor, 430 ft. ; length at coping, 468 ft. ; width at floor, 42 ft. 6 in. ; width at broad altar, 84 ft. ; width at coping, 104 ft. ; depth of water on cill, 33 ft. 6 in. ; depth from coping to floor, 39 ft. The dimensions of the first dock constructed at Malta by Mr. Scamp are as follows :—Length, 283 ft. ; width at floor, 26 ft. 9 in. ; width at coping, 82 ft. ; depth of water on cill, 25 ft. ; depth from coping to floor, 29 ft. 6 in. This dock was afterwards lengthened to 535 ft., and by means of a caisson, made capable of docking two ships ; in fact, converting it into two docks, or one large one, according to the requirements of the service.

It will be observed that while the old Malta dock has only 25 ft. of water over cill, the new one will have 33 ft. 6 in. The following are the dimensions of some of the principal docks at home :—“At Portsmouth.—Length of floor, 400 ft. ; length at coping, 426 ft. ; width at floor, 35 ft. ; ditto at broad altar, 75 ft. 6 in. ; ditto at coping, 99 ft. ; depth from coping to floor, 33 ft. 10 in. ; depth of water over cill, 28 ft. 6 in. At Birkenhead,—Length, 440 ft. ; width, 70 ft. 9 in. ; depth of water of cill, 26 ft. At Leith,—Length, 400 ft. ; width, 8 ft., depth of water over cill, 24 ft. 6 in. In Thames, Bow Creek.—Length, 400 ft. ; width, 64 ft. ; depth of water over cill, 24 ft. 6 in. The number of workmen employed daily by the department in the construction of the new dock at Malta, including those of contractors, is 500 besides those engaged at the quays. The work done in pumping is as follow :—6,048 gallons, equal to 27 tons, are lifted 45 feet every minute, which are equal to 8,709,120 gallons, or 38,880 tons, lifted 45 feet in the 24 hours. The engines are collectively of 85-horse power. The fresh water consumed has all to be distilled, and the quantity used is seventy tons a day.”

The other at Hong Kong is thus alluded to :—" On the 15th of June, the new dock at Aberdeen (on the southern side of the Island of Hong Kong), belonging to the Hong Kong, Canton, and Whampoa Dock Company, was opened in the presence of the governor and a large party of invited guests. This dock is over 400 feet long, 99 ft. broad, and $34\frac{1}{2}$ deep. It has been cut out of the solid granite of which the island is formed, and is a very magnificent work. It is lined with hewn granite, and presents a very imposing appearance. The *Overland China Mail* looks upon the opening of this dock as an event of considerable importance. It says :—" The Hope Dock is undoubtedly the finest dock in the East, and whatever credit is due to the company and to all concerned with the organization and construction of such a masterpiece of marine architecture is freely accorded to the promoters of the scheme so successfully inaugurated on Saturday last. To convey a better idea of the advantages consequent upon the completion of such an undertaking, we may give some of the dimensions and peculiar features of the new dock. It is 410 feet in length over all, and 385 feet on the blocks ; it has a breadth from coping stone to coping stone of 100 feet, and 50 feet at the bottom ; its width at the entrance is 84 feet ; and its depth of water is 24 feet 6 inches at spring, and 22 feet at neap tides. It will thus be seen that it will be able to take in the largest merchant vessel or mail steamer which enters Hong Kong harbour, even at low water. The dock is, of course, constructed with the intention of accommodating either the ironclad *Warrior* or *Black Prince* (for draught of water), or for the Pacific Mail Company's steamer the *Great Republic* (for breadth of beam) ; and we understand that there is only one of the new ironclads—viz., the *Agincourt*, which draws some 26 feet—which is too large to enter the Hope Dock without being lightened previous to doing so. Under these circumstances, it would not be surprising if her Majesty's huge ironclads be sent out to the China station, for the existence of this magnificent dock now opened in Aberdeen Bay, Hong Kong, removes what would otherwise be an insuperable objection to their presence—namely, the impossibility of dock repair in the event of accident.

We gladly assist in making known this last addition to the attractions of Hong Kong, and shall watch its progress with every desire for its success, although in no way connected with its interests.

In that same part of the world the coolie trade is claiming attention as under the pretended neutrality of the Portuguese, the horrors of the Slave trade seem to be encouraged. The *Overland Trade Report* says, in reference to the coolie trade :

Much interest has been felt in Hong Kong, in certain proceedings at the Legislative Council, which have drawn attention to the abuses of the coolie trade. An ordinance had been introduced by the Governor for the purpose of still further regulating such little emigration as is carried on from the port of Hong Kong. Of course, the ordinance was framed with the most praiseworthy objects, but it was opposed by the Hon. James Whittall and the Chief Justice, on the ground that in

view of the frightful atrocities which were perpetrated at other ports in connection with the coolie trade, the only proper plan of dealing with it would be to abolish it altogether. Mr. Whittall moved that the ordinance should be withdrawn and another ordinance brought in, prohibiting this coolie trade, that is to say, the engagement of coolies on contracts and their shipment to the West Indies altogether. He did not argue that, conducted as the trade was at Hong Kong, any great evils arose from it, but he spoke without the slightest reserve or hesitation, as also did the Chief Justice and the Governor himself, of the atrocious crimes perpetrated at Macao in open defiance of the intended regulations which exist on paper, and behind which the Macao government shelters itself when attacked. That the Macao coolie trade was an organized slave trade, that no voluntary emigration took place at all, that the unhappy men sent away were kidnapped and forced into slavery by those who made a business of enticing them on board small vessels up and down the coast and then selling them at Macao, all these shameful facts were emphatically asserted and supported, in one case, as will be seen from the report of what took place, by reference to that which was within the personal knowledge of the speakers.

Mr. Whittall and the Chief Justice were of opinion that the only way for Englishmen to put themselves in a position to remonstrate against the iniquities of Macao successfully, was to abolish emigration from Hong Kong entirely, because while it was permitted under regulations here, the Macao government would be able to flourish their delusive regulations and say, "our regulations are the same as your own." To prove at home what is the fact, that these Macao regulations are a hypocritical sham, while admitting that under proper regulations the trade was harmless, would, it was maintained, be much more difficult than to urge, after giving up the trade here altogether, that no regulations, however praiseworthy in intention, could purify it from the foul abuses that were inherent in the system.

The Governor, however, did not take this view of the case. He argued that the imperial government had sanctioned coolie emigration by the act of 1855, and that the Hong Kong council could not run counter to imperial legislation. Mr. Whittall and the Chief Justice, therefore, had to abandon their resolution, but it is understood that they intend as members of council to transmit through the Governor to the home government a memorial on the subject of the coolie trade, setting forth the frightful practices with which it is bound up, and the means by which in the interest of humanity the Macao slave trade may be assailed. We hope to hear more of this memorial.

HERE is an account of the tea ships on their annual race. The ship *Taeeping*, one of thirteen vessels now engaged in a race from China to England, with the first portion of the new season's crop of tea, passed Anjer on the 27th of June. This ship, it will be remembered, arrived in the Downs last year at the same time as the *Ariel*. Owing to the flatness of the tea market the usual premium on the cargo of

the first ship will not be paid this year, but the interest in shipping circles attending this great ocean competition can hardly be said to have diminished. Subjoined is a list of the thirteen ships which have left Foochow for London :

SHIPS.	DATE OF SAILING.
Maitland	31st of May.
Serica	2nd of June.
Taeping	4th of June.
Fiery Cross	5th of June.
White Adder	7th of June.
Ziba	8th of June.
Flying Spur	9th of June.
Taitsing	10th of June.
Black Prince	10th of June.
Yang Tsze	12th of June.
Ariel	13th of June.
Chinaman	15th of June.
Golden Spur.....	18th of June.

The following relates to the Atlantic Telegraph :

The Telegraph Construction and Maintenance Company's ship *Chiltern* sailed to-day from Greenhithe with 320 miles of submarine cable on board for Placentia, in Newfoundland. The cable, which has been manufactured for the New York, Newfoundland, and London Telegraph Company, will be laid from Placentia to the island of St. Pierre, a French colony in the Gulf of St. Lawrence, and thence extended to Sydney, in Nova Scotia. Great efforts are being made during this season in establishing throughout Nova Scotia a series of land lines which it is hoped will enable the communications to be maintained between Europe, viâ the submarine cables, and Canada and the United States, throughout the coming winter, so as to avoid the serious interruptions to traffic which occurred last winter. In any case this new cable about to be laid will enable telegrams to be sent independent of the old land lines in Newfoundland, so that the risk of interruption by snow-storms and floods will be much reduced. Directly the *Chiltern* has laid the Placentia cable she proceeds to the entrance of Trinity Bay for the purpose of repairing the 1866 Atlantic cable.

By telegrams just received from the Admiralty surveyors in that neighbourhood, we hear that a shoal patch has been discovered in the immediate vicinity of the recent accident to the 1866 cable, and there is every reason to believe that the mishap occurred owing to that cable having accidentally been laid across this ridge, on which there is very little more than forty fathoms of water, and where icebergs naturally ground. Sir Samuel Canning, who so successfully submerged the Atlantic cables, aided by an efficient staff, has proceeded in the *Chiltern* to execute the above important works.

This shoal patch, we have no doubt, will receive attention which will bring it to light in our charts.

IN our last number we noticed the arrival of the American raft from New York. By the following, it seems like its predecessor, the little *Red, White, and Blue*, to have taken its place at the Crystal Palace.

Within the Palace, and in an exceeding quiet corner, was an exhibition of another and more wonderful result of human strength and daring. It was the American life-raft which so lately arrived in Southampton water, after a boisterous, but on the whole prosperous voyage across the Atlantic, over whose long waves it had been safely piloted by its brave and skilful Prusso-American captain. If we should have a few more achievements of this kind, we shall expect some day to hear of an enterprising American laying his hat down on the waters of the Hudson, booking himself as the only passenger in it, and then, having spread out his pocket handkerchief for a sail, making a prosperous voyage to some favoured harbour of "the old country."

The life-raft is not now for the first time exhibited in England. In the course of the present, almost the past, summer, Mr. Parry, the inventor, exhibited his raft on the *Serpentine*, but it is now an object of much greater interest, having actually proved its capabilities as a lifeboat by a voyage across the Atlantic. The captain speaks highly of its performance, making seven knots an hour, sailing, when necessary, within five points of the wind, and proving in all weathers so buoyant that it did not ship a single sea throughout the whole voyage. It is a very simple contrivance, consisting merely of three pontoons securely lashed together, and covered with an open wooden platform, in the centre of which a little "round house" gave shelter to the captain and his little crew. There are easily-worked air pumps attached to each pontoon, by which they can be inflated in eight minutes, and the whole affair, which may be stowed away in pieces in fine weather, can be put together and launched over the side very rapidly in case of necessity.

The advantages claimed for the life-raft are—first, its portability when not in use; second, the rapidity with which the pontoons may be inflated and the raft fitted for sea; third, the facility of launching; and fourth, the great number of people it would keep afloat. The captain informed us that it was tested in New York harbour with upwards of five hundred people either standing on it or hanging out of its sides, and that it kept them all afloat. This would make it an invaluable article on board an emigrant ship, where all the ordinary boats would be insufficient to take off the passengers; and this quality would also make it better than even a lifeboat, provided, as the captain states, it could be launched so much more rapidly. It is well-known that there is commonly great and sometimes fatal delay in lowering boats in moments of emergency, in consequence of the excitement of the men and the intricacy of the tackle; but, if we recollect rightly, there was also considerable delay at the *Serpentine* experiment in hoisting the raft over the bridge; although this is certain, that once in the water it righted itself in a moment, and in another was covered with passengers, whom it carried safely to the

landing place. Taken with all qualifications, the recent arrival at Sydenham is well worthy a visit and careful inspection from those who take an interest in the saving of human life at sea. The captain is a frank and intelligent sailor, and will give every information to visitors.

OILING THE SEA.—In our account of one of the gales encountered last October in the Arctic ocean, it will be remembered that we stated the circumstances of Captain Penniman having saved his vessel, the *Minerva*, by pouring oil into the foaming sea. A whaleship master (which is probably Captain P.) writes to the New York *Herald* that he has followed the sea for twenty-eight years, and been master for ten years, and during that time has saved the vessel under his command twice by “oiling the sea.” He says :

“That when the master of a ship cannot get out of a storm—that is, when a ship is disabled and he has to take the heft of the gale—if he has oil on board, start two or three gallons over the side of the ship. This will give the ship smooth water to the windward, and then the oil allowed to run drop by drop is all that is required, for as soon as the sea comes in contact with the oil it breaks, and the ship is in smooth water as long as the oil is allowed to run. In 1864, in the heaviest gale of wind I ever saw, I lost all my sails, then the rudder, and I know the vessel could not have ridden the sea for an hour if I had not had oil on board. Five gallons of oil lasted me fifty-six hours, and this saved the vessel, cargo, and lives on board. Let ships of heavy tonnage have two iron tanks of forty gallons each, one on each side, with faucet so arranged that the oil can be started at any time ; small vessels ten gallon tanks, and all ship’s boats tanks of five gallons each, well filled, so that in case the ship founder or burn, the boats will have oil to smooth the sea in case of a gale. With these tanks of oil on board of ships and a good man for master—one who knows the laws of storms and handles his ship so as to get it out of the centre of the storm—you will have no more foundering of good ships at sea, with the loss of many lives and millions of money.”

NAUTICAL EXPRESSIONS.—We understand that the subject of our seamen’s lore engaged much of the attention of the late Admiral W. H. Smyth, who had collected ample matter for the formation of an important volume on the subject. There can be no doubt of the deplorable condition in which a large portion of their vocabulary has long been lying, and from the well-known erudition of the Admiral, we anticipate much rectification of orthography, illustrated by authorities for many expressions of vague formation. Our anticipations we are glad to find encouraged, as the brotherly task of the editor has been performed by Admiral Sir Edward Belcher. Thus from two such able Naval officers a most valuable work may be expected.

MEDITERRANEAN TIDES.

THE question of real tidal influences in these waters must be regarded as still subject to discussion, although a large amount of careful observation was, many years ago, brought to bear upon it by Admiral Smyth. It is certain that there is a diurnal change of level, and extremely probable that this is due to lunar action, but the amount of flux and reflux is small, and greatly interfered with by winds and currents. Thus at Venice, it is considered that time of high water takes place about an hour and a half before the moon reaches the meridian, and again after an interval of twelve hours, while the times of rising and setting of the moon are the periods of low water. The change of level is stated to vary from one to four feet at the head of the Adriatic, but is probably less, and is so completely interfered with by occasional currents produced by local winds, as after to be altogether masked and lost sight of.

But while at the head of the Adriatic the tide due to the moon's attraction is thus masked, it is even less clear in the Ionian sea, where the water is more open. In Corfu, as at Argastolé, in Cephalonia, it is only in embayed seas that the effect is determinable; and it generally only ranges between two inches and a foot. Still there can hardly be a doubt there does exist a periodical rise and fall of the water, and the result, even of this wave, ought to involve a corresponding change of the air and secure good health. That this is not the case is probably due to the interference of prevalent winds with the real tide.

There are many causes acting to produce a change of level in these waters, and each helps to complicate the others. Thus, in some places and during some seasons, the vaporisation of the water in the open parts of the sea may help not a little, while sometimes the continuance for an unusual period of some prevalent wind, and even the earthquakes, by producing large waves, are enabled to influence greatly the level of the water at enormous distances. The whole subject, though of much interest, is surrounded by difficulties, which render it difficult to determine accurately the meaning of local observations.

On the whole however, we must regard the Mediterranean as being subject to one or more direct small tides, besides having its waters disturbed by occasional storm, but as the regular tide is very small, and the flux and reflux of the tide in a large ocean is accompanied by the disturbance, equally regular of the great atmospheric wave, so this occasional change of level may, perhaps, be accompanied by small oscillations in the pressure of the air, and be connected with the winds. Certain winds prevalent for a long time must inevitably drive the water into, or out of, the various embayed portions of the Mediterranean and the reflex action of the wave thus produced may act again on the atmosphere.

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 31, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 465.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen Mls	Remarks, &c. Bearings Magnetic.
41. Cape Otranto	Adriatic	40° 6'·4 N. 18° 30'·6 E.	F.	196	13	Est. 15th July, 1867.
Taranto Har- bour Entrance	S. Paolo Islet	40° 26'·3 N. 17° 10'·1 E.	F.	66	10	Est. 15th July, 1867, instead of present temporary light.
Algiers	Extension of North Mole	... ..	...	...	...	See Note (a).
42. United States	Cultivator Shoal	40° 38' N. 68° 11' W.	...	...	...	See Note (b).
	Nantucket Shoal	40° 56' N. 69° 20' 7" W.	...	...	...	See Note (c).
Crooked Island Passage	Castle Island	... ..	...	...	...	See Note (d).

F. Fixed. F.f. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

(a) ALGIERS.—*Extension of North Mole.*—As the north mole at Algiers is being extended in a south-easterly direction by the sinking of large blocks of stone, mariners are cautioned to give the mole head a wide berth, especially at night.

(b) UNITED STATES.—*Cultivator Shoal westward of George's Bank.*—The U. S. Government has given notice, that a dangerous shoal has been discovered westward of George's bank, in the track of vessels from Europe to the United States.

This shoal—named the *Cultivator shoal*—extends in a S.E. and N.W. direction, upwards of five miles in length, with broken spots of eight and nine fathoms water and three fathoms on the shoalest part, hard sand.

The shoalest part is in lat. 41° 38' N., and long. 68° 11' West of Greenwich.

On approaching it the water suddenly decreases from fifty to fourteen, nine, and ten fathoms and then to six; but in nearly all weather, during daylight, the ripple or breakers on it can be seen in time to be avoided.

A buoy has been placed on the shoal in nine fathoms water.

(c) *Nantucket Shoals.*—On a part of the Nantucket shoals, north of Phelps's bank, is a shoal, named *Lott's breakers*, in lat. 40° 56' N., long. 69° 20' 7" West of Greenwich, on which there is six and a quarter fathoms water.

This shoal can be seen from a distance of two miles in the daytime, and when the tide runs at its full strength small breakers show themselves.

(d) WEST INDIES.—*Crooked Island Passage*.—The lighthouse in course of erection on Castle island, at the southern entrance of the Crooked island passage, is now completed and ready for the reception of the light, previous to its exhibition. Mariners are informed of the completion of the building, as it forms an excellent day mark for the Crooked island passage.

CHARACTER OF RADAMA II.

MADAGASCAR REVISITED: *describing the events of a new reign, and the Revolution which followed, etc., etc.* By Rev. W. Ellis, author of *Polynesian Researches, etc., with illustrations.*

THE interest excited by the accession of Radama to the throne of Madagascar, the great change by which that event was attended, and the extent to which his brief reign may continue to affect his country, render a slight extension of this obituary notice not inappropriate.

This prince, although born about twelve months after the death of the previous sovereign, received from his mother the name of Radama. Subject as that mother was to passions as fierce and ungoverned as ever agitated any human being, and possessing as she did a heart as relentless and cruel as ever lodged in any human breast, it was often a marvel to me that the son of such a mother should have possessed any of the kindlier feelings of our common nature. It is not easy to form an idea of a more terribly appalling state of society than that in which such an individual occupied the highest position. Not only was the innocent blood of the best in the land shed to open for her the way to the throne; but all the near relations of her husband were sentenced to the most cruel deaths that could be devised, in order to secure to her its undisturbed possession. The own brother, the sister, and the mother of the first Radama were starved to death. The brother endured sufferings which even the sentries placed to guard him could not bear to look upon. Other near relatives fell beneath the executioner's spear. The father of her unborn child, accused of treason and witchcraft, was sentenced by her to die; and when afterwards her sleep was disturbed by dreams and visions in the night, the body was exhumed and decapitated, the severed head, according to the direction of the diviners, being placed at the feet and the head of a black dog fixed in its place. But as the frightful dreams continued, the bones were taken up and burned, and the ashes scattered to the winds. The house in which the officer had lived was then pulled down, and the very earth on which it stood thrown over the Tarpeian rock, the foundations being sprinkled with sacred water. A sister and other members of the same family were subjected to the tangena, then strangled and their bodies burnt to ashes. Such were the conditions under which, as an infant, Radama entered upon life.

The child of this mother was also cradled in all the superstitions of the country; and initiated as he was in the far-reaching delusions of that superstition, it was more surprising to me that his mind should be so generally free from the taint, than that their influence should, towards

the close of his life, have to some extent assumed mastery over his then shattered reason.

The circumstances and associations under which childhood and youth are passed generally influence the future character of individuals, as much as the dispositions and tendencies derived from parentage; and the moral atmosphere which surrounded Radama from his earliest years, was such as it is scarcely possible for members of a state of society like our own to form any adequate conception of. Naturally gay and light-hearted he was fond of pleasure. Music and dancing entered largely into the amusements of the court at Antananarivo. At some seasons night dancing and revelry formed part of their pastimes, in which vast multitudes engaged. Every source of pleasure was lavishly provided for the only son of the sovereign—the heir to the throne. Associated with him in these amusements were a number of youths of his own age, children of other branches of the royal race, or of the highest nobles of the land; and under such circumstances it was scarcely possible that his youth and early manhood should have been morally purer than those of his associates, and there is no evidence that it was less so.

But these were not the only perils of Radama's youth. There were officers of the government capable of teaching him to read and write, and supplying him with books, and to their instruction and training his youth was confided. Until the members of the mission sent by Sir W. Stevenson, Governor of the Mauritius, returned from Madagascar, we had never heard that there were books unfavourable to Christianity in the country; but these officers found that one of the teachers of the prince was reading "Paine's Age of Reason." While waiting at Mauritius, I myself received from this instructor of the prince a "brief account of Radama," with a request from the author to have it published, and this account stated that the king was a Deist; that he believed there was one Supreme God, but did not believe the Bible; that he was neither Protestant nor Catholic, Mahomedan nor Pagan, but respected all who love peace, and obeyed the laws, whatever their religion might be. I did not publish this account, for I did not believe it to be true; but I sent home with other documents a copy of this, to me, painful and ominous sign of danger. I could not doubt that the king's religious opinions and feelings had been tampered with, though not perhaps to the extent stated, especially as the Christians still spoke of his friendship, encouragement, and aid.

When we consider the relative positions of the prince and the Christians—he brought up by the side of the queen, and as heir to the throne, flattered by all those whose loyalty or self interest prompted them to seek the favour of the present ruling powers, and a favourable recollection when he himself should be sovereign—it appears but little likely that he should have become in any way interested about the Christians. But when we consider, further, that the prince must from his childhood have heard the Christians denounced, if not executed, both as apostates and traitors, bewitched by the sorcery of foreigners, and enemies to all that was ancient, established and honourable in the country—whom it was necessary to sweep away, root and branch, from the face of the earth; who were to be seized wherever seen, imprisoned, enslaved, tortured, burned, speared, or stoned to death,—it would have been only natural had the prince regarded them with abhorrence, and shunned them with fear. But that he should have shewn kindness towards them, and finally have become their advocate, friend, and protector to the utmost of his power, was as remarkable as any event which distinguished the long and severe persecution in Madagascar.

That the young prince became all this to the Christians, every heathen or Christian, native or foreigner, acquainted with the events of the time, freely testifies. When Radama pitied and succoured the Christians, enquired about their books and their worship, expressed his approval of their faith and their practice, as far as he could then understand them, we cannot wonder that they should think he was himself inclined to become a Christian. And when further he sought occasion to warn them of coming danger, and endeavoured to avoid it, alleviating to the utmost of his power its severity, pleading with the judges, favouring the escape of the accused, assisting in their concealment, sometimes in his own house, redeeming them when sold into slavery, with his own money, and encouraging them to trust in God, we cannot wonder if the Christians were led to think that the Spirit of God had moved the heart of the prince thus to favour them out of his own regard for the faith which they professed.

And when, for the sake of saving their lives, the prince said, as he is reported to have done in the council of the government—"Why should the Christians be put to death, they had done nothing but good to the country. If because they are Christians they are to suffer—I am a Christian. If people are to be put to death because they read the sacred Book and pray,—I have done this. I must be put to death;" If the prince made this open declaration, as it is not unlikely that he did under the impulse of his own generous emotions, it was very natural that they should think he had become a Christian, and should write of him as such, although at the time the prince might have meant no more than to show the injustice of putting men to death who were good subjects, of whose religion he approved, whose books he had looked into, and at whose worship he had been present.

I can easily conceive of the Christians under these circumstances, writing to their countrymen in Mauritius or their Christian friends in England, that the prince was a Christian without intending to deceive or exaggerate, and that he also should have spoken in this manner without having become a Christian in his heart, or have entered personally upon a Christian course of life.

I can also easily conceive without attaching blame to any one, how, on the arrival of these statements in England, persons deeply interested in the subject, and not able to understand the difference between the state of society in England and Madagascar, would think that the prince was almost a Christian and not far from the kingdom of heaven. I had heard from the native Christians before I left England, that he was a Christian; but the warning I received at Mauritius, in the document above noticed, and the statements from the Rev. Mr. Le Brun confirmed my conviction that his conversion was a blessing still to be desired and prayed for. Nevertheless when I remembered the many Christian lives which he had been the instrument of saving, the vast amount of suffering and misery which he had prevented or alleviated, and the cordial manner in which he encouraged every effort to extend the Gospel in the country, I could not but hope that he would himself become personally a partaker of its blessings.

It was under this impression, and also from the intimation I had received of his deistical tendencies, that I devoted so large a portion of the time which I spent with the King in reading the Bible, in endeavouring to set before him its manifestations of the Fatherhood of God; of the divine love and mercy shown in the great work of redemption by the Lord Jesus Christ, with its ample provision for satisfying the yearn-

ings and necessities of man's higher nature, which he to some extent seemed to understand and feel, although such impressions were transient as the morning cloud, and passed away as the early dew.

There is but little doubt that Radama's interest in the Christians was first excited by their severe and unjustly inflicted suffering. The earliest instance of this that I can recollect was when Prince Ramonja, the descendant of a long line of chiefs of a conquered race, the early friend and protector of the Christians, was reduced from his high position on account of his Christianity and sentenced to serve in the ranks of the army. Radama went to see him, and wept when he beheld the scanty clothing which his friend wore, and the coarse rice on which he fed, and when he heard of his suffering from cold on duty during the night. Nor did his compassion end in tears. He sent him food from his own kitchen, but this was mixed with the common rations of his mess, and Prince Ramonja shared in every respect the lot of his comrades in the ranks to whose grade he had been reduced.

Benevolence and kind-heartedness distinguished Radama through life, and presented one of the most striking contrasts that could be imagined between the mother and her son. The benevolence and kindness of the Prince appeared innate, and was exercised irrespective of colour, rank, or nation. A number of French sailors who had cut down a flagstaff at Fort Dauphin, in the south, were seized and sent for trial to the capital. As they approached Antananarivo, the Prince and some of his attendants met them shoeless and with bleeding feet, slowly travelling to the city; taking off his own shoes he gave them to one of the sore-footed sailors, and sent one of his attendants to fetch shoes for the others. These men were foreigners belonging to a nation not thought at that time to be very friendly to the Hovas, and they were also prisoners coming to be tried for offences against the Malagasy law; but notwithstanding this, as soon as the Prince saw they were sufferers he hastened to give them relief. Radama's sense of the sacredness of human life, and his unconquerable aversion to its destruction, were the most remarkable traits in his character, and I have often thought that if not originated, they were matured and confirmed by the shock and revulsion of feeling produced by the waste of life, and the spectacles of bloodshed which must have been made familiar to him during his mother's reign. I believe it was his firm purpose that no human life should be taken by his authority, and that his reign, whatever might be its duration, should be designated by succeeding generations as the "bloodless reign." At least so he said once to me.

Radama's fondness for company and his pleasure in society, rendered him an easier victim to intemperance than he might otherwise have been; and owing to some peculiarity of constitution, he was affected by a quantity of wine so small as not to produce the slightest difference with his companions. But if the account of his drinking habits before the time of my arrival were true, there certainly was an encouraging change for the better in this respect for many months before his death.

From the time when Radama ascended the throne and proclaimed religious freedom to all classes in the country, he allowed no interference with the idols, their keepers, or their worshippers; but he had, long before this, ridiculed the pretensions of the priests, and openly tested the power of the idols. Their priests or guardians had boasted of the power of Ramahavaly, one of the chief national idols, as being itself indestructible and irresistible. The prince employed some men to go and set fire to the house in which the idol was kept, as a means of satisfying his own mind. The men at length accomplished their object, and when

the flames of the burning idol's house blazed up through the darkness of the night the prince, standing outside the palace, called his companions to gaze at the startling, and to him, important conflagration. He never afterwards believed the idols to be in any respect different from the materials of which they were composed in their ordinary and natural state. The pretended communications from the spirits of his ancestors was the only form of superstition by which his mind was ever after affected.

The king abolished the ordeal by tangena or poison, and never employed or encouraged divination. He only listened to the pretended supernatural communications of the idol-keepers during the prevalence when they professed to bring messages from his ancestors, and thus appealed to a weak and credulous part of his character. This first excited my fears that his reason had lost its balance, and that his mind was seriously disordered.

The strange and unaccountable proposal to issue a proclamation which would encourage the indiscriminate shedding of blood, and would apparently legalise murder, was so entirely opposed to that abhorrence of the taking of human life, under any circumstances, which had until the last few weeks been the most decided feature of Radama's character throughout the whole of his life, that to me it seemed to admit of no other explanation than that his mind at the time was not sane. This natural and hitherto consistent aversion to bloodshed, appeared towards the last to be obliterated by superstitious influences, but to be revived in the last moment of his consciousness.

I have never said that Radama was an able ruler, or a man of large views, for these he was not; but a more humane ruler never wore a crown. He never consented to the secret destruction of an enemy, nor signed the death warrant of a criminal; and amidst all the agitation and intimidation of a successful revolt against himself, he risked his throne and his life rather than consent to the death of his friends; and the catastrophe which followed was probably in a large measure owing to his persistent endeavours to save them. Even those who strangled him are said to have made no answer to his last appeal for mercy to himself, when before the twisted girde round his throat deprived him of utterance, he is reported to have exclaimed—"I have never shed blood!" In those solemn moments, when the pomp and pageantry, the greatness and the power of royalty are vanishing for ever from those whom they have heretofore surrounded, and the realities connected with them alone remain, alas for ever; when the throne has been vacated, and the mouth of the grave apparently entered, how seldom have royal lips closed with the utterance of Radama—"I have never shed blood."

The proposal to issue the obnoxious and fatal law was the immediate occasion of the revolution, its causes were of deeper and earlier origin. To remove the *menamaso*, as the king's agents and confidential advisers were called, to replace the power and patronage of the government in the hands of the party in the state which originally held it, to re-enact in parts the laws which had been abrogated, to increase if possible the army, to retain the advantages of commerce with foreign countries, but restore the former system of internal government as far as possible, with the toleration of Christianity, and the permission of education, were probably the chief objects sought by the change which had taken place. Whether this substituting of other men for the *menamaso*, and allowing the king to retain a nominal sovereignty, while the new ministers should actually govern the country, or whether the course which things actually took was

intended from the first, cannot perhaps now be ascertained. The authors of the king's death would have stood higher in the opinion of other nations had they allowed him to live, even though deprived of real power, but the peace of the country might not have been secure so long as he remained alive amongst the people.

The opening of the country to the industry, enterprize, and skill of foreigners, the entering into treaties of friendship and commerce with England and France, and the re-establishment of perfect liberty and equality for natives and foreigners, placed the relations of Madagascar with other countries on a better foundation than had ever before existed. The forbidding of all persecution on account of religion in the country, and the granting of sites for the memorial churches, the abolition of the tangena and the punishment of death; the diminishing the attendance required of the soldiers, and reducing the amount of unrequited service demanded by the government; the introduction of the payment of wages for work done by the natives, together with the substitution of friendship and confidence amongst the different tribes, instead of distrust and hostility; thus seeking by justice, generosity, and peaceable measures, to bind the different races to their rulers, and to each other, rather than to hold them in subjection by force;—these are among the benefits of Radama's brief reign, which will perhaps be remembered with advantage to his country, when his failings, his errors, and his vices shall have been forgotten.

TO THE EAST BY THE WEST.

THE intelligence received a few days ago from China and Japan by way of San Francisco must have startled many minds that have not kept pace with the progress of the recent successful efforts made to reach the old East by going westward. But enough has already been accomplished to show that the future route to Asia is to lie through our Pacific possessions and across the Rocky Mountains, and this is not only for us in the Atlantic States, but for England and the other commercial nations of Western Europe. A mail line of steamers has now been started to run between San Francisco and Yokohama, Japan, with which latter port there are steamers connecting the ports of China. When the arrangements shall have been matured the company having charge of the matter will, it is said, extend their operations eastward from New York to Liverpool, so that the chain of connections will ultimately be as follows:

	MILES.	DAYS.
Liverpool to New York	2,350	10
New York to Aspinwall	1,980	7
Across the Isthmus	48	1
Panama to San Francisco.....	3,182	11
San Francisco to Yokohama	4,761	17
At Yokohama .....	..	1
Yokohama to Hong Kong	1,379	6
Total	13,700	53

The completion of the Pacific Railroad will knock off ten or twelve days from this table, so that there is no possibility of any route eastward through Europe competing with this. How much the time for communicating intelligence through the telegraph will be shortened, it is impossible to foretell. Even a Pacific submarine cable, reaching to China and Japan, does not seem so improbable as an Atlantic cable did a few years ago.

We cannot help seeing that one of the consequences of this closer connection with the East will be a greatly increased emigration from those dense and over-populated countries. Already there are sixty thousand Chinamen in California, diffused through every kind of labour. Cutting down the Sierra Nevada for the road-bed of the Pacific Railroad, engaged in woollen and other manufactures, and doing in the larger cities the work of washerwomen and chambermaids, no work comes amiss to them, and they do it all well and cheaply. They have proved so invaluable to the state, that the bitter prejudices at first entertained against them by most, and still harboured by the Irish and a few individuals among the native Americans, have so far given way that the disqualifying laws passed against them will probably be repealed at the next session of the Legislature, and "John" will become a citizen, if not a brother. The prospect of absorbing a much larger swarm of Oriental emigrants looks rather dubious to be sure, but our national experience of late years bids us to be discouraged at nothing.

CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in August, 1867.—Sold by J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

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EDWARD DUNSTERVILLE, *Commander, R.N.*

*Hydrographic Office, Admiralty,
 21st August, 1867.*

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

OCTOBER, 1867.

CONSIDERATIONS of the winds, currents, and tides of the Gulf of Cadiz, and the Western Shore of the Spanish Peninsula, with the best points for making the coast from sea, and how it should be navigated.

[There are few parts of the ocean more frequented by ships and seamen than the Strait of Gibraltar and its adjacent sea ; and a general view of this subject bearing on the requirements of the navigator could not perhaps be looked for from a more worthy source than the chief of the Royal Hydrographic office at Madrid. The current volume of the *Anuario Hidrografico*, our usual copy of which having been so considerably presented by Don Salvador Morena, we lose no time in preparing a translation of the paper on the subject that it contains, and which will be completed in future numbers of this work.

The reader will remember the papers on the *Ladrones* in our last year's volume obtained from the same source.] We now commence the "Considerations."

As that part of the Iberian Peninsula under present consideration varies much in its contour—one line of its coast being nearly at right angles to another, and as this difference of direction produces an effect on the winds and currents that prevail in its neighbouring seas, it will be as well to classify them, describing first their prevailing characters between the Strait of Gibraltar and Cape St. Vincent, and then those between this Cape and Cape Prior.

Before we proceed with them, however, let us state what we mean by—

The Gulf of Cadiz: the portion of coast included under this name is the great bay which the South coast of Portugal and the Sea coast of Spain form with the coast of Morocco. The limits of this gulf which might be permanently named the Gulf of Cadiz are the Cape St. Vincent to the north, and that of Mazigan to the South, those capes lying N.N.W. and S.S.E. of each other two hundred and thirty miles distant. This great gulf, which as we have observed is entirely open to winds from West to South, would be no doubt very dangerous to vessels if it had not at its interior, the Strait of Gibraltar, and a little to the northward of it the excellent shelter of the Bay of Cadiz.

Coast of the Gulf of Cadiz.—The coasts of this gulf are generally low and uniform, excepting those in the vicinity of the Strait and about Cape St. Vincent. Besides, much of the coast about Cadiz is fringed with outlying and dangerous reefs, from which it would not be easy for vessels to extricate themselves if they had not that port to run for. Fortunately the whole shore of the gulf is lined with a bank of soundings, which on the Coast of Spain and Portugal, taking the one hundred fathoms line, extends out from fifteen to twenty miles; and from the African shore to nearly the same distance, thus giving ample warning to the navigator by the lighter colour of the water, of his proximity to the shore, should he not be able to distinguish this on account of its distance and the state of the weather.

Winds in the Gulf of Cadiz. It is admitted that winds are merely currents of our atmosphere, occasioned by diversity of temperature; and that such currents are affected by the configurations of continents over which they pass, the presence of seas near them, lakes, river overflows, etc.

We also know that while in a certain extent of sea, a certain wind prevails, in another not far from it another wind is blowing, if not directly opposed to it, at least from a very different quarter. Thus we find that in the limited space of the ocean under consideration, off the western part of the Peninsula, fresh northerly winds may prevail; while in the southern portion of it, S.E. winds are blowing of more or less duration. This contrast of direction is very remarkable, and owes its origin not only to the configuration of the coast, but also to the proximity of the Mediterranean.

Within the Gulf of Cadiz and especially near the Strait of Gibraltar, easterly and westerly winds are the most prevalent, while on the coast of Portugal and Galicia, northerly and southerly winds are the most common. Let us here observe that what we mean by the term "*Easterly*" (a term used by the generality of navigators on the South coast of the Peninsula,) refers to those winds from the "*Eastward*," which blow from E.N.E. to E.S.E.; and by the name of westerly, those which blow from the opposite points, or from W.N.W. to W.S.W.

Easterly winds. Within the Mediterranean Easterly winds are generally moist and attended with foul weather, heaping dense clouds on the mountains on the eastern side of the Strait of Gibraltar; but are very dry and clear on the coast of Cadiz, Huelva, and Algarve, as if in traversing the heights of Algeciras they dispose of all their

moisture and mist on the cordilleras which separate the high land from the low.

Force of the Easterly wind. The strength with which the easterly wind blows, increases until it passes the meridian of Tarifa; but it then soon loses its strength as it approaches Cape Trafalgar, and frequently does not even reach Cadiz. It must be observed, however, that this same strong *Levanter* which scarcely reaches Cadiz continues established in the parallel of the Strait to a much greater distance from its western entrance.

It is also to be noted that while the fresh *Levanter* prevails within the Strait at Cadiz and in the Gulf of Huelva, land and sea breezes are blowing at Cadiz, and in the Gulf of Huelva, Cape Trafalgar being almost always the dividing limit of these contending winds. Thus it is common, particularly in summer time, for a vessel to be running through the Strait with a strong *Levanter* and then into Cadiz with a fresh sea breeze. In such cases the *Levanter* accompanies the vessel to the meridian of Tarifa, and sometimes to that of Trafalgar, losing in strength and hauling gradually to S.E. and South until it arrives at S.W. or W.S.W. If the navigator bound to Cadiz foresees this change, he does not keep along the coast, but runs on a parallel to the southward of Tarifa, so as to be well clear of Cape Trafalgar, and in a good position when he catches the sea breeze to make Cadiz with it.

Slackness of the Levanter. Sometimes the Easterly wind is two or even three days in reaching Cadiz, and sometimes even although it may be strong in the Strait. Sometimes also it will reach Chiclana and Carraca without touching the mouth of the Bay where only the sea breeze prevails. But in this latter case it soon becomes general, extending over the whole coast as far as Cape St. Mary or even west of this Cape. Sometimes also it does not pass the Broa de Sanlúcar.

Yet when the *Levanter* is spreading as just observed it also becomes intermittent. It comes in gusts of brief duration, as if it would overcome its opponent the western breeze. In these cases vessels from the Strait making for Cape St. Vincent have it partially or in gusts until it becomes general. Sometimes it does not pass the meridian of Cape St. Mary where it generally meets the Westerly wind.

On the coast of Cadiz or between Cape Trafalgar and the mouth of the Guadalquivir the *Levanter* also comes in gusts; but when once established it maintains its place, and above all in summer time, lasting sometimes as long as fifteen days together. Perhaps the only intermission of it is about sunset, and slackening throughout the night, but recovering itself about daylight and regaining its former strength as the sun gets at its height. It will thus set in with some gusts soon after sunrise, becoming stronger as the sun gets at its height, and blowing hardest about noon. In recompense for this there are some years in which this most pernicious wind will not blow for even a couple of months.

Ill effects of the Levanter.—The greatest scourge of the bay of Cadiz is undoubtedly the *Levanter* or East wind. When this wind has been continuing for a week, perhaps for a fortnight, especially in those

places which are heated by it, all mercantile transactions are suspended, and the most powerful boats can scarcely be trusted except in the night or early mornings when it is slack. On these latter occasions, the *Levanter* will sometimes become so light that it will even assume the benign influence of the land wind and will draw to the north-east; but as soon as the sun is up it again makes itself felt with severe gusts and at nine or ten o'clock no boat can cross the bay. This mostly happens in the hot season, and at times when it is scarcely felt in the eastern entrance of the Strait of Gibraltar.

Principal character of the Levanter.—From the meridian of Tarifa to the westward the *Levanders* are very dry and clear, especially in summer. When, in this season, they blow with the intensity above-mentioned, they are attended with a suffocating heat, which obliges the people of Cadiz and its vicinity as a protection from it, to close their houses hermetically if they can, and prevent the dust which it brings from entering their dwellings. In its course it destroys the crops and produces much ill effect on health. Within the bay it blows from E.S.E. and S.E., excepting about daylight when it is E., or even E.N.E.

Aspect of the Levanter.—While the *Levanter* lasts, the sky keeps clear; but the horizon is somewhat heavy, and the land misty. If a cloud be seen it is very light and high, of the *cirrus* order. The sun rises and sets very dull and hazy, so much so that the eye can look at it without flinching. Dryness is its distinctive character on the western coast of the province of Cadiz, one totally different to that which it presents on its eastern shore, where it is remarkable for its humidity.

The most lasting *Levanders* are those which establish themselves by slow and gradual progress, or which do not reach Cadiz until they have prevailed for two or three days in the Strait: those which come suddenly and perhaps with much strength are the soonest over. In winter time the *Levanders* do not last so long, and at their commencement are clear, but lose this quality when they become S.E.: then they also bring heavy clouds and showers, sure signs that they will haul to the southward, and change to the *Vendaval*, or S.W. wind.

Indications of the Levanter.—The warnings of the *levanter* are the entire absence of dew, and the peculiar dryness of every thing about the decks. In calm weather, or when the wind is very light from the westward, this dryness is very evident, and at the same time light threads of gossamer will be seen clinging to the rigging; they are sure indications of the approaching *Levanter*. Some persons believe that these filaments of gossamer are really threads of spiders. But such is scarcely credible. If we consider the enormous quantity that the *Levanter* brings with it while it lasts, some fine, some coarse, it is impossible to imagine there can be such a multitude of spiders to produce them in the small tract of country between the heights of Algeciras and the plains of Chiclana. We suspect that they are a watery meteor which is imperceptible from its minuteness. The same phenomenon is found at Vera Cruz with northers, and at the

river Plata with Pamperos, as well as in the interior of the continents when dry winds prevail. It is frequently observed in the country about Madrid especially in autumn.

There are others who consider these filaments are produced by microscopic spiders which emit them in dry winds. It is sufficient to see the secretions of the insects which are the property of the microscope? Masses of these filaments are found on the vessels anchored at Cadiz clinging to all parts of the rigging, some very fine and others coarser, and there are also some which are clotted and tolerably long, transparent, and also opaque, white, and generally elastic. Some are found coagulated together in the water and all separate when taken by the hand. With close attention they may be seen to cover the surface, carried along by the wind like skeins of thread. With this same wind, the *Levanter*, none of these are found in the rigging of vessels anchored at Algeciras. What does it consist of? This phenomenon must have some relation to the hygrometric condition of the atmosphere. On the shores of the Gulf of Mexico in the dry season it is also observed: there these gossamers are generally called the threads of the virgin, and considered an infallible proof of an approaching norther. The same phenomena are observed in the river Plata where they are found in the midst of fine weather with a light northerly wind and a clear sky and are the same precursor of a pampero. The same is observed on the shore of the Spanish peninsula. In all these cases the atmosphere is very dry and transparent, and the threads adhere to all parts of the vessel from the trucks to the sides, not even excepting the persons on board.*

* In reference to this subject it may contribute towards settling the question of whence do these numerous filaments come by quoting the following extract from the *Commercial Advertiser*, published at Honolulu, Sandwich Islands (weekly); or as they are improperly called Hawaii, the French pronunciation for Cook's "Owhyhee." It appears to be addressed to the "curious," and certainly in the subject of these filaments, or "threads of the virgin," there is enough to excite the attention of curiosity. It reads thus:—

"FOR THE CURIOUS.—An old resident on Hawaii, whose letters are always welcome, sends us some incidents relating to spiders: 'Will some of the scientific gentlemen of Honolulu explain the following facts. Many years ago, perhaps forty-five, while residing in the United States, I one day saw, in the latter part of summer, a spider start from a bush and go up at an angle of about 45° without any web to go on. In after years I often thought of the above incident, and came to the conclusion that I was mistaken. About eight years ago, I observed a green spider, being of a different colour from any I recollected to have seen before. I broke off the bush on which I found it, and was examining it rather closely, when he started off as the first had done. Two years ago last July, on the mountain side of Hualalai, I saw one of the common large spiders of Hawaii, up some forty feet in the air with considerable web floating above it. It was nearly calm, and no tree within a quarter of a mile. A gentleman was with me, whose attention I called to the spider, but no explanation of the phenomenon could be given by either of us. One week ago I saw the same thing again in an open plain. As I have not heard of any other person seeing spiders in such a position, I have come to the conclusion that it was not a common thing. Now I wish to know how so large a thing as a full grown Hawaiian spider can float in the air; or if suspended, to what can it be attached?'"

It is not essential to our question that the spider should float in the atmos-

Signs of the Levanter in Gibraltar Strait.—The experienced mariner who may be at Cadiz knows very well when the *Levanter* prevails in the Strait. If he sees on the heights of Ubrique, and the more elevated mountains of Algeciras little white clouds like bunches of raw cotton adhering to their summits, he knows they are proofs of the easterly wind blowing in the eastern entrance of the Strait. And if, with these proofs, he finds the suffocating heat which accompanies this wind, and the dryness which belongs to it, he concludes that the *Levanter* will soon be with him, although at the time the westerly wind may be blowing in the bay. The seamen also in the Gulf of Huelva, or off the Broa of Sanlúcar, know that the *Levanter* is blowing at Cadiz and in the Strait, when the sun at rising presents a white appearance, and the land is misty.

The light *virazon* is also a precursor of the *Levanter*. When it is found that this daily breeze begins to decrease in strength, and when at night hauling to the land it inclines more to N.E. than N.W., accompanied by some light broken clouds, it may be expected shortly. It may also be expected sooner when the heights of the distant mountains are distinctly seen. These same heights will remain clear while the wind continues to the N.E. or E. But as soon as their summits become clouded the wind may be expected to draw to S.E., which is the wind that soonest overcasts the sky.

The winds which preserve the clearest atmosphere are those from N.E. to East.

The barometer will also announce the easterly wind. A small de-

scent, although his own filaments might prevent his too rapid descent, enough for us that those filaments produced by it do so. Therefore we shall not endeavour to answer the gentleman's question, but it would occur to any one that a spider may be blown off a neighbouring tree, or he may be lifted in the air by a breeze of wind seconding his own exertions in the way of soaring. But in the violence of the West India "norther," or the South American "Pampero," the searching strength of the wind would dislodge those filaments from every recess, even in the ground to which it would penetrate, and the extraordinary masses of the spider's thread collected by the wind would be accounted for by the encouraging effects of the warm climate so favourable as it is to insect life. But the strength of those winds is not essential to the presence of the phenomenon for we read here that they are also swept from the plains of Andalusia by the east wind. The ordinary N.E. Trade would carry them westward away from the Gulf of Mexico, where they are met and considered as a sign of the norther, the atmosphere then having a tendency to flow southward to the gulf. Thus then to complete the phenomenon we first have the abundance which will be favoured by the climate, then the soaring propensity of the insects themselves here supplied, and the irresistible violence of the wind to snatch the filaments of these insects from every possible hold they may have to leaf, flower, or weed, from which to carry them and to leave them on the resisting obstacles of yards, masts, and riggings of vessels to which the gale has brought them. Doubtless they are floating in the air and may have been left there by the insects themselves as we have seen above, or caught up in passing over their haunts. In conclusion, we may also remark that the accidental observation in the *Anuario* that they are never seen in the rigging of vessels at Algeciras confirms our opinion that they come from the ground and its belongings, being the produce of innumerable minute as well as large spiders, for the vessels there are to *windward* of them while those at Cadiz are to *leeward* with the *Levanter*.—ED. N. M.

pression of the mercury in the barometer, and a simultaneous rise of the thermometer are indications of the quick approach of that wind ; but as soon as it has set in, the mercury of the barometer again rises.

After the *Levanter* has been blowing for some days, especially in summer, if the barometer is found to rise, it may be expected soon to cease, even if it be blowing in heavy squalls. And, in fact, it will be gone the next day, and succeeded by the wind from the opposite quarter, and this is only violent when it sets in against it.

Westerly winds : These winds alternate with the *Levanter*, and consequently blow in all seasons. They are distinguished by their healthy influence on the animal system, their freshness mitigating that heat and dryness which are the effects of the *Levanter*.

These westerly winds have an entirely opposite character to the *Levancers*. They are moist and generally accompanied by clouds. They never blow so hard as the *Levancers*, nor are they so persevering ; and generally slacken or go down with the sun.

In winter time when these winds draw to S.W. they bring heavy clouds and showers which expend themselves in wind as well as in rain, in a manner so as to obscure the whole coast ; still between the showers there are in general sufficiently clear intervals that enable the navigator to make his easting for the coast. If they draw to the N.W. they are clearer and generally last for intervals of eight or ten days.

Signs of the Westerly Winds.—The approach of the westerly wind is marked by dews. If in the interval of the Easterly wind, at night or early in the morning, moisture is seen on the different parts of the ship proceeding from the dew, it will soon terminate to be followed by the westerly wind.

Veering of the Easterly Wind by the South to West.—In general before the west wind is set in it will gradually lessen in force and veer by S.E. and south to S.W. accompanied at the same time by a fall in the barometer. If this should happen in winter the sky begins to become overcast as soon as the wind gets to S.E. ; it blows from this point for one or two days, the barometer continuing to fall, and it finally becomes south. As soon as it gains this quarter the sky is entirely overcast, then the wind freshens up and changes to S.W. accompanied by heavy clouds and constant rain. In this state of the weather it is that the barometer is lowest, and the wind may be soon expected to veer to west if the barometer has a tendency to rise and the rain becomes less frequent.

On the coasts of Huelva and Cadiz the East and West winds divide the year between them. It should not be supposed, however, that the easterly are more persisting than the westerly winds. The last prevails perhaps more than the former ; but as the east wind is the scourge of Cadiz Bay and its vicinity, while the westerly wind mitigates and cools the atmosphere which it brings, a single day of the Easterly wind is more notable, and in fact, more feared than a week of the Westerly wind.

The annexed table will afford conclusions which will corroborate what we have stated.

Class of Wind.	Number of Days of each Wind.					Total Days of each Wind.
	1856	1857	1858	1859	1860	
Calms	0	1	2	1	1	5
Light Variable ..	19	16	4	28	20	87
North	2	6	13	5	8	34
N.N.E.	14	11	11	13	12	61
N.E.	14	16	15	22	12	79
E.N.E.	4	9	10	9	2	34
E.	76	72	50	46	53	297
E.S.E.	6	11	17	3	5	42
S.E.	12	13	9	16	16	66
S.S.E.	3	3	5	2	..	13
S.	14	16	18	6	9	63
S.S.W.	12	14	6	6	6	44
S.W.	28	27	35	27	30	147
W.S.W.	35	29	38	46	40	186
W.	27	31	22	27	26	133
W.N.W.	26	27	18	23	40	134
N.W.	70	55	84	79	81	369
N.N.W.	4	8	8	6	5	31

RESULTS.

Number of Days N.	34	..	Number of Days of 1st quarter	471	
"	S.	63	..	2nd "	184
"	E.	297	..	3rd "	512
"	W.	133	..	4th "	568

Days of East Wind during the five years	..	373
Days of West Wind	..	455

This table has been formed from the daily official journal kept in the tower of Tavira, and the wind has been taken at noon of every day and considered definitively established.

It will be seen from the above table that westerly winds, or those between W.N.W. and W.S.W., much exceed those from the eastward or between E.N.E. and E.S.E., although the days of easterly wind surpass considerably those of westerly wind. This must be attributed to the fact that the winds from the third quarter (or S.W.) are always more lasting than those of the second (S.E.), as those of the fourth (N.W.) are more so than those of the first (N.E.); consequently the west which participate with S.W. and N.W. have a great predominance over the easterly winds which participate with opposite points N.E. and S.E.

N. W. Winds.—The winds which also prevail much at Cadiz and its vicinity are those of the fourth quarter, and of these, those from N.W., which circumstance arises, in our opinion, from that bay being situated

at the eastern limit of the Gulf of Huelva, in which those largish rivers, the Guadalquivir and Guadiana fall, besides the Odiel and the Tinto.

S.W. Winds.—Next to winds of the fourth quarter, those of the third may be considered to predominate, which are those that bring the storms and rains of winter, and are the same in summer that constitute the *Virazon*.

Northers.—Northerly winds blow but little, and when they do, generally in the winter. They must be considered as land winds, and always incline to the N.E. in the Mediterranean if the easterly winds prevail, or to the N.W. if in the ocean with a westerly wind. The winds of the first quarter (between north and east) are the least violent and mostly attended with clear weather.

Southerly Winds.—Nor do southerly winds blow much, for in winter time they soon haul to S.W., and if in summer they form part of the *virazon* and are transitory.

Although the *Levantes* will prevail at all times of the year, they do so more in the months of March and April and in the hot months. In July, 1856, there was a whole fortnight of continuous easterly winds, and also in August of that year.

The N.E. winds, as we have seen, were the most persisting, and prevailed from March to September, blowing hardest in April and May.

From November to March, or in the winter months, the S.W. winds were the most prevalent; and they certainly are the winds most to be feared in the Gulf of Cadiz, for besides blowing strong, they bring heavy and constant showers which conceal the land and throw in so much sea, that all the bars even become impassable. These winds called *Vendavales*, vary between W.S.W. and S.S.W. Fortunately they give notice of their approach, and the navigator who may either be cruising off Cadiz or to the westward, sees its approaching signs and can get clear of the shore to the parallel of the Strait, and if necessary he can always be sure of the Strait.

Signs of the Vendaval. The *Vendaval* gives unequivocal signs of its approach. If the easterly wind be blowing it will veer to the S.E., the sky will become obscured and the coast concealed, especially the Broa of Sañlúcar, and the wind may be expected from the southward with rain, and soon the *Vendaval* will follow. This change is always preceded by a considerable fall of the barometer.

A calm and a dense fog are always signs of the *Vendaval*. In winter after the *Levanter* has been blowing if it draws from S.E. to south, and it continues so with light misty winds, a gale may be expected from the offing. Vessels should be careful not to encounter the *Vendaval*, not only on the dangerous coast between Point San Sebastian and Cape Trafalgar, but also within the Gulf of Huelva. On the first of these parts beset with reefs, the sea breaks at a great distance from the shore, and it often happens that breakers are seen before the coast is visible. In the second portion of coast, a vessel runs great risks, for in the breaking sea which is raised

by the gale in addition to this there is a set towards the shore ; and if the navigator should not have sufficiently foreseen this, so as to provide for getting away from it, and becomes hampered with it, he may reckon himself fortunate if he be not wrecked on the Arenas Gordas. On that portion of coast between Cape St. Mary and Cape St. Vincent the risks are not so great, for with the wind at S.W., a vessel can escape by standing off S.E. unless the wind be so strong that with it and the sea she cannot weather Cape St. Mary.

In respect of the coast of Africa included between Cape Mazigan and the Strait, there is not so much risk there with the *Vendaval*, because the land trends much in its direction and it has no great sinuosity. The worst winds on it are from West to north-west, and with these a vessel should take care not to risk her safety in Jeremias Bay. What is most to be apprehended in this part is the sea which gets up always, which in a gale on shore will very soon lose a ship and her crew, should she unfortunately in the thick weather of the *Vendaval* mistake this Bay for the entrance of the Strait, a mistake indeed which has been fatal to many vessels.

Veering of the Vendaval. Although usually the *Vendaval* does not last above three days, sometimes it is stubborn and will continue for nine or even twelve days with but slight interruptions. If after blowing strong it veers to west, fine weather may be looked for, because it does not remain long at this point, but hauls to N.W. which is generally the concluding quarter of the gales in our hemisphere, and is that which clears up the atmosphere. But if from west it returns again to south-west the bad weather will begin afresh, and the wind will blow harder than before although it may not last so long. But when it becomes steady at N.W. it very seldom backs to S.W.

The wind once established at N.W., for some days it may blow hard but then will become more moderate and is almost always attended with clear weather, although blowing harder by day than by night. If it change to north afterwards, it seldom remains so long, for it will pass to N.N.E. and then to N.E., where it will remain for some days more. This wind is always the precursor of the *Levanter*, north-east and Easterly winds in the Gulf of Huelva. In winter time in the Gulf of Huelva N.E. winds are the almost certain sign of the *Levanter* blowing at Cadiz and in the Strait of Gibraltar, as the N.W. winds are of there being a westerly wind on the south coast of Portugal. In this Gulf of Huelva, far enough from the Strait, the *Levanter*s are not so fresh nor yet so lasting : they sometimes take two or three days to reach Huelva, and die away here before they cease at Cadiz.

Baffling Winds. When the *Levanter*s enter the Gulf they do so by fits and starts, and are preceded by light baffling winds from all parts of the horizon that are called *Macareos* by the Spanish sailors. If these baffling winds are attended by a suffocating heat in summer time, the *Levanter* may be expected, which generally lasts some days when once it sets in, blowing hard as if it was from S.E. while the sun is

high and drawing to N.E. at night with fine weather. But in summer in the Seville river their heat is intolerable.

In winter time in the Gulf of Huelva the continuance of the northeasterly wind is generally considered a sign of the *Vendaval*, and as soon as it passes to the eastward this terrible wind may be expected, for then it soon becomes S.E. and shifts to south and S.W. As soon as the wind begins to veer thus, and the barometer falls, a vessel should get out of the Gulf as soon as possible into deep water, and avoid compromising her safety by getting hampered with the Arenas Gordas.

It frequently happens that while these changes are going forward in the Gulf, at Cadiz and in the Strait the *Levanter* may be blowing, and on the coast of Algarve the westerly wind. When mist is observed over the entrance of the Strait the *Levanter* may be known to be outside, and the westerly wind prevails at Cape St. Vincent when the Portuguese land is clear or if the mist be seen at the mouth of the Guadiana.

Old sailors who know the Bay of Cadiz and its neighbourhood, have an idea that the climate of those parts has undergone a change of late, an alteration which they consider extends even to winds and storms. They consider that of late, storms are scarce in comparison with those of former times, when bad weather commenced in September and lasted until the Spring; storms following each other with scarcely any intermission.

It seems that the general tendency of storms now almost as soon as they are established is to slacken, and not to last any time. But at any rate both in Summer and Winter the wind is more variable, and it is seldom observed the same wind will last for fifteen days together as in their opinion it used to do formerly.

Storms scarcely ever get up on the coast of Cadiz, but come from other parts more or less distant. A storm at Cadiz where it is remarkable for the force of the wind, is soon over, and in general bad weather comes from the S.E., a quarter from which the wind is much stronger than from the east.

DEFECTS OF THE PACIFIC CHARTS.

WE have received for publication in these pages the following important communication from Mr. J. B. Steele, the master of the ship *Sebastian Cabot*, of Liverpool. In reference to the Stewart Islands, which he places in North latitude instead of South, he will find a very good account of them given by Captain Cheyne, on his passage from Sydney to China. It is an addition to what was stated of them in this work so long ago as 1848 (see p. 575), quoted since by Findlay's Directory of 1851, with acknowledgment and repeated in his edition of 1863. (What has Captain Steele been doing with his eyes in all

this time?) In another number we will quote Captain Cheyne's account of them. Their discovery is dated in 1791, but their position is due to Krusenstern. In regard of Isle Saypan of the Ladrões or Marianne Islands, we can refer him also to our translation of the Spanish description of it in our last year's volume, p. 297, *et seq.* At the same time the Spanish officer who describes it holds out no hopes of those resources which seem to have disappointed our correspondent. His chart appears by our last vol. (p. 688), to be published by the Admiralty, which charts our readers know are to be had of Potter, 31, Poultry.

The position of the Douglas reef is a very fair confirmation of the chart, and the remark on Rasa is very important, as well as that on the Trade in that Western part of the Pacific.

The Loo Choo Islands want a thorough examination before any pretensions can be made to a good chart of them.

It is highly satisfactory to record Mr. Steele's ideas on the duty of making known these observations. It was for that purpose this work was established many years ago; and we trust that he will not only persevere in his views of communicating them, but induce his brother seamen to do the same.

To the Editor of the Nautical Magazine.

Shanghai, 20th June, 1867.

SIR,—I beg to offer you for publication in your valuable Magazine an account of the Stewart Islands, which I have no doubt will benefit vessels passing in their direction, and more particularly those which unfortunately may be wrecked on or near them. From the accounts of the savage nature of those natives of the Solomon Islands, and others in their vicinity, the crews of such vessels may be afraid to land on the Stewart Isles, as the very meagre and unsatisfactory descriptions of them and their inhabitants, given by the sailing directions, do not encourage them to do so.

The ship *Sebastian Cabot*, of Liverpool, under my command, called at the Stewart Islands, situated in lat. $8^{\circ} 26'$ N., long. $163^{\circ} 2'$ E. on the 16th of May, 1867. They consist of a group of four islands, connected with each other by a coral reef. They are very low and covered with trees, and cannot be seen in clear weather at a greater distance than twelve miles. The largest island is about a mile and a half long, and the total of the inhabitants of the group is less than two hundred. A number of the natives came off to the ship in canoes, resembling in every particular those used by the Cingalese.

They are a very fine, stout, and good looking race of men, their colour is tawny with black hair, they are extremely simple in their behaviour and their dealings. They brought on board for exchange a quantity of fowls, ducks, pigs, cocoanut oil, etc. Tobacco was the great object of their wishes, and they deal very liberally. Knives, fishhooks, and needles were among their wants which we supplied. One of the natives had a book in which was inscribed, by their respective masters,

the names of all vessels that had visited the islands for some years, and from this it appeared that twelve months had elapsed from the date of the last, which was a whaler. All the natives speak English pretty well, but one of them who seemed very proud of his attainments, repeated the alphabet very correctly. This man had in his possession a certificate which was granted him by the master of a vessel in testimony of services rendered in refitting, and for the hospitality and attention shown to his crew who were sick, and who remained on the island some weeks to recover. Not the slightest apprehension of hostility need be entertained in landing here. Indeed, parties coming here from wrecked vessels, or from those in any kind of distress may be certain of being relieved, and their wants attended to by these well disposed and humane, but very primitive people.

LADRONES, RESOURCES OF.—*Isle Saypan.*—Having been deceived by the directions with regard to the Isle of Saypan (one of the Ladrões N. Pacific), which I was induced to visit through statements of the ease with which they alleged supplies were to be obtained. I am inclined to send you a few particulars which may be the means of preventing others from being misled in the same way. The ship *Sebastian Cabot* sailed within five hundred yards of the shore where it was described that a good anchorage existed, but nothing could be more erroneous. There is no opening in the reef which lies N.W. of the island, nor was there any point of approach along the shore which we could discern. The above reef extends along the coast about ten miles in a N.W. direction. A number of boats crowded with men were engaged fishing inside the reef; but paid not the slightest attention to us, nor did they shew the least sign of coming off to ascertain our name, so as there were no means of our communicating with the shore, we proceeded on our course.

According to my observations the N.E. point of the Island of Saypan is in lat. $15^{\circ} 16' 30''$ N., long. $145^{\circ} 50'$ E.

DOUGLAS REEF.—*Position.*—Having sighted Douglas Reef N. Pacific on the morning of the 10th June, 1867, and finding a difference in the position and the description given by Mr. Sproule, of the ship *Marie*, in 1848, from the "China Pilot," fourth edition, 1864, I beg leave to state that it is a reef extending in a W.N.W. and E.S.E. direction for five miles. Two isolated rocks near its western end, the westernmost about twenty feet the other about fifteen feet above water, distant from each other about a quarter of a mile.

The position by excellent observations of the westernmost rock I made to be long. $136^{\circ} 17' 15''$ E., lat. $20^{\circ} 28'$ N. It is a very dangerous reef in stormy or cloudy weather, as it can be seen but a very short distance.

By inserting the above you will much oblige,

Your obedient Servant,

J. B. STEELE,

Master of the *Sebastian Cabot*,

From Sydney,

Bound to Shanghai.

RASA ISLAND.—On the 13th of June, 1867, we passed over the position assigned to Rasa Island (viz., lat. $24^{\circ} 27' N.$, long. $130^{\circ} 40' E.$), but saw nothing of it. A sufficient proof that it is not situated in the above position.

EXTRACTS UPON THE WEATHER.—On the 26th of May, from lat. $30^{\circ} S.$, we crossed the equator in long. $158^{\circ} E.$ with a steady S.E. Trade wind. Got the N.E. Trade winds in lat. $1^{\circ} 40' N.$, carried them steady at E.N.E. to the Ladrões, from thence to the Loo Choo Islands (15th June). Experienced a steady S.E. wind resembling a Monsoon or Trade wind with beautiful clear weather. Judging from what we experienced since leaving the Ladrões, as the S.E. wind has been so steady, I am of opinion that either a Monsoon or Trade wind does exist here. As I consider commanders of vessels navigating these unfrequented seas would do well to take notes of the positions of islands, shoals, weather, etc., and forward them for publication, which would be of great benefit to the shipping community, I send you the above Extracts.

Yours respectfully,

J. B. STEELE,

Master of the *Sebastian Cabot*.

LOO CHOO GROUP.—P.S. 15th June, 1867, I made the positions of the under mentioned Islands to be, viz.: Yori Sima, N. Point, lat. $27^{\circ} 4' N.$, long. $138^{\circ} 36' 30'' E.$ Yeirabu Sima, S. Point, lat. $27^{\circ} 24' N.$, long. $128^{\circ} 46' E.$ There is a clear passage between them twenty miles wide. We experienced a current setting to the S.E. at the rate of one and a half miles per hour, causing strong eddies and rippings in the channel. Wind variable from the S.E. to S.S.W., with light showers of rain and cloudy weather.

J. B. STEELE.

[We hope to hear again from our correspondent.—ED. N. M.]

NETHERLANDS.

(Concluded from page 483.)

Schermerboezem.—With the aid of these preliminary remarks, the following more detailed account of one of the numerous water administrations into which this kingdom is divided may perhaps be rendered comprehensible.

The administration here selected to exemplify the multiform and ingenious contrivances invented by the Dutch for the control of large bodies of water is called the "Schermerboezem," in the Province of North Holland; it lies between the Zuyder Zee and the dunes, and is thus exposed to the national danger of submersion on the one side, and protected by the national defence upon the other. It contains the

Alkmaarder Meer, and is bounded to the south by the river Ij, thus having to guard against attacks from inner and from outer waters. It is important in area and fertility, and possessing to a large extent the leading features of the Netherlands, appears well fitted for an illustration of this subject.

To the Schermerboezem belongs the most extended polder system in North Holland. The whole tract of country thus parcelled out into polders, with their boezems bears the name of "Kavel Waterland" (literally translated "group of water-land"), and by this appropriate name it is designated by the Waterstaat, and minutely described by Mr. G. de Vries, Member of the Council of State, in his work, published in 1864, on the Sea Defences and Water Administration of North Holland. From that interesting work, and from the nine as yet published sheets of a very beautiful hydrographical map of Holland, now being brought out by Government on the large scale of 1 in 50,000, or in round numbers, one and a quarter inch to the mile; the details that follow have mainly been extracted.

Extent of Kavel Waterland.—Kavel Waterland includes all lands and waters lying between West Friesland to the north, the line of the dunes or sand-hills to the west (here forming a barrier against the German Ocean of between one and two miles in width, and eighteen feet in height at the lowest point), the river Ij to the south, and the Zuyder Zee to the east.

The area of Kavel Waterland may be roughly stated at 240 square statute miles, of which not ten square miles are occupied to-day by the boezem and canals. The Schermerboezem itself contains 5,000 acres of water, and the polders belonging to it contain in all 193,750 acres.

This tract of country formerly contained a chain of stormy lakes, which often overflowed in wet seasons, and joining one another, formed vast inland waters, ruinous to agriculture, and threatening to the dykes that alone separated them from the dreaded Zuyder Zee. The principal of these lakes were the Beemster, the Purmer, the Wijde Wormer, and the Schermer. These four alone, when at their lowest level, covered two-thirds of Kavel Waterland. Towards the end of the sixteenth century, however, man began to get the upper hand of them, and their conversion into polders was happily completed in 1612, 1622, 1626, and 1635. The first of them, the Beemster, is, after the Haarlemmermeer Polder (which is twice and a half its size), the largest specimen in the Netherlands of what the Dutch term "dry-makings." The scheme was first broached in 1570. In 1592 funds were applied for, which were not, however, promised by the States of Holland and West Friesland until 1597. In 1607 a company was formed at the Hague by Dirck van Oss and others to pump out the Beemster in whole or in part, and on their security the states lent the necessary capital on May 21, 1607. At the commencement it was thought that sixteen windmills would suffice for the undertaking, but this number was shortly increased by ten, and the twenty-six mills were then divided into thirteen gangs. By the end of 1608 several of the mills began to pump and early in 1609 they were all ready.

Towards the end of this year the bottom of the lake became visible in some places, but during a storm on the 23rd of January, 1610, the great waterland sea dyke gave way at Durgerdam, and the pressure on the ring dyke that had been constructed round the Beemster proved greater than it was capable of resisting. It gave way in two places, at Neck and at Ryp, and the lake was again filled.

On the 15th February, 1610, further and ample funds were advanced by the States; in 1611 more mills were put on to the work; on the 19th May, 1612, the drymaking was at last completed; and on the 30th July of that year the distribution of the lots of land redeemed took place at the town of Purmerende.

The number of mills working in the different years was as follows:—

		MILLS.			MILLS.
1608	..	21	|	1611	.. 41
1609	..	26	|	1612	.. 43
1610	..	30	|		

The mills were latterly divided into twelve gangs, that is, worked at twelve points. The ring dyke is over 37,000 yards long, and has an average height of + 1.50 Z. P. (a metre and a half above the mean level of the sea).

This was the Beemster pumped out; and from that day to the present the name of Dirck van Oss has been held in deep respect in Holland, as the name of the first Dutchman who conquered the waters on anything like a large scale. The system he employed has been closely followed in all successive undertakings of this kind, and, with the exception of the application of steam and certain improvements in machinery, the plans of Dirck van Oss for draining the Beemster were adapted the other day with a like success to the lake of Haarlem by M. Gevers d'Endegeest, the hero of this last conquest, and the sanguine prophet of the ultimate reclaiming of the Zuyder Zee.

Distribution of a Drained Lake.—When a lake has been laid dry and its acres divided among the shareholders of the undertaking, its area is next subdivided into parallelograms, often not larger in extent than an acre a-piece, and separated from each other by what are known, in the phraseology of Dutch agriculture, as primary canals. Such a ditch, for in reality it is little more, performs the following four important services. The parallelogram is drained into it in wet seasons, and irrigated from it with facility in times of drought. It forms a water highway for the small canal boats that in this country take the place of the tumbril and the waggon of Old England, and finally it answers all the ends of quickset hedges as barriers for fields and properties, while tending by its presence to fertilize and not impoverish the soil. According as the circumstances of the ground (such as the level drainage, etc.) require, a dozen or more of these parallelograms are told off by the Waterstaat as forming a little group by themselves, and are compelled to pump their superfluous drainage into, and take their irrigating water from, one or more transverse

canals of a higher water level, which again communicate in their turn with the main outlets to the sea. In the Beemster polder there are no less than four canal systems of different water levels, through all of which every drop of water must pass in the course of its conveyance to or from the ring dyke by which the whole system is surrounded.

Ring Vaart.—This ring dyke is invariably constructed in duplicate, with an intervening space of from fifteen to twenty mètres, and a navigable canal is thus formed, on the banks of which the waterworks are erected, and into which the water from the lake is discharged. Now, in the group of drained lakes known as Kavel Waterland, these “ring vaarts,” as they are called, have been connected with one another by several canals, the waters of which can be cut off at pleasure at certain points by means of locks and sluices, according to the demands of agriculture, navigation, and the variable land. This great arterial system is in reality the Schermerboezem proper, and the ring vaarts of the Beemster and the Schermer, to the south and south-west respectively, have been widened and deepened so as to form important links in the great North Holland Canal, the water highway by which Amsterdam is connected with Helder by a direct line of inland navigation.

North Holland Canal.—The proportions of this work may be realized from the fact that it was constructed to admit of line-of-battle ships passing one another at any point along its length. Possessing, moreover, as a boezem-water, a common level throughout its length, its navigation is relieved from the usual tedious interruptions of multiplied locks and sluice gates. Further an idea may be formed of the character of the whole work from the knowledge that this canal has been built up, not made by digging, and that this enormous volume of artificial water, though lying considerably below the mean level of the sea, is lined throughout its almost entire length by drained lakes, lying from one to four mètres below itself.

The exact level of the Schermerboezem proper is — 0·56 Z. P. in summer, — 0·40 Z. P. in winter, and — 0·90 Z. P. when at the lowest point it is allowed to attain.

Height of Dykes.—The following table, from the careful work of Mr. Vries, already quoted, is not without interest as illustrating the nicety and accuracy with which the operations of the Waterstaat are conducted. From it can be seen at a glance the various levels of some of the more important dykes and piers that protect the eighty-one polders dependent on the Schermerboezem in the administration of Kavel Waterland.

Schermer ring dyke	..	..	..	+1·00 Z.P.
Beemster	..	..	..	+1·50 Z.P.
Purmer	..	..	..	+0·20 Z.P.
Wijde Wormer	..	..	..	+0 07·5 Z.P.
Zaan Nanwernasche vaart	..	..	..	= Z.P.
Marker vaart	..	..	..	+0·10 Z.P.

(To get the total height of these dykes, the depth of the polders

below the level of the sea must be added ; it averages perhaps fifteen feet over all.)

Level of Polders.—The eighty-one polders thus protected from inundation—from the rupture of a sea wall or the overflow of a boezem—lie mostly three or four mètres below the level of the sea, and two or three mètres below the level of the boezem into which they are pumped.

Thus the drained Beemster is divided into the following principal polders, lying at the following depths below the sea :—

Boven polder	..	containing	4,375	acres	—4·00 Z.P.
Arenberg polder	..	..	4,487 $\frac{1}{2}$	..	—4·27 Z.P.
Kruisoord polder	..	..	117 $\frac{1}{2}$	..	—1·50 Z.P.
Lage kilpolder	..	..	2,187 $\frac{1}{2}$	..	—4·35 Z.P.
Midden polder	..	..	5,312 $\frac{1}{2}$	..	—4·05 Z.P.
Hooge kilpolder	..	..	1,162 $\frac{1}{2}$	..	—4·13 Z.P.
			<hr/>		
Total	..	..	17,642 $\frac{1}{2}$		
Add for roads and canals	..	..	19 $\frac{1}{2}$		
			<hr/>		

Total acres within ring dyke .. 17,662

Salubrity of.—Once finally drained, these polders are not found to leak by percolation to any considerable extent, and the ordinary rainfall during autumn and winter is seldom more than is advantageous to the ground, and can be pumped out by the ordinary windmills before the 1st of May. Neither does experience show that polders form unhealthy residences. All the great lakes that have been drained have become densely inhabited ; and although the flat-roofed farm-houses with which they are dotted have been compared by travellers to mushroom rooms that have sprung up amid the tufted vegetation surrounding them, the born inhabitants are forgetful of the factitious nature of their soil, and prove satisfactorily by statistics that the conditions of existence they enjoy are not detrimental to mankind.

The details above given are all applicable, *mutatis mutandis*, not only to the polders formed by the draining of the lakes, already mentioned as comprised in Kavel Waterland, but to all reclaimed ground in the Netherlands. Everywhere the same windmills greet the eye, all performing the same task of pumping up water from the polders into the boezems during a period of at least half of each year.

Application of Steam.—Steam power is of very partial introduction, that is to say, it is confined to some few large and recent operations, and to a very few strategic points, such as the abutting of a boezem of a low level on the sea, in which case the work of discharging water is enabled to continue when high tides or prevailing unfavourable winds have compelled the closing of the sluices. These sluices invariably open towards the sea, and thus shut and open naturally and at the right time, according as the pressure comes from within or from without. They are always remarkable for solidity, and often of magnificent proportions. The application of steam, as above stated, is still of

necessity confined to some limited administrations, where the waters do not exceed a volume that can be grappled with and reduced in a short period—say a week at most—and where, moreover, the land is of that valuable nature, or the valuable crops are so endangered, as to make it worth while to consume fuel rather than patiently await a return to favourable conditions.

Water-mills.—In some districts, where the soil is highly charged with silt, the Scoop or Eckhardt wheel is used in preference to the Archimedes screw pump; and as the water seldom requires to be lifted more than a mètre at a time from a lower into a superior tier of canals, almost any form of water-wheel can be easily applied, and turned by the construction of the simplest windmill:—

“It is easy to conceive the extreme fertility acquired by land managed in this manner. Formed originally of mud, which was itself rich, it is covered all the year round with herbs which contribute to its fertility. All the water that is injurious is drawn off almost at pleasure, and a regular and gradual irrigation is introduced at the most favourable moments.”

Taxation of Polders.—Yet this extreme fertility does not all represent net profits to the proprietors or farmers of the soil. Taxes for the support of the Waterstaat are heavy, and must be paid to keep the country above water. These taxes form no exception to the general rule in such matters, and assume the well-known shapes of charges direct and indirect. The direct, average perhaps eight florins per acre on land that has been reclaimed, and the indirect, include forced labour “for a man’s own self” in perpetually ditching and dyking, if he will make the most of what may be called his unnatural advantages. The dunes, moreover, which ensure safety on one side at least, require to be kept in order and carefully watched. They are composed of fine sea-sand heaped up like the hills of the desert, and their tendency is to blow inland and smother the alluvial soil. To provide against this contingency every kind of herb that can be induced to take root in the shifting sand is planted at those strategic points where the wind catches the corner of a sand-hill, and bent grass is trained with care and great expense along the coast from Texel to the Scheldt, forming what may be called an inner line of coast defences against the fury of the elements.

Nothing would be easier than to prolong this Report to an indefinite length by describing in minute detail the administration of Rijnlandsboezem, of Raakmastsboezem, of Amstellandsboezem, of the boezem of Naardervaart Karnemelsloot, of the Vecht, and of the town water of Amsterdam, with all of which the maps of Mr. Conrad have now for the first time made the public acquainted. Such a description, however, would only contain needless repetitions, as the features with which we are now familiar would but repeat themselves from different points of view, with some unimportant variations of the plus and minus quantities. It will therefore be enough to state that the experience of the Dutch in controlling the waters, and converting natural enemies into priceless auxiliaries for the ends of agriculture,

navigation, and military defence, is now at the disposal of the public on payment of rather more than one pound sterling.

The publication of these maps was ordered by Mr. Thorbecke, when that statesman was last Minister of the Interior, and they are now being executed under the personal superintendence of Mr. Conrad, the chief engineer of the Waterstaat, assisted by Staff Lieutenant-Colonel Jacob Bessier. The military topographical maps of the Netherlands have been taken as a basis, and each sheet (costing about half-a-crown of our money) contains a map sixteen inches by ten inches, representing a tract of country a little over twelve miles in length and eight in width, with ample marginal explanations and descriptions of the nature of the ground and character of the works within those limits.

Colouring of Maps.—Additional clearness is given to these maps by the excellent system of colouring adopted. For example, the boezem of any given administration is coloured blue, green, or brown; the polders belonging to it being tinted light blue, green, or brown accordingly. Thus the colour of a polder always corresponds to that of its boezem, the only exception being in the case of polders that discharge direct into the outer waters, which are invariably of a brighter green.

Polders having no direct communication with their boezem but discharging into another (or administrative) polder, are surrounded by a narrow ring or belt of slightly darker shade, and a striped colouring is adopted in the case of polders discharging into two separate boezems, and thus belonging to two distinct administrations.

All ground of which the level is superior to the mean level of the sea is left uncoloured, and it is thus evident at a glance that the narrow dunes or sand-hills constitute the only natural land in the districts as yet illustrated by Mr. Conrad's maps.

Works, such as canals, in course of construction are indicated by dotted red lines; and reference to the maps shows that it is not deemed impossible to reclaim land lying at an average depth of seventeen metres below the level of the stormy waters of the Ij, and that a canal is being constructed through the dunes to unite the outer waters of the German Ocean with the mart of Amsterdam, in order to save commerce from the danger and delay of the long circuit to the north by Texel, and also to provide for Amsterdam a direct outlet to the sea in the event of the execution, at a later period, of the gigantic project of the draining of the Zuyder Zee.

The maps above described appear at uncertain and irregular intervals. The two extreme northern sheets of the nine now published appeared but a few weeks ago, and it is known that several sheets are now prepared and ready to be given to the world, and are only awaiting funds, and leisure of the Hydrographical Department, to pass them through the press.

Before it is possible, however, finally to dismiss the subject under consideration, it is necessary to extend the area of these inquiries beyond the limits of the nine sheets of Mr. Conrad's maps, and of the six hundred and ninety-eight octavo pages of Mr. Vries' valuable

work on the Waterstaat of North Holland. It is necessary to cast a glance, however cursory and superficial, on the abnormal shapes assumed by the lands of Groningen and Drenthe owing to the constant excavations of turf during many centuries, and on those strategic lines of Utrecht and the Yssel, by which, in time of war, the Dutch hope to baffle the advance of the invaders of their soil.

Origin of Lakes.—From the consideration of polders and drained lakes, one needs to go but one step further back in history to find the causes to which these lakes owed their origin. The earliest reliable records that exist describe the Netherlands as “girt with forests.” “An extensive belt of woodland skirted the sea-coast, reaching beyond the mouths of the Rhine. The groves of Haarlem and the Hague are relics of this ancient forest. The Badahna wood, horrid with Druidic sacrifices, extended along the eastern line of the vanished lake of Flevo. The vast Hercynian forest, nine days’ journey in breadth, closed in the country on the German side, stretching from the banks of the Rhine to the remote regions of the Dacians in such vague immensity that no German, after travelling sixty days, had ever reached, or even heard of, its commencement. On the south the famous groves of Ardennase, haunted by Faun and Satyr, embowered the country, and separated it from Celtic Gaul.” In the lapse of ages these forests became overgrown: the soil, rotten with fallen trunks and layers of fallen leaves, no longer afforded to the roots of oaks the firm support necessary for enabling them to brave the fearful hurricanes that swept over the land, and thus amidst succeeding storms and inundations these forests gradually disappeared, until now almost the only trace remaining of them is to be found in the vast peat fields that cover, more or less, the whole Kingdom of the Netherlands.

Extraction of Peat.—The use of this substance for fuel was known to the ancient Belgæ, whom Tacitus describes with pity as a people compelled to burn their ground for want of wood, and Pliny with admiration as a people who fished for fuel, with which, when dried by the wind rather than by the sun, they warmed their bodies benumbed with cold (“*rigentia septentrione viscera sua urunt*”). Thus the extraction of turf for fuel in Holland dates from the earliest times, though it was not until 1215 that the peasants of Friesland learnt to turn this gift of nature to the best account by chemical preparation. From that period till the present day, the consumption of turf in the Netherlands has kept pace with the increase of the population. In 1834 the annual consumption was 22,275,623 tons, and in 1852 this had increased to 33,943,630 tons. These figures are of interest when compared with the consumption of coal in the Netherlands, as showing that peat still holds its own for purposes of fuel, that notwithstanding the great quantities of coal now imported for manufacturing and domestic purposes the demand for peat is constantly increasing, and that this traffic is fifty times as active and extensive to-day as that in coke and coal put together.

The Government has, therefore, been compelled to step in to stay

the wholesale destruction of the Netherlands by fire, and the consent of the Waterstaat is now necessary before a proprietor may reduce the level of his land by cutting it up into bricks of fuel for the market.

There does not exist the shadow of a doubt that nine-tenths of the polders now drained and cultivated were once bogs and mosses, such as exist in Ireland and in Scotland, but for the most part situated so low that, the layers of turf removed, they rapidly became lakes, which irruptions of the inner waters often converted into inland seas. Then came the prevalent gales, heaping up the outer waters, as they often do in the course of a fortnight, ten and twelve feet above the highest spring tides known, the narrow rotten causeways protecting these inland seas would be swept away, and the result is visible to-day in the Zuyder Zee, the Lake of Haarlem, and the thousand other polders whose origin may be traced to early ignorance of water engineering, and the use of turf as fuel from a date antecedent to the Christian era.

Fertility of Exhausted Turbaries.—It must also be remembered that, besides the immediate profit to be derived from selling paternal acres by the square inch, the landlord might anticipate a more lasting gain from the fact that the removal of the layer of turf frequently exposed rich alluvial lands, which, when dyked and converted into polders, produced crops of potatoes, rye, clover, and buckwheat in rapid rotation; and this hope, though not always realized, has proved a great incentive to the excavation of peat.

In general, bogs or turbaries are known in Holland as “*hooge*” or “*lage veenen*,” that is, situated above or below the level of the waters. The former are naturally the most easily worked, as they may be cut out with a spade at discretion; while the latter require preliminary dyking and draining to let off the water before the fuel can be dug and prepared.

Historical Anecdotes.—Peat has played a part in Holland second to no other produce of that country; and the Dutch relate with pride that it has had its patriotic as well as its material uses. Their history contains two episodes in support of this assertion. The first occurred in 1593, when the Spaniards had with great difficulty constructed a chaussée to traverse some bog lands. This passage the Dutch had made impracticable for cavalry and artillery by felling trees and laying them across. Of this timber the Spaniards made a bonfire, which communicated to the causeway and surrounding turbaries, compelling the Spaniards to beat a hasty retreat, and thus raising the siege of some important fortresses. On hearing of this disaster, Philip II. is reported to have ordered that, “since Holland was combustible, it should be burned to ashes.”

The second story is as follows: “The impregnable town of Breda was occupied by the Spaniards and besieged by the patriots. Winter approached, and one evening a huge canal-boat appeared at one of the water-gates of the city laden with peat. The boat was joyfully admitted by the Spaniards as relieving one of their most pressing wants; the discharge of cargo was postponed till daybreak, but before midnight had tolled the boat-load of turf had proved itself a second

Trojan Horse, from whence eighty armed men issued, overcame the guard at one of the gates, and admitted the valiant Prince Maurice at the head of his army.

These services, besides its properties of giving out heat and light, its ashes affording rich manure, its soot being valuable for cleaning pots and pans, and its smoke for preserving fish and meat, have endeared turf to the heart of every peasant as an article of primary importance to the domestic comfort of his daily life.

The three northern provinces of Friesland, Drenthe, and Groningen, indubitably owe most of their well-being to their wealth in peat. There the proprietor of the soil, after exhausting one layer of turf, and reaping splendid crops without manure from the alluvial soil laid bare, often after awhile removes the alluvial soil to some neighbouring sandy waste, discovering under it fresh layers of peat, and still more alluvial soil. The depth to which cultivation is thus carried by successive removals of peat and soil often exceeds twenty feet; and no truthful estimate can be formed of the original face of nature by the study of the present features of a Netherland's landscape.

Floating Turbaries.—In the three provinces above-named, but especially in Overijssel, one last phenomenon occurs which calls for some remark. This is the existence, now rare however, on the borders of large lakes, of floating turbaries, bits of which may be cut off in strips, according to the width of the canals they have to traverse, and floated down to market. Many legends are told of the embarrassments these floating turbaries have caused. Many a farmer has been compelled to tether his fields to prevent their floating away; and when desirable to keep flocks and herds separate, these fields have been pushed off from the shore, and anchored at a distance. Then perhaps a storm has suddenly arisen, the fields have dragged their anchors, and floated out to sea.

Such incidents are now of rare occurrence, but it would not be difficult to make a collection of well authenticated tales of a similar description that would strike astonishment into the sober minds of English husbandmen, as tending to convert the laborious and practical profession of a farmer into a life of fable and excitement.

Having now examined briefly in their varied shapes the defences by which Nature and the hand of man have made the Netherlands sufficiently watertight for the support of life, it is time to inquire what is the truth respecting the much vaunted lines of Utrecht and the Yssel, to which the Dutch trust for protection against the aggressions of their fellow-men.

Lines of the Utrecht and the Yssel.—One glance at the map is, however, unfortunately sufficient to show that the confidence which familiarity with the practical meaning of the word "inundation" has engendered in the liberty loving Dutch, appears to be somewhat overweening and of but partial application. For of the eleven provinces constituting the Kingdom of the Netherlands, three only, viz., North Holland, South Holland, and Utrecht lend themselves to this defence. In other words, of the 12,623 square miles and 3,600,000 souls

included in the Netherlands, only 2,666 square miles, and 1,412,000 souls, could under the most favourable circumstances be protected within the lines of practicable defence by flooding.

In the important category of favourable conditions for flooding these lines, moreover, the state of the ungovernable elements largely enters; and although history teaches that in former times these have often been of incalculable service to the Dutch when defending themselves against the relentless Alva or the chivalrous Alexander Farnese, yet it must be remembered that the dilatory warfare of that date is incomparable to the celerity with which the Seven Days' War has made the world familiar.

To the lines of Utrecht and the Yssel no great mystery attaches. They are visible to the eye of any engineer travelling through the country. There has been a great abstraction of peat, and the level of the land is in consequence extremely low. Direct communication with the Zuyder Zee, with the German Ocean, and with the minor waters of the Old and New Rhine, and Maas, the Waal, the Leek, and the Yssel would appear at first sight to offer an abundant, if not inexhaustible, supply of water; but so great are the existing precautions against inundation from these very waters, that it is calculated a week would be required by the Waterstaat to cut the dykes and remove the obstacles to their free entry. Further, even supposing the invaders had permitted this work to be accomplished in the specified time, a low level of the inner waters and prevailing easterly winds might indefinitely delay the fair accomplishment of the scheme.

In addition to the great strategic lines above mentioned, almost every Dutch fortress has a local flooding system of its own; but a kingdom containing, according to the last census, but 1,748,163 males, men and boys, cannot, in the presence of the large standing continental armies of to-day, even undertake to defend too long a line of frontier. This is the argument that has prompted the decision recently taken, of which no secret has been made, to raze the frontier fortresses, and, in case of need, to concentrate the whole resources of the country for the defence of Holland Proper, whose absolute independence is so dear to every Dutchman.

NOTES DURING A VOYAGE BETWEEN ENGLAND AND THE BLACK SEA.

A SHIP steering for Cape Bon from the westward through the inner Skerki channel towards nightfall, will sight the Island of Zembra, and be in danger of mistaking this for the Cape, on account of its height not being mentioned in the "sailing directions;" an omission and neglect, which has led to vessels hauling into the Bay of Tunis at

night, under the impression that they had cleared Cape Bon, and had a clear sea to go south of Pantelleria. This occurred to a ship while we were off the coast, and was a narrow escape from disaster.

The error is to be avoided by remembering that the Island of Zembra is *high*, and when approached from the westward is seen long before Cape Bon comes into sight.

Compilers of "Sailing Directions" would do well to bear in mind that they cannot be *too particular* in their directions, for it frequently happens that an apparently *trivial* remark enables a captain of a ship to determine his position in a moment of danger, and so enables him to avoid disaster.

2.—The advantage of going *south* of Pantelleria Island especially in the night, is that all is clear there, so that if the wind falls light or comes from the eastward, which is sometimes experienced, after clearing Cape Bon, you are not near any danger as in the passage to the north. The small Island "Linosa," south of Pantelleria is not so small as it appears on the chart, and here again its speciality of a hummock near each extreme which makes it look like *two islets* where the connecting low land is below the horizon, might be usefully noticed in the sailing directions; for how often before thick weather or before nightfall does the safety of a vessel depend upon a single hasty, but *well identified* spot to which to refer to for fixing her position.

There appears an advantage in going *south* of the Maltese Islands, from the circumstance of the S.E. winds being the most severe in the Mediterranean, a ship is more to windward.

3.—Ships from the westward approaching the Archipelago at night, if they lay to until daylight, which is advisable if it be dark or thick weather, may enter any one of the three channels off which they happen to be in the morning; for the determination to enter by any particular channel often leads to loss of time. During the time we were in the Archipelago (early part of January) the current set steadily to the south at a rate of about twenty miles a day; and off the Island of Georgio, where a boat was lowered to try the rate and direction of the current, it was found to be southerly one and a quarter knots.

Kanavi "Island," as it is called in the book of directions, is nothing more than a small bare rock, and it would be better that it should be called so, or a rocky islet, as ships at night would be looking out for what is not to be seen—an *island*.

4.—Bound for the Dardanelles, I prefer the passage outside of Tenedos, and if the wind be northerly, it is certainly better to beat up close to Imbros, and steer from that island, keeping the entrance of the Dardanelles on the *lee bow*, so as to enter *close* to Cape Hellas, thereby avoiding the *strength* of the current, and getting into *anchorage* ready for a change of wind. I don't think any trouble should be felt at anchoring in thirty or thirty-five fathoms, and I am persuaded that much time is lost, and unnecessary anxiety incurred by allowing ships to drift, and beat about when they might be safe at anchor, and in the way to take advantage of the first shift of wind.

The morning after we reached Cape Hellas the wind changed to the westward after having blown from contrary quarters for forty days, and the consequence was that we found ourselves sailing through the Dardanelles with an immense fleet of wind-bound vessels of all sizes, descriptions, and nations, not less in number than six hundred, and as the day was fine it was an interesting and beautiful sight.

5.—Ships steering from off Marmora Island for Constantinople in the night, are almost sure to find themselves to the southward of their course, probably among the Prince's Islands, on account of the current from the Bosphorus taking them on the *port bow*; this is to be avoided by steering for the land after clearing the Marmora channel, and coasting along at a distance of a league or a league and a half from the shore until they draw in closer as they approach the Golden Horn.

6.—The common opinion that the current never *sets up* the Bosphorus is erroneous, for while we were anchored between Constantinople and Scutari, the whole of the ships in the stream swung round to a current from the Sea of Marmora, which set up the Bosphorus at a rate of not less than *three knots*; a rare and interesting phenomenon, the cause of which I was unable to discover, and probably reaching down to no greater depth than three or four fathoms, while below that would be the perennial current running *down* the Bosphorus from the Black Sea.

There are few great Historical Places about which more has been said and sung than about Constantinople, and there is not on the earth perhaps a more magnificent site for an Imperial City; yet what is the impression it makes on the traveller, different from what he experiences in any other great Eastern city, unless it is that the dark contrast of splendour and squalor is in this city of the Sultan more darkly contrasted than in others. Is it not better that the *Crescent* should have ceased to be the true symbol of such an empire. "No longer a Crescent but a waning Moon," is written upon everything Turkish, and as it seems upon everything Eastern; and it is impossible not to be struck in the present day with the fact of how many *grand names* have become unreal, and amongst them especially and particularly "The Sublime Porte."

There is one sight to be seen in Constantinople not to be forgotten by the few who may chance to have had their eyes directed to the spot. This is in St. Sophia's, high up arching over what was once the Sanctuary, is to be still dimly seen, after all the many centuries and changes which have passed over the world—A FIGURE OF THE SAVIOUR with His arms outstretched in the act of blessing. This is very remarkable after the lapse of so many ages of Mahomedan possession, and may not be without some significance.

W. C. P.

A VISION OF MAUNA LOA.

IN our two last numbers will be found some highly interesting particulars of the great volcano of the Sandwich Islands, the principal one indeed of our globe. A little chart and also a view in our last number will contribute, not only to illustrate its locality, but also to show the enormous scale on which its eruptions have from time to time been going forward. We have now preserved, for adding to our account, one of those dreamy narratives in which celebrated writers indulge at times, from the pen of an American gentleman of writing celebrity, named "Sam Clements," who used the sobriquet of "Mark Twain," with which we shall conclude our present account of that very celebrated volcano; gathered from the columns of the *Commercial Advertiser* of Owhyhee. It is dated:—

VOLCANO HOUSE, CRATER OF "KILAUEA," Sandwich Islands, April 1, 1866.—All day long I have sat apart and pondered over the mysterious occurrences of last night. * * * * There is no link lacking in the chain of incidents—my memory presents each in its proper order with perfect distinctness, but still—

However, never mind these reflections—I will drop them and proceed to make a simple statement of the facts.

Towards eleven o'clock, it was suggested that the character of the night was peculiarly suited to viewing the mightiest active volcano on the earth's surface in its most impressive sublimity. There was no light of moon or star in the inky heavens to mar the effect of the crater's gorgeous pyrotechnics.

In due time I stood, with my companion, on the wall of the vast cauldron which the natives, ages ago, named *Hale mau mau*—the abyss wherein they were wont to throw the remains of their chiefs, to the end that vulgar feet might never tread above them. We stood there, at dead of night, a mile above the level of the sea, and looked down a thousand feet upon a boiling, surging, roaring ocean of fire!—shaded our eyes from the blinding glare, and gazed far away over the crimson waves with a vague notion that a supernatural fleet, manned by demons and freighted with the damned, might presently sail up out of the remote distance; started when tremendous thunder-bursts shook the earth, and followed with fascinated eyes the grand jets of molten lava that sprang high up towards the zenith and exploded in a world of fiery spray that lit up the sombre heavens with an infernal splendour.

"What is your little bonfire of Vesuvius to this?"

My ejaculation roused my companion from his reverie, and we fell into a conversation appropriate to the occasion and the surroundings. We came at last to speak of the ancient custom of casting the bodies of dead chieftains into this fearful cauldron, and my comrade, who is of the blood royal, mentioned that the founder of his race, old King Kamehameha the First—that invincible old pagan Alexander—had found other sepulture than the burning depths of the *Hale mau mau*. I grew interested at once; I knew that the mystery of what became

of the corpse of the warrior King had never been fathomed; I was aware that there was a legend connected with this matter, and I felt as if there could be no more fitting time to listen to it than the present. The descendant of Kamehameha said:

“The dead king was brought in royal state down the long, winding road that descends from the rim of the crater to the scorched and chasm-riven plain that lies between the *Hale mau mau* and those beetling walls yonder in the distance. The guards were set and the troupes of mourners began the weird wail for the departed. In the middle of the night came a sound of innumerable voices in the air, and the rush of invisible wings; the funeral torches wavered, burned blue, and went out! The mourners and watchers fell to the ground paralyzed by fright, and many minutes elapsed before any one dared to move or speak, for they believed that the phantom messengers of the dread Goddess of Fire had been in their midst. When at last a torch was lighted, the bier was vacant—the dead monarch had been spirited away! Consternation seized upon all, and they fled out of the crater. When day dawned, the multitude returned, and began the search for the corpse. But not a footprint, not a sign, was ever found. Day after day the search was continued, and every cave in the great walls, and every chasm in the plain, for miles around, was examined, but all to no purpose—and from that day to this the resting place of the lion king's bones is an unsolved mystery. But years afterward, when the grim prophetess Wiahowakawaka lay on her deathbed, the goddess *Pele* appeared to her in a vision and told her that eventually the secret would be revealed, and in a remarkable manner, but not until the great *Kauhuhu*, the Shark God, should desert the sacred cavern *Ana Puhi*, in the Island of Molokai, and the waters of the sea should no more visit it, and its floor should become dry. Ever since that time, the simple, confiding natives have watched for the sign. And now, after many and many a summer has come and gone, and they who were in the flower of youth then have waxed old and died, the day is at hand! The great Shark God has deserted the *Ana Puhi*: a month ago, for the first time within the records of the ancient legends, the waters of the sea ceased to flow into the cavern, and its stony pavement is become dry! As you may easily believe, the news of this event spread like wildfire through the islands, and now the natives are looking every hour for the miracle, which is to unveil the mystery, and reveal the secret grave of the dead hero.”

After I had gone to bed, I got to thinking of the volcanic magnificence we had witnessed, and could not go to sleep. I hunted up a book and concluded to pass the time in reading. The first chapter I came upon related several instances of remarkable revelations made to men through the agency of dreams—of roads and houses, trees, fences and all manner of landmarks, shown in visions and recognized afterwards in waking, and which served to point the way to some dark mystery or other.

At length I fell asleep, and dreamed that I was abroad in the great

plain that skirts the *Hala mau mau*. I stood in a sort of twilight which softened the outlines of surrounding objects, but still left them tolerably distinct. A gaunt, muffled figure stepped out of the shadow of a rude column of lava, and moved away with a slow and measured step, beckoning me to follow. I did so. I marched down, down, down, hundreds of feet, upon a narrow trail which wound its tortuous course through piles and pyramids of seamed and blackened lava, and under over-hanging masses of sulphur formed by the artist-hand of Nature into an infinitude of fanciful shapes. The thought crossed my mind that possibly my phantom guide might lead me down among the bowels of the crater, and then disappear and leave me to grope my way through its mazes, and work out my deliverance as best I might, and so, with an eye to such a contingency, I picked up a stone, and "blazed" my course by breaking off a projecting corner, occasionally, from lava walls and festoons of sulphur. Finally we turned into a cleft in the crater's side, and pursued our way through its intricate windings for many a fathom down toward the home of the subterranean fires, our course lighted all the while by a ruddy glow which filtered up through innumerable cracks and crevices, and which afforded me occasional glimpses of the flood of molten fire boiling and hissing in the profound depths beneath us. The heat was intense, and the sulphurous atmosphere suffocating, but I toiled on in the footsteps of my stately guide, and uttered no complaint. At last we came to a sort of rugged chamber whose sombre and blistered walls spake with mute eloquence of some fiery tempest that had spent its fury here in a bygone age. The spectre pointed to a great boulder at the farther extremity—stood and pointed silent and motionless, for a few fleeting moments and then disappeared! "The grave of the last Kamehameha!" The words swept mournfully by, from unknown source, and died away in the distant corridors of my prison-house, and I was alone in the bowels of the earth, in the home of desolation, in the presence of death!

My frightened impulse was to fly, but a stronger impulse arrested me and impelled me to approach the massive boulder the spectre had pointed at. With hesitating step I went forward and stood beside it—nothing there; I grew bolder and walked around and about, peering shrewdly into the shadowy half light that surrounded it—still nothing. I paused to consider what to do next. While I stood irresolute, I chanced to brush the ponderous stone with my elbow, and lo! it vibrated to my touch! I would as soon have thought of starting a kiln of bricks with my feeble hand. My curiosity was excited. I bore against the boulder, and it still yielded—I gave a sudden push with my whole strength, and it toppled from its foundation with a crash that sent the echoes thundering down the avenue and passages of the dismal cavern! And there, in a shallow excavation over which it had rested, lay the crumbling skeleton of King Kamehameha the Great, thus sepulchered in long years, by supernatural hands! The bones could be none other, for with them lay the rare and priceless crown of *pulamalama* coral, sacred to royalty, and *tabu* to all else beside. A hollow human groan issued out of the—

I woke up. How glad I was to know it was all a dream! "This comes of listening to the legend of the noble lord—of reading of those lying dream revelations—of allowing myself to be carried away by the wild beauty of old *Kilauea* at midnight—of gorging too much pork and beans for supper!" And so I turned over, and fell asleep again. And dreamed the same dream precisely as before: followed the phantom—"blazed" my course—arrived at the grim chamber—heard the sad spirit voice—overturned the massy stone—beheld the regal crown and decaying bones of the great king!

I woke up, and reflected long upon the curious and singularly vivid dream, and finally muttered to myself, "This—this is becoming serious!"

I fell asleep again, and again I dreamed the same dream, without a single variation! I slept no more, but tossed restlessly in bed, and longed for daylight. And when it came I wandered forth, and descended to the wide plain in the crater. I said to myself, "I am not superstitious, but if there is anything in that dying woman's prophecy, I am the instrument appointed to uncurtain this ancient mystery." As I walked along, I even half expected to see my solemn guide step out from some nook in the lofty wall, and beckon me to come on. At last when I reached the place where I had first seen him in my dream, I recognized every surrounding object, and there, winding down among the blocks and fragments of lava, I saw the very trail I had traversed in my vision! I resolved to traverse it again, come what might. I wondered if, in my unreal journey, I had "blazed" my way, so that it would stand the test of stern reality; and thus wondering, a chill went to my heart when I came to the first stony projection I had broken off in my dream, and saw the fresh new fracture, and the dismembered fragment lying on the ground! My curiosity rose up, and banished all fear, and I hurried along as fast as the rugged road would allow me. I looked for my other "blazes," and found them; found the cleft in the wall; recognized all its turnings; walked in the light that ascended from the glowing furnaces visible far below; sweated in the close, hot, atmosphere, and breathed the sulphurous smoke—and at last I stood hundreds of feet beneath the peaks of *Kilauea* in the ruined chamber, and in the presence of the mysterious boulder!

"This is no dream," I said; this is a revelation from the realm of the supernatural; and it becomes not me to longer reason, conjecture, suspect, but blindly to obey the impulses given me by the unseen power that guides me."

I moved with slow and reverent step toward the stone and bore against it. It yielded perceptibly to the pressure. I brought my full weight and strength to bear, and surged against it. It yielded again, but I was so enfeebled by my toilsome journey that I could not overthrow it. I rested a little, and then raised an edge of the boulder by a strong, steady push, and placed a small stone under it to keep it from sinking back to its place. I rested again, and then repeated the process. Before long, I had added a third prop, and had got the edge

of the boulder considerably elevated. The labour and the close atmosphere together were so exhausting, however, that I was obliged to lie down, then, and recuperate my strength by a longer season of rest. And so, hour after hour I laboured, growing more and more weary, but still upheld by a fascination which I felt was infused into me by the invisible powers whose will I was working. At last I concentrated my strength in a final effort, and the stone rolled from its position.

I can never forget the overpowering sense of awe that sank down like a great darkness upon my spirit at that moment. After a solemn pause to prepare myself, with bowed form and uncovered head, I slowly turned my gaze till it rested upon the spot where the great stone had lain.

There wasn't any bones there.

* * * * *

I just said to myself, "Well, if this ain't the — infernalist swindle that ever I've come across yet, I wish I may never!"

And then I scratched out of there, and marched up here to the Volcano House, and got out my old raw-boned fool of a horse, "Oahu," and "lamed" him till he couldn't stand up without leaning against something.

You cannot bet anything on dreams.

MARK TWAIN.

We add in conclusion, the following interesting account of the crater of Kilauea by Count Strzelecki, who visited it in 1838, although it is but remotely connected with the shaft of the great crater of Mauna Loa, as it seems to convey an idea of the extraordinary magnitude of the whole volcano; Kilauea crater not overflowing, which is some thousand feet lower than that of Mauna Loa.

I cannot even attempt to give you the slightest idea of the impressions which the awful sublimity of the volcano produced upon my imagination; that part of our being does not yield as easily as memory—it does not reproduce sensations; the rapture—the enthusiasm once gone by, is lost for ever.

What I remember, and long shall recollect, as showing the mighty influence of mighty objects upon me, are the difficulties I had to struggle with, before my eye could be torn away from the idle, vacant but ecstatic gazing with which I regarded the great Whole, down to the analytical part of the wondrous and unparalleled scene before me; I say unparalleled, because having visited most of the European and American volcanoes, I find the greatest of them inferior to Kilauea crater, in intensity, grandeur, and extent of area.

The abrupt and precipitous cliff which forms the N.N.E. wall of the crater,—found, after my repeated observations, to be elevated 4,104 feet above the level of the sea—overhangs an area of 3,150,000 square yards of half-cooled scoria, sunk to the depth of 300 yards, and containing more than 328,000 square yards of convulsed torrents of earths in igneous fusion, and gaseous fluids constantly effervescing—boiling—spouting—rolling in all directions like waves of a disturbed sea,

violently beating the edge of the cauldrons like an infuriated surf, and like surf spreading all around its spray in the form of capillary glass which fills the air, and adheres in a flaky and pendulous form to the distorted and broken masses of the lava all around; five cauldrons, each of about 5,700 square yards, almost at the level of the great area, and containing only the twelfth part of the red liquid; the sixth cauldron is encircled by a wall of accumulated scoria of fifty yards high, forming the S.S.W. point—the *Hale mau mau* of the natives to which the bones of the former high chiefs were consigned—the sacrifices to the goddess Pele offered—the abyss of abysses, the cauldron of cauldrons—exhibiting the most frightful area of about 300,000 square yards, bubbling red hot lava—changing incessantly its level—sometimes rolling the long curled waves with broken masses of cooled crust to one side of the horrible laboratory—sometimes, as if they had made a mistake, turning them back with spouting fury, and a subterraneous, terrific noise of a sound more infernal than earthly; around the blocks of lava, scoria, slags of every description and combination, here elevated, by the endless number of superimposed layers, in perpendicular walls of one thousand feet high—there torn asunder, dispersed, cracked, or remoulded—everywhere, terror, convulsion—mighty engine of Nature—and nothingness of man!

Nowhere does the solution of the great problem of volcanic fires by Sir Humphrey Davy, receive a more palpable illustration than here; the access of the water to the ignited masses of these minerals of alkaline and earthly bases, by which that great philosopher explained the convulsions of volcanic fires, is displayed here in most portentous, most awful effects. It is only to those millions of vents all around the crater, through which the superabundance of steam escapes—to the millions of fissures through which the sulphurous and sulphuric acids liberate themselves from beneath, that the preservation of Hawaii from utter destruction, by the expansive force of steam and gases, can be ascribed.

The nature of the volcano, with its uncommonly intense heat, and so many wide and easy openings is, to eject nothing without alteration, and to sublime every variety of substance which the concomitants of the volcanic fires embrace. Thus: here are the rare volcanic fires in capillary forms, and many perfect vitrifications; the muriate of ammonia in efflorescence, often conchoidal, often in elongated hexahedrals—and in one single instance, even in that rare form of a cubic crystal; thus, the sulphuret of arsenic, both as realgar and orpiment, the sulphur itself in most beautiful incrustations, crystalized in cubic or truncated octahedrons; the petro aluminares of Ssolfa (Italy), or alkaline sulphate of alumine, imbedded sometimes in crevices of lava, sometimes in argilacious earth; thus, the singular and rare cavernous lava, known hitherto to exist only in Iceland—its large tumefactions in blisters and bubbles, form a crust of the finest gloss to an arch of four feet thick, forming caverns through which the superabundance of lava in the crater discharges itself, as through subterranean tunnels, in all directions of the island.

A prolific imagination can find here a vast field for fanciful speculation on the origin, duration, and probable or possible results of the continued operations of this frightful and gigantic volcano. Science will never tire in a study of Nature; but, alas! beyond what she sees, and what strict inductive forms allow her to conclude, she must stop, admire, bow and repeat,

“*Sapientia hujus mundi stultitia est.*”

GREENWICH HOSPITAL: *Its proper Use and Appropriation.*

[The following letter is so important that we lose no time in giving it notoriety; not only on the score of justice regarding the real purpose of Greenwich Hospital, but also on that of humanity towards our worn-out seamen, beyond all other objects proposed for its application.]

SIR,—You were so good in your June number as to give place to a very able article on the present state of Greenwich Hospital. With many others, I read it carefully, and with many admired the taste and *esprit de corps* of the writer in desiring to keep Greenwich Hospital from being entirely alienated from the Navy. Since that article appeared, facts have come to light which make me shrink from entirely falling in with the views of the writer in disposing of the building. He advocated, with much consistency and strength of argument, that, it should be appropriated as a barrack for Marines. With this proposition I quite accord, except on one alternative, that of its being possible to reinstate the building as a home for the aged and infirm sailor and marine. I hold it quite possible to do this. The facts to which I allude, are, the wretched, poverty-stricken condition of hundreds of the pensioners who left the comforts of the Hospital behind them in October, 1865. What was foreseen before by those who are acquainted with a sailor's habits, is now clear. *They are not capable of managing their own affairs in their old age.* Whether it is that from having been so much at sea they have never acquired the habits essential to the prudent management of a small pension, or whether it is that in money matters they are ignorant as well as reckless, it comes to the same thing; they are not capable of managing a pension in their old age—under these circumstances, to give them pensions to be squandered in distant parts of the country, out of funds which were contributed for the purpose of maintaining the aged sailor *inside* Greenwich Hospital, is a proceeding which ought to be discontinued. The principle itself of giving pensions to seamen and marines after servitude is well enough—it is unavoidable—but members of the House of Commons should be reminded that such pensions cannot equitably be taken from the funds of Greenwich Hospital. They should come out of the public purse, not out of the private, or rather naval property of Greenwich Hospital. This is a point which has been too

much ignored. It is a point which naval pens should have been more careful to keep before the mind of the country and the Admiralty. The funds of Greenwich Hospital can only, equitably be spent *inside the walls of the building*, of course for the good of the sailor and marine in their old age. I hope that the country will yet wake to the moral duty of conscientiously restoring these funds. Certainly the country must not be allowed to lie under the delusion that the pensions now enjoyed by sailors and marines come from the public purse. In giving these pensions, the country gives nothing. Greenwich Hospital gives them—gives them most unwillingly, while the building itself languishes for want of its legitimate inmates, and of the funds wherewith to maintain them in their ancient comfort.

To the Editor of the Nautical Magazine.

JUSTITIA.

[We trust that, on the grounds of their incapacity to take care of themselves when they most need it, the just claims of these veterans of the sea, even to be nursed in their declining age, will not be forgotten.—ED. N.M.]

THE THERMOMETER.

Table for reducing the Fahrenheit Scale into Centigrade and Réaumur,
 BY ROBERT C. CARRINGTON, F.R.G.S.,
Hydrographical Draughtsman of the Admiralty.

THE Thermometer (*ἰέρμωρ*, heat, *μέτρον*, a measure) was in use in the beginning of the seventeenth century, but it is not precisely known by whom it was invented. A physician of Padua named Santorio claims it for himself in his "Commentaries on Avicenna" (1626). Spirit was originally used, but mercury was first employed by Fahrenheit, of Amsterdam, in 1720, and his scale has been in use since 1724. He adopted this, as he supposed, erroneously, that 32° below the freezing point of water was the Zero, or greatest degree of cold.

Réaumur, a Frenchman (1683—1751), invented his thermometer in 1731; but the Centigrade (*Centum*, hundred, and *Gradus*, degree) has now superseded it to a great extent, and has been in use amongst philosophers for nearly seventy years. It is the invention of Celsius, a Swede, and only differs from Réaumur's by dividing the distance between the freezing and boiling points into one hundred parts, instead of eighty as in Réaumur's.

There are disadvantages in the scales of Réaumur and Centigrade, as the length of each degree is much greater than in Fahrenheit, and not so easily nor accurately read when the mercury is between the lines of division; and the temperatures requiring to be registered being often below the freezing of water, are always obliged to be expressed by negative signs.

The different scales are easily convertible by the following rules:—

Centigrade to Fahrenheit, multiply by 9, and divide by 5.

$$\frac{9}{5} \text{ C.} + 32^{\circ} = \text{F.}, \text{ or } 100^{\circ} \times \frac{\text{Cent.}}{9} \times 9 = 900 \div 5 = 180 + 32 = 212^{\circ} \text{ Faht.}$$

Réaumur to Fahrenheit, multiply by 9, and divide by 4.

$$\frac{9}{4} \text{ R.} + 32^{\circ} = \text{F.}, \text{ or } 80^{\circ} \times \frac{\text{Reaum.}}{9} \times 9 = 720 \div 4 = 180 + 32 = 212^{\circ} \text{ Faht.}$$

Fahrenheit to Centigrade, multiply by 5, and divide by 9.

$$(\text{F.} - 32^{\circ}) \frac{5}{9} = \text{C.}, \text{ or } 212^{\circ} - 32 = 180 \times 5 = 900 \div 9 = 100^{\circ} \text{ Cent.}$$

Fahrenheit to Réaumur, multiply by 4, and divide by 9.

$$(\text{F.} - 32^{\circ}) \frac{4}{9} = \text{R.}, \text{ or } 212^{\circ} - 32 = 180 \times 4 = 720 \div 9 = 80^{\circ} \text{ Réaum.}$$

Centigrade to Réaumur, multiply by 4, and divide by 5.

$$\frac{4}{5} \text{ C.} = \text{R.}, \text{ or } 100^{\circ} \times \frac{\text{Cent.}}{5} \times 4 = 400 \div 5 = 80^{\circ} \text{ Réaum.}$$

Réaumur to Centigrade, multiply by 5, and divide by 4.

$$\frac{5}{4} \text{ R.} = \text{C.}, \text{ or } 80^{\circ} \times \frac{\text{Reaum.}}{4} \times 5 = 400 \div 4 = 100^{\circ} \text{ Cent.}$$

Fahrenheit.	Centigrade.	Réaumur.	Fahrenheit.	Centigrade.	Réaumur.
212°	100°	80°	100°	37°·78	30°·22
205	96·11	76·89	95	35	28
200	93·33	74·67	90	32·22	25·78
195	90·56	72·44	85	29·44	23·56
190	87·78	70·22	80	26·67	21·33
185	85	68	75	23·89	19·11
180	82·22	65·78	70	21·11	16·89
175	79·44	63·56	65	18·33	14·67
170	76·67	61·33	60	15·56	12·44
165	73·89	59·11	55	12·78	10·22
160	71·11	56·89	50	10	8
155	68·33	54·67	45	7·22	5·78
150	65·56	52·44	40	4·44	3·56
145	62·78	50·22	35	1·67	1·33
140	60	48	32	0	0
135	57·22	45·78	30	—1·11	—0·89
130	54·44	43·56	25	—3·89	—3·11
125	51·67	41·33	20	—6·67	—5·33
120	48·89	39·11	15	—9·44	—7·56
115	46·11	36·89	10	—12·22	—9·78
110	43·33	34·67	5	—15	—12
105	40·56	32·44	0	—17·78	—14·22

THE FIRST TRIP UP THE PARA RIVER BY ONE OF H.M. SHIPS.

[A SKETCH of the first trip made up the Para River by an English ship of war must be interesting in itself. The following extract of a letter containing the account of a visit to the town of Cameta on that river, by H.M.S. *Sharpshooter* in August last, is by an officer who will no doubt make good some of the deficiencies in the charts of which he complains. But his brief directions for that navigation seem to be sufficient to secure safety, and will no doubt be found useful to the trade, which will quickly follow up the river as far as he went.—*ED. N.M.*]

Para, August 7th.

As I know you would like to have an account of the cruise of the first English ship above Para, I send you the following brief notes. On arriving here (20th July) I visited the Admiral (who is also the President of the Province), and asked him whether English ships of war would be allowed to pass up the Amazon after the 7th September. His reply was that on application from the Captain of the ship to him, not only would the request be granted, but every assistance allowed her. He also gave me leave to go to Cameta, a large town about thirty miles up the Tocantins River, one of the large confluent of the Amazon, and about sixteen hundred miles long, and one hundred from the anchorage. So accordingly we started on the 29th July on our voyage in charge of a pilot, lent by the Amazon Commanding Officer, and gained the South entrance to the Amazon, entering by the channel between the islands Ariparanga and Contejouba. By keeping close to the latter, we carried four fathoms, where our chart gives only one and a half; but the banks are constantly altering. The river here is thirty miles broad, and very deep up to the entrance of the River Tocantins, where we anchored for the night in a snug place inside some islands. We all landed to shoot, but found no game, nor even alligators; only one large water snake that the gig's crew attacked and killed with their knives.

On my return to the ship at about eight p.m., I was surprised to hear that one of our engineer officers with a ship's boy had landed in a canoe and were not yet returned. It was satisfactory to know that the people were very friendly, yet I immediately sent a boat with the second master in charge to search, and although they did search the beach for five miles, and the creek near us, they returned at midnight unsuccessful. The next morning I sent a boat in two directions for five miles, and went up the creeks myself with the doctor, but although we found villages and houses nearly every quarter of a mile, and the Indians very anxious to assist us, and also the head men (Brazilians) inducing the natives to search, yet we could gain no news of our lost pair. So at eleven a.m., I returned to the ship, and leaving the cutter with three days' provisions and the authority to make the offer of fifty mil reis to the natives as a reward for finding them, I steamed up the river searching the banks as we went. It was flood tide when they were last seen.

On arriving at Cameta, the police authorities immediately sent canoes to search, and orders to all the villages to do the same, and happily on the morning of August 1st, the boy was found naked on an island ten miles from where he had been capsized with the canoe. He was fed, clothed, and sent to the ship. His account was that they tried to land on the main shore, but not succeeding, attempted to reach an island at some distance from the shore, but the breeze freshening, the canoe was capsized.

Believing that they were drifting out into the Amazon, they stripped for a swim, shook hands, and struck out for an island, having agreed to hail each other occasionally, when at last the boy says he got no answer.

We immediately sent another cutter and the gig to search near where the boy was found, and I went myself in a small steamer, which we had repaired, but was again unsuccessful. However, on our return, I had the satisfaction to learn that my man had been picked up by a canoe belonging to a village forty miles away, so there I despatched a boat for him.

It is really almost difficult to speak too highly of the promptitude and energy shewn by the Delgado and all the authorities at Cameta in trying to recover this officer. The behaviour of the boats with the natives was admirable, and there appeared a determination to find the wanderers at all risks, if they proved above water. The search was continued constantly for five days.

The navigation of the Tocantins is difficult on account of the number of islands in it, and the absence of charts. A good mode of proceeding is to enter the river between the second and third islands on the eastern bank, then keep along that shore for eighteen miles in not less than six fathoms, then steer S.W. across the river to Cameta, where there is a good anchorage off the town in eight fathoms water at about a cable from it. The tide rises nine feet, and runs two and a half knots. The town is situated on the highest ground near, about twenty feet above water, on a rich, red clayish soil. At this time of year, though very hot, it was considered very dry and healthy. The chief cultivation is the Cacao, which grows nearly wild, and the rubber tree or catchouc quite wild. The population of the town is 3000, the greater number Indian—though many Brazilians and Portuguese. The district has 25,000 free and 5000 slaves. The police control is the most perfect I have seen. Every resident is compelled to send his children to school, under a heavy fine. At every small village there is a church with school attached, and a government schoolmaster. The Indians also appear perfectly civilized and very hospitable. Their features remind me very much of the Chinese. The country is low and thickly wooded like all tropical places, and cut up by a perfect network of creeks and rivers. This unfortunate accident has been the cause of our learning more of the country in one week than we otherwise should in six. The exports are chiefly Cacao and rubber, £22,400; imports £6,200.

In a few years there seems no reason why this should not be a

rising place, as the passage from the Tijoca Channel at the entrance is direct, and there is abundant facility everywhere for building wharves for large vessels. At present, however, the large government subsidy to the Amazon Company must keep down all opposition. On the 2nd of August, all of the authorities and families visited the ship and were treated with some practice from our heavy guns, and in the evening the scene was changed to a ball room, with convivial toasts, etc. On the 3rd, a return ball was given to us, which was kept up with great spirit, and at daylight we steamed away to Para. Here we were visited by the President, for whom we manned yards and received him with due salutation. He has been in England, and looks more like an Englishman than Brazilian. On the 8th, our cutter came back in the middle watch after a pull of sixty miles through the inland passages, and reports very favourably of the natives, but without the officer they were in search of, as he was forwarded on here in a schooner, so I hope to see him in a day or two. We shall then go to Maranham, Ceara, Parahyba, Bahia, and Rio. The tides here are very regular at this time of year, rise and fall about nine feet, and strength two and a half knots.

The surveying authorities tell me that the main channel of the Amazon, north of Cape Magoari, is only used by coasters, as it is so imperfectly known, not yet surveyed, and the western entrance is too dangerous on account of the Bore.

They have placed two buoys at the entrance of the Tijoca Channel and will have a Light vessel placed in a few months. We found little difficulty in entering without a pilot, except on account of the strong current which sweeps across the Braganza Bank, at three a.m.

ROYAL NATIONAL LIFEBOAT INSTITUTION.

A meeting of this Institution was held on Thursday, September 5th, at its house, John-street, Adelphi, THOMAS CHAPMAN, Esq., F.R.S., V.P., in the chair. There were also present Sir Edward Perrott, Bart., W. H. Harton, Esq., the Right Hon. Stephen Cave, M.P., George Lyall, Esq., Colonel Palmer, and John Griffith, Esq. The minutes of the previous meeting having been read, a reward of £6 8s. was voted to pay the expenses of the Institution's lifeboat, *Civil Service*, stationed at Wexford, Ireland, in putting off on the 17th August in reply to signals of distress, while it was blowing hard from the W.S.W., and saving, after much difficulty, the crew of four men of the smack, Robert Hudson, of Arklow, which, while making for Wexford with a cargo of fish, had stranded on the south end of the Dogger Bank. This lifeboat has already saved forty lives from different shipwrecks.

The silver medal of the Institution and a copy of its vote on parchment were ordered to be presented to the Hon. Auberon Herbert,

for putting off in the Cromer lifeboat of the Institution, when it was short-handed, on the 26th July last, with the view of rescuing the crew of a vessel which was wrecked near that place in a gale of wind and very heavy sea. The shipwrecked men had, however, been rescued by means of the rocket apparatus before the arrival of the lifeboat.

The second service Clasp of the Institution was also voted to Mr. William Cubitt, of Bacton Abbey, Norfolk, the local hon. secretary of the National Lifeboat Institution, for his gallantry on a recent occasion in saving life on the Norfolk coast. A reward of £6 was also granted to five pilots, who had put off in a shore-boat, and had saved two out of eight persons whose boat had capsized on the Herd Sand, at the mouth of the Tyne, in a heavy sea, on the 28th of July last. A reward of £12 was also given to twelve men for putting off, and assisting to save the lives of some of the passengers and crew of the steamer, *Rose of Glasgow*, which during a strong gale had become a total wreck in Brown's Bay, Ireland, on the 16th July. A reward of £2 10s. was likewise granted to four men for going out in a small boat in a strong wind and heavy sea on the 6th August, and saving the lives of two out of five persons whose boat had capsized on Aberystwith Bar. Various other rewards were also granted to the crews of shore-boats for putting off during recent gales, and assisting to save life from wrecks on our coasts. A vote of condolence was ordered to be presented to his Grace the President, on the occasion of the death of his venerable father, the late Duke of Northumberland.

It was reported that the Institution had recently sent new lifeboats to Stromness (Orkneys), Broughty Ferry (Dundee), and Hunstanton (Norfolk). The railway and steam packet companies had as usual kindly conveyed the boats free of charge to their destinations. A grand demonstration had taken place on September 4th, at Hunstanton, with that boat, which is the gift to the Institution of the Licensed Victuallers of England. A most imposing demonstration had also taken place at Falmouth on the 29th August, at the inauguration of the *City of Gloucester* lifeboat on that station. It was decided to form a new lifeboat station at Portrane, on the Irish coast. Mrs. Burgess, of St. John's-wood, had decided to defray the cost, amounting to £420, of the lifeboat and carriage about to be sent by the Institution to Stonehaven, N.B., in memory of her late husband. During the past month a legacy of £540 had been received from the executors of the late Miss Ellen Goodman, of Eversholt, to pay for a lifeboat, carriage, and gear. Also, an additional moiety of £31 12s. from the pure personal estate of the late Miss Martha Bebb, of Bootham, York. Payments amounting to upwards of £2,000 were ordered to be made on various lifeboat establishments. A communication was read from the Chevalier Hebler, the Prussian Consul General, expressing the thanks of his Government for the information that had been afforded him relative to the working of the lifeboat system on the shores of the British Isles. Reports were read from the inspector and assistant-inspector of lifeboats to the Society on their recent visits to some of its lifeboat stations on the coast. The proceedings then terminated.

NEW BOOKS.

THE SAILOR'S WORD-BOOK. *An Alphabetical Digest of Nautical Terms, etc.* By the late Admiral W. H. Smyth, K.S.F., etc. Blackie, London.

THE literary labours of the late Admiral William Henry Smyth seem to have occupied those numerous small intervals of time left from the more important pursuits of a professional kind, as well as those of a purely astronomical nature, to which his natural taste led him. Professional usefulness in his day was evidently his leading star, and we have here in his "*Sailor's Word-Book*," one of those results of his persevering endeavours in a branch of nautical literature which has been too much neglected. What other literary pursuit is there of nearly universal application that has not received attention?—but the Sailor's vocabulary is left in its primitive condition, and he is allowed to run riot without that literary guidance, extended to other branches of knowledge; but which he so much requires to rule his expressions and to serve as a text-book for his orthography.

No one understood this better than the author of the "*Word-Book*,"—how completely "*Jack*" was adrift for the authority for his lingo—how much it required looking after and being kept in order—no one we say knew this better than the Admiral, and he found time to assist in rectifying the matter.

Assuredly a "*Word-Book*" for seamen was no light undertaking. When it is considered that their nautical expressions, or shall we say the accepted names by which the numerous component parts of their dwelling place is known, expressions of diverse origin as the English language itself, that the names of all these, and also of that (to an inexperienced eye) interminable maze of rigging belonging to it, all owing their origin to different languages;—to produce a book that shall be the accepted text-book of their etymology and orthography. Such a task, we say, was one of no ordinary kind, requiring not only the research of the scholar, but the attainments of as many learned heads as he could bring to his assistance. And how much such a book was wanted may be inferred from the fact that the present work left us by Admiral Smyth stands alone.

There is a very common expression among sailors, appearing perpetually in their journals which are yet disfigured by its use in the simple word "*way*"—too commonly written "*weigh*." The anchor is *weighed*: but its weight is never needed, except possibly in the warrant-officer's store book, who happens to have charge of it. Again, when the ship is "*got under weigh*" there is the same term sometimes written "*way*;" but from the absence of all authority for reference, the former mode of expression, absurd as it is, beats the other and becomes the accepted one, although neither the ship nor the anchor has undergone the operation of being "*weighed*!" whenever this occurs.

The English language has been justly admired for its terseness and

beauty of expression; and it would be no stretch of eulogy to say, that the seaman's language although perhaps but a rough copy of it, is no less remarkable for terseness, good application as well as derivation. A language that has to deal with the sails and rigging of a ship must necessarily be brief, at once intelligible, and distinct;—for operations with those important adjuncts of a ship should, if possible, be as smart and sudden as the squall of wind itself. Time in fact should be reduced to its very minimum in the shortening, if not in the making of sail, because the safety of that sail, the mast, aye, and of the ship herself, may depend on that sail being instantly taken in. Every seaman knows this full well, and how often it happens that when such is not done the ship is dismasted, or thrown on her beam ends to get up again if she can. The old adage that "Time and tide for none abide," belongs to sailors, and only they know the full value of it. Hence the terseness of their expressions which we have somewhere heard was the admiration of the first Emperor of the French, who is represented to have been peculiarly struck by it and its facility of command in comparison with the wordy orders required by the French marine.

We remember fitting out nearly half a century ago, when the spritsail-yard was condemned and "whiskers" adopted in its stead. Some few years afterwards we were applied to by a learned French lexicographer, to tell him what was meant by a ship's "whiskers"! He knew our language; he knew every word in our maritime dictionaries, but not one of them could afford the information he wanted. He had come to the right person certainly, for ours was about the first ship supplied from the dockyard with these unfeminine appendages to Jack's favourite lass, and we had the gratification of at once unravelling the mystery to our friend. "Brevity" is said to be "the soul of wit," and it might also be called the "mastery of learning," it is a kind of *multum in parvo*, which somehow or other Jack falls into, and at once presses it into his service. And this brings us back to the point before us about that wretched word "*weigh*," which in our opinion should be spelt w-a-y; the reason for which, no doubt, has occurred to others as well as ourselves, and which is this:—

When a ship leaves an anchorage, no matter where, it will be allowed that she gets under *sail on her way* to sea or anywhere else. But the redundancy of expression, or the supernumerary words italicized, may easily be considered as too many to be recorded in the log, and "gets under way" would be sufficient. But *weighing* the anchor might be urged against it, although it is not weighed at all, but simply recovered by the ship, and yet recovering the anchor, or even regaining it might sound pedantic in nautical ears, fact as it may be, and yet we say the anchor's "away," which it really is when it is off the ground. We have even seen the expression, the anchor was "wayed," in old Hakluyt, but to our taste the word "tripped" would have been better perhaps, although meaning only, as Admiral Smyth agrees, the loosening it from its bed. So that after all, as our sea-logs

are expected to be precise in their details, we should be satisfied with saying in ours, "hove up" the anchor, as an operation mainly essential in preference to "weigh" it, when making sail or getting under way.

We have been led further than we expected in our disquisition, and must content ourselves at present with this opening of an interesting subject, as a prelude to further discussion. In some future numbers we shall return to the work before us, but we take this opportunity of recommending it to the attention of the nautical world. It is the production of a mariner who was also distinguished as an astronomer and a man of science, and necessarily combines other terms applying to the sea that, although not of every-day application, are yet required by the accomplished seaman.

NOTES ON NOVELTIES.

AMONG the various novelties turned up since our last, those of importance seem to be the Expedition to Abyssinia and the readiest route from Rangoon to Cochin China. That exclusive country of *Rasselas*, hedged round by mountain difficulties and the chances of a tropical clime, is ruled by an autocrat who defies our arms and holds our subjects in contempt of us, is we trust to have a lesson by which he will find that he is not so invulnerable as he imagines. Difficulties there are to be overcome of no ordinary kind, but we have no doubt they will be overcome by good management and determination. On the subject of how to do it we find the following in a little "*Handbook of Abyssinia*," compiled by Mr. George Peacock, published by Longman.

He says:—

"It would seem, therefore, that instead of invading Abyssinia of necessity by the Taranta and Adowa passes from Arkeeko (Massowah) within the straits of Babel-Mandeb,* there are three routes open in the south, nearer the base of operations, where supplies are plentiful, after two or three days' march over a sandy plain, and an open country before us, leading to Gondar, *vid* Ankober, the southern capital of the empire, which city is situated in the kingdom of the united provinces of Shoa, Efat, and Hurrer, in lat. 9° 20' N., and about 39° 50' E., some ninety leagues from Zeila and Tajura, and about one hundred leagues from Berbera. Mr. Salt states this to be the finest district of Abyssinia. But we must look at the political difficulties as well as the physical which present themselves in this almost *terra incognita*, namely, the want of knowing at present with any degree of accuracy, in what position Theodorus is in as to the rebellious portion of his subjects. It may be that the fierce Galla tribes are leagued on his side, together with the chiefs of Shoa, Efat,

* The gate of mourning, or of death.

and Hurrer, against some or *all* of the other chiefs, or petty kings of the northern and eastern provinces of Tigré, Enderta, Samen, and Agame.

“The provinces of Amhara and Lasta may or may not be with the Emperor. Salt tells us that when he was in Abyssinia, Guxo, the Gallo chief, could bring 20,000 cavalry into the field, raised chiefly from the district of Begemder in the province of Amhara, and that his power was absolute on the west side of the Takazzee river. It seems highly probable that Theodorus is the present representative or descendant of this terrible Galla chief who held the legitimate Emperor as a prisoner in Gondar at the time Salt speaks of, and was the sworn enemy of Ras Walud Selasse, the chief of Tigré and Enderta.

“No doubt intestine warfare has been carried on more or less ever since this period (some sixty years ago); and, therefore, it would be very desirable, if possible, to cultivate the alliance of those chiefs who command the passes from Arkeeko (Massowah) through the Taranta and Shiré ranges, by appropriate presents; but should these passes be in possession of Theodorus or his allies, then the southern route might be preferable. No doubt the government have already sent despatches to Aden to ascertain all these particulars, pending the arrival of the troops from Suez and Bombay.

“The distance from Ankober to Gondar is about seventy-five leagues, through a fine country. The distance from Bombay to Aden is about five hundred and fifty-five leagues, or six days' steaming in favourable weather. The distance from Suez to Aden is about four hundred and forty-four leagues, or five days' steaming in favourable weather.

“The *Liberté* gives a description of the Emperor Theodore, his kingdom, and his army, far less discouraging for the British expedition (which, by the way, it thinks most just and necessary) than that of Count du Bisson. The Abyssinians, or the Amhara as they call themselves (for the Abyssinian word Habechi is Arab), are very well preserved specimens of the pure Abyssinian race. They have nothing of the negro about them, but, at the same time, very little of the white. Branches of the race extend to Nubia in the north, and to the south as far as the Indian Ocean, including the Somalis country. The Nubian domestics, called in Egypt *barabrah*, are closely allied with the Abyssinians. The nomade and warlike tribes which are established or wander about between the Nubian Nile and the first ranges of the Abyssinian and Red Sea mountains (Bichari and Chaghie) are themselves Abyssinians, slightly crossed with the Arab race. The Galla, or Mussulmen, in the plains south of Abyssinia, are pure Abyssinians, converted to Islamism. The Emperor Theodore, or Tedros, as pronounced by his enemies, the Bichari, though in his youth enamoured of the theory of grand agglomerations, has only endeavoured to unite under his sceptre the Amhara Christians of the European rite. The English will only have to fight the Christians on the high plateaux, and will find useful auxiliaries in numerous Mahometan tribes, all enemies of the Amhara of the mountains.

Even the latter are not very warm partisans of Tedros, who, though he has fabricated a genealogy making himself descended from David and Solomon, is a man of low origin. He never had a regular army, only chance adventurers, attracted by the hope of a razzia."

It is also stated by the *Standard* that, "The commander selected is a thoroughbred soldier, not likely to let the grass grow under his feet, to fight in velvet gloves, to neglect the wants of his men, or give advantages to the enemy. It may be true that neither Sir Robert Napier nor his troops will bring home much of glory or booty from Abyssinia; but were we to submit to the sacrifice of our countrymen without striking a blow, after all appeals were ended on their behalf, we should pay a far dearer price among those deserts in the surrender of our national reputation; and then, indeed, it might again be said, light lies the earth on the ashes of English pride! The Abyssinian expedition, should the last chance of a pacific result disappear, as it almost inevitably will, will be a national necessity."

We shall look with anxiety for accounts of the progress of our gallant men and their impression on the tyrant Theodore.

The following appears in a recent number of the *Hants. Telegraph* :—

"Naval doings on the Jamaica station are likely again to give occasion for an inquiry on the part of Her Majesty's Attorney-General. From the files brought by the Royal Mail Company's steamer *La Plata*, we perceive that the local papers comment on an unseemly altercation which has taken place between the coroner of Port Royal and the captain of H.M.S. *Constance*. It seems that a seaman belonging to that ship had fallen from the rigging and broken his neck, and the coroner hearing of the accident proceeded in a boat to the *Constance*, which was lying in the harbour. If the official went for the purpose of holding an inquiry "on view of the body" he was disappointed in his object, for Captain Barnard, on being informed of the matter, refused to allow any inquest to be held on board, and ordered the coroner and jury over the ship's side. Sir Leopold M'Clintock, the commodore on the station, was next appealed to, but in vain, for he dismissed the offended coroner, telling him that he must not again interfere with any of Her Majesty's ships. The body of the unfortunate seaman was then interred without further trouble, the coroner adjourning the inquest until the opinion of Her Majesty's Attorney-General was obtained as to his jurisdiction upon vessels of war in the harbour of Port Royal. These altercations are much to be regretted between the civil and military authorities."

No doubt such different views of duty must always be regretted. One party must be acting from ignorance of the law, which *ignorance* was one of the causes (we need not say what another was), of the wretched illegal doings of the navy in the recent shootings and hangings of negroes in the same island. When will our naval officers understand that they are not only to fight their country's battles in war, but to support the civil authorities in their legal proceedings at all times. One would suppose that inquests at our home ports on

British seamen, and on board H.M. ships in commission, were unknown. If they be legal at home, surely they cannot be illegal in our colonies!

The China tea-ship race has been won by the *Taeping*, the winner of last year's great race from China. She arrived off the Isle of Wight on the night of the 20th of September, having left China four days after the sailing of the *Maitland*. It appears her passage was performed in one hundred and four days.

It appears to be a question at present which is the best overland route to China from India, one from Rangoon having been proposed by Captain Sprye. A correspondent in whose experience we have much confidence, writes to us, "would it not be well to try a route which is likely to be found *easier* by going direct up the Irawaddy to Bamoo, five hundred miles above Mandalay and less than two hundred from the Chinese frontier. In 1863 (Maddo) I went to Mandala to see the king of Burmah, about English steamers going up the river, and found no trouble in getting his permission; the truth being that he would be glad to allow anything that promised an increase to his revenue. I may mention that I am acquainted with the navigation of the Ganges, Burhampooter, and the Irawaddy, and that of these three great rivers I consider that of the Irawaddy to be the least difficult." Here are formidable reasons which should be considered when weighing the pretensions of different *overland* routes to China.

It appears by the Cape papers that H.M.S. *Galatea* arrived at the Cape (Simon's Bay), on the 15th of August, when a series of ovations commenced in honour of her Captain H.R.H. the Duke of Edinburgh. His Royal Highness won the affections of the colonists a few years ago, when he was there as a midshipman, and his present appearance confirms all former impressions which find abundance of expressions in triumphal arches, loyal addresses, fetes, etc. It is considered that the visit of H.R. Highness is most apropos as an interesting event in the midst of the bitterness of dissension, and depressed monotonous condition of that South African colony.

Our gunboats on the China coast are as busy as ever in rooting out of their holes the piratical hoard which infest that coast.

Her Majesty's gun boat *Janus* left Hong Kong on the evening of the 17th August, having on board a mandarin and the Chinese who had given information respecting pirates. The *Janus* anchored that night, and next morning arrived at Deep Bay, where she fell in with a fishing junk, whose master furnished some valuable information. According to him, a pirate junk had been there the day before, having on board a heavy armament and eighty men. This man was retained on board as pilot, and the commander of the *Janus* endeavoured to take the gun boat up to Shami, the place to which he had been instructed to proceed. While searching for a passage the masts of a

junk were seen over the land, she having been run on shore and deserted by her crew. Efforts were made to get the *Janus* within gunshot, and she managed to get within half a mile of the junk, when the shoal water stopped her. Lieutenant Lloyd now called away his boats, and pulled for the junk, taking care that his approach was covered by the gunboat. A sharp fire of musketry and jingalls was opened on the advancing boats from parties stationed on the shore and the surrounding hills, and Lieutenant Lloyd made for the cover afforded by the junk. As soon as he boarded her with his men the natives on the beach were quickly dispersed by the fire kept up from their rifles, and this effected, the boats took the junk in tow, and although a heavy fire was kept up on them by the Chinese, who had returned to their position, no casualty occurred, and the junk was safely got out of gunshot. A few hours after the capture of the junk Lieutenant Lloyd landed a party to search for the guns of the junk, which search proved unsuccessful. While it was going on a large party of pirates in small junks made a dash to recover the captured junk, but their attempt was defeated by a party of small arm men advancing into the water covered by the marines on the beach. Two of these small junks were captured and subsequently burnt. The next day the *Janus* proceeded up to Shami, but unfortunately took the ground for nearly twenty-four hours, while searching for a passage. The charts of this neighbourhood are very defective, and it is not to be wondered at that Her Majesty's vessels occasionally use their keels as sounding leads. The *Janus* managed to get to within two miles of Shami, and the mandarin on board having communicated with the authorities Lieutenant Lloyd destroyed, with their consent, two houses known as piratical haunts.

That excellent institution of the school ship *Conway*, at Liverpool, has always had our best wishes, and we now preserve with pleasure an account of the late visit of the Right Hon. H. T. L. Corry, as first Lord of the Admiralty, on his presentation of the annual prizes in September last.

The CHAIRMAN congratulated the friends of the *Conway* upon the presence of the Lords of the Admiralty, and upon the proof which it afforded of the confirmed interest taken by Her Majesty's government in an institution, the merits of which they had hitherto so fully recognized, and he thought they might safely argue that the presence of Mr. Corry and his colleague was a proof that the government were satisfied that this institution was doing an essential national work.

The Right Hon. H. T. L. CORRY, before awarding the prizes, said—Ladies and gentlemen, I learn from the last report of the committee of management, of which I hold a copy in my hand, that the *Conway* is designed mainly to train, and complete the education of, boys intended for officers in the merchant navy, and it is impossible for any one in the office which I have the honour to fill not to take the deepest interest in an institution having such an object in view. In time of peace, under the continuous service system, with a large annual entry

of boys into the navy, the navy may be almost said to be self-sustaining ; but on the occurrence of any emergency requiring any material increase to its existing force, it is to the mercantile marine that it must look for the necessary supply of seamen—and as the quality of these must in no small degree depend upon the officers who command them, any institution having for its object the instruction of officers for the merchant marine must at all times command the entire sympathy of those who have any responsibility for the maintenance of our naval power.

But, independently of this consideration, there is another, which increases the interest which the navy and those connected with it must take in this ship. We have now a royal naval reserve, the officers in which hold commissions similar to those held by the officers in Her Majesty's fleet, and in the event of war would be called upon to share in the duties and responsibilities of those officers. No doubt many of the boys whom I have now the pleasure of addressing will belong to this reserve, and it is therefore of the greatest importance in the navy that they should receive an education such as I am happy to say they do receive on board this ship—and which will qualify them in every respect both as officers and gentlemen to discharge the responsible duties which they may be called upon to fulfil in Her Majesty's naval service.

But there is even a yet more intimate bond of union between the *Conway* and the navy than those to which I have referred. I understand that this institution was mainly established by the Mercantile Marine Service Association, consisting of about nine hundred merchant captains sailing from the port of Liverpool. But these gentlemen, not content with educating boys for that branch of the naval service in which they are themselves more immediately interested, also provide for the education on board this ship of cadets intended for Her Majesty's navy. This is therefore an additional reason why we should take an interest in this ship. And I cannot advert to the preparation which is given in this ship for appointments in the Royal Navy, without saying that I am certain that all the cadets whom I now have the pleasure of addressing must appreciate, as it deserves the generous manner in which her Majesty has come forward to encourage them to compete for appointments in the navy. I believe it has generally been the case that the First Lord of the Admiralty has placed at the disposal of the committee a naval cadetship of the first class, but I understand that in consequence of the successful competitor upon this occasion having reached an age which disqualified him for an appointment as a first-class cadet, it was the intention of the committee to confer upon him a cadetship of the second class, and in accordance with the request made by my friend, Mr. J. Benzley, who called upon me on the subject some months ago at the Admiralty, we have of course the greatest pleasure in substituting a cadetship of the second for one of the first class. I am happy also to be able to say that my colleague and friend, Sir Sidney Dacres, in whose hands the appointment of second class cadets rests, has kindly placed an additional cadetship at my disposal,

and I have the greatest possible pleasure in handing it to the committee for the cadet whose name is Daley, and who, I am told, was within a very few marks as high in the examination as the cadet who had the good fortune to surpass him. I have the greatest pleasure in making this announcement, because I understand that Mr. Daley has endeared himself to his messmates on board this ship.

Mr. Corry then alluded to the remarks made at the prize distribution last year by Mr. Graves, M.P., who said that the line which divided Her Majesty's navy and the mercantile marine of this country was a very narrow one in the port of Liverpool, and that the *Conway* bridged that line; for there were associated on board that vessel those who were (Mr. Graves trusted) to become conspicuous in both services. These words suggested to his (Mr. Corry's) mind the idea that no ship could be better appropriated to the purpose to bridge the interval between the royal navy and the mercantile marine than a ship bearing the name of the *Conway*. One of his earliest and dearest friends, Captain Fair, who was conspicuous for his gallantry, and who from the line of master had been promoted to the executive branch of the service, died in command of the frigate *Conway*, serving at the Cape station. He mentioned this because many of the boys before him, though intended for the mercantile service, might yet probably rise to distinction in the royal navy. And here (Mr. Corry continued) I would wish to impress upon your minds that however great may be the knowledge which you acquire on board this ship, no matter how deeply the foundations may be laid, of skill in navigation and seamanship, and whatever else is necessary to form an accomplished sailor, all will be comparatively of little avail unless accompanied by those high moral qualities which are more especially requisite in those who are destined to command. It is almost presumptuous in me to endeavour to instil this into your minds, because nothing can be more beautiful than the language in which Her Majesty has endeavoured to convey the same lesson to you, the language in which she has expressed her object in conferring upon this ship a gold medal as a reward for the distinguished conduct of the boys on board this vessel. I may be permitted to specify, among other qualities, that you must have a high sense of honour to be good officers, you must be true and just in all your dealings, and when you leave this ship and become exposed to the temptations of life, you must (which is of all things the most necessary qualification of a sailor) be strictly sober; because you cannot too often remember that even one single act of intemperance on your part, whether as the officer in charge of a watch, or in command of a ship, might lead to the loss of all the property, and the still more valuable lives which might be committed to your charge. I am happy to know that the instruction given to you on board the *Conway* is well calculated to qualify you in all these moral and intellectual respects, and I wish you, moreover, to bear in mind that as the mercantile marine of this country is the main source of England's wealth and power, it is a duty which you owe to your country, no less than to yourselves, to make the best use of your time

on board this ship, and to qualify yourselves, so that when you are appointed as officers in the mercantile marine, you may even elevate its character to a still higher degree of perfection than that which it now enjoys.

The delivery of the prizes was then proceeded with. Her Majesty's gold medal was awarded to William Cowley, and the second prize (a binocular glass) to John F. Marshall, who also gained the Admiralty nomination to a naval cadetship. The Queen's letter relative to the prizes instituted by Her Majesty was read. It stated that Her Majesty's object was to assist in encouraging those principles which best qualified boys of the school to become hereafter officers of the Royal Naval Reserve, and thus attach themselves to Her Majesty's service; and, secondly, to facilitate the entry into the royal navy of the boys who obtained the cadetship offered to them by the Board of Admiralty. The prizes consist of a gold medal, open to boys who have been one year on board the ship, and to be awarded to the boy who receives the highest number of votes from his school-fallows. The qualities sought to be rewarded are self-respect and independence of character, kindness and protection to the weak, readiness to forgive offence, and, above all, fearless devotion to duty and unflinching truthfulness. Her Majesty's prize given to boys who compete for cadetships in the navy consists of a binocular glass, suitably inscribed, and a sum of thirty-five pounds towards the expenses of the boy's outfit. Addresses were given by Mr. T. B. Horsfall, M.P., Mr. Laird, M.P., Admiral Milne, etc.

Plymouth, through the medium of the *Western Morning News*, complains that she cannot get her share of the work done for iron ships, while her dock accommodation as well as her iron and steam resources for that purpose are as good as they are at many other places. With the view of assisting to make this known among our nautical readers we preserve the following:

"There seems to be a misunderstanding, unintentional or wilful, among the Channel pilots respecting the capacities of the port of Plymouth for the repair of iron ships. Wooden vessels of course it is well known can be set to rights at Plymouth, but we have lately heard of a case in which the captain of an iron steamer which needed repair was met by a pilot outside Plymouth, and in reply to inquiries, was assured that there were no facilities for repairing his vessel in this port, and the steamer consequently turned her head to the French coast. It cannot be too widely known that although iron ships are not built at Plymouth, the port possesses wet and dry docks in which the largest merchant ships may be safely placed, and two firms, the Plymouth Foundry Company and Messrs. Willoughby, by either of whom the most extensive repairs of iron ships can be expeditiously effected. Quite lately this has received several practical illustrations, and as misconception appears to prevail on the subject, it would be well if efforts were made to bring the real state of the case before the owners and captains of iron vessels, both British and foreign. The

capabilities of Plymouth for performing this class of work quickly are exceptionally good, for we believe that in urgent cases competent hands are to be had from the Keyham steam yards. In this, as in other matters, the western counties are suffering from the want of information respecting their commerce, their capabilities, and their beauties, which too generally prevails."

Who could have imagined that, at this advanced period of our history, we should have met with a statement of the death of a daughter of our late great circumnavigator, Captain Cook, and yet here is the announcement from the current journals of the day:—

"The death is announced, in the parish of St. Martin, Colchester, of Mrs. Ann Rumsey, widow, in her 104th year. It is an interesting circumstance that she was the daughter of the celebrated circumnavigator, Captain Cook, who was massacred by the natives of Owhyhee, in the South Sea Islands, and that she was born only a few years after the accession of George III. to the throne of England."

In our latest numbers we have been treating on those magnificent islands of his discovery, and named by him the Sandwich Islands (after the Earl of Sandwich, then First Lord of the Admiralty) the volcano of which is in our present number, the subject of wonder, as presenting the most magnificent spectacle of its kind throughout the world, and the island of it being that in which he lost his life on the 18th of February, 1779.

THE CAMPHOR TREE.—It is something more than a wonder that a tree, in itself so valuable, in its productions a necessity so absolute, and so entirely susceptible of successful cultivation in the U. States, should so long be totally neglected by our agriculturists. As the camphor tree is quite as hardy as any of our apple trees, there is, perhaps, no good reason why it should not succeed well wherever the apple tree will grow. It is indigenous to all parts of China, Japan, Formosa, Burmah, Chinese Tartary, and flourishes even as far north as the Amoor country; but it is found in the greatest abundance along the eastern coast of China, between Amoy and Shanghae. In the districts of Kwang-tung and Fu-chein it grows in dense forests, the trunks attaining a size equalling that of any of our North American forest trees. The principal market for camphor lumber is Amoy, where some boards are thirty inches in width. The camphor gum of commerce does not in any case exude from the tree, as has been so generally supposed, but is obtained from the leaves, twigs, and smaller roots, by distillation.

NOTICES TO CORRESPONDENTS.

Steam Whaling Ship "*Jan Mayen*"—Her commander will hear from us.

Admiral Smyth's "*Sailor's Word-Book*" is now published.

ERRATA.—In our last number two typographical errors have appeared just where they should not. In page 511 line 13 from bottom, for "sun" read "run." and in line 5 from bottom, "*Broadwood*" should be "*Burdwood*."

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 31, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 522.)

Name.	Place.	Position.	F. or R.	Ht. in seen Ft.	Dist Mls	Remarks, &c. Bearings Magnetic.
44. Para River	Brazil	... ..	...	...	...	See Note (a).
45. Codling Bank	Ireland	W. Coast	R.	...	...	See Note (b). Red light, period 20 seconds.
Wicklow Swash		Discontinued	...	...	...
Wicklow Head		Altered	...	...	...	See Note (c).
Arklow Bank		... ..	F.	...	...	Two lights, see Note (d).
Blackwater Bank		Altered	F.	...	...	See Note (e).
Lucifer Shoals		... ..	F.	...	...	See Note (f). Red light.
46. Africa Rock	Italy W. Coast	42° 21' 5" N. 10° 4' E.	F.	56	11	Est. 15th September, 1867, near Monte Christo, see Note (g).
47. Assateogue Island	United States America	37° 54' 8" N. 75° 21' W.	F.	150	19	Est. 1st Oct., 1867, see Note (h).
48. S.W. Bank	The Cape	... ..	...	...	...	See Note (i).
49. Berdiansk Spit	Black Sea	... ..	...	...	...	Buoy, see Note (a 2).
50. Ramsgate	England	East Pier	Fl.	25	...	Est. 15th Oct. 1867. Intervals of 5 seconds light, and 5 seconds darkness
51. C. Spartivento	Italy S. Coast	37° 55' 7" 16° 3' 3"	R.	210	20	Est. 10th Sept. 1867. Revolving once a minute.
I. Maritimo	Sicily W. Coast	37° 57' 7" 12° 3'	F. fl.	240	21	Est. 1st Oct., 1867. Flash every 4 minutes.
52. Bunt Head N.W. Buoy	England	Downs	...	...	...	Altered in position, see Note (a 1).

COASTS OF THE UNITED STATES.

59. Hooper's Strait	Chesapeake Bay	Light on screw-piles	...	...	9	Est. 14th Sept., 1867.
60. St. Andrew's Sound	L. Cumberland Island	30° 58' 6" 81° 24' 6"	F.	73	14	Re-established 1st Sept., 1867.

F. Fixed. F. fl. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

(a) *Buoys at the entrance of the river Pará, Brazil.*—Two buoys have been placed at the eastern entrance of the river Pará; viz.:

1. A *white* conical buoy, with staff and vane, on the north side of the Braganza bank in $7\frac{1}{2}$ fathoms water, fine sand lies E.N.E. $1\frac{1}{2}$ miles from the north-west part of the bank, North nine miles from Tajoca Point and N.W. by N. nine to ten miles from the land of Curuza island. Position assumed in lat. $0^{\circ} 26\frac{1}{2}'$ S., $47^{\circ} 53'$ West.

Shoal ground also extends nearly two miles E.N.E. from this buoy.

2. A *red* conical buoy with staff and vane, on the east side of the Tajoca bank, four to five miles West of the above buoy, bearing N.N.E. fourteen to fifteen miles from Taipu point. This in about lat. $0^{\circ} 26'$ S., long. $47^{\circ} 57\frac{1}{2}'$ West.

DIRECTIONS.—Vessels from the eastward bound for Pará when on the meridian of Curuza island, and nine or ten miles from it, should see the white buoy of the Braganza bank to the westward three or four miles; they must pass to the northward of it, and having cleared the north-western part of the bank (known as the Cotovello point), keep more to the southward passing between the Braganza and Tajoca banks.

All Bearings are Magnetic. Variation $1^{\circ} 50'$ West in 1867.

(b) *The Light vessel on the Codling Bank* will be placed about three and a half miles S.E. by S. from the south end of the Codling Bank, carrying a *red revolving* light, attaining its greatest brilliancy every *twenty seconds*.

She will have three masts with a globe over a half globe at her mainmast head. The hull will be painted black with a white stripe, and the words *Codling Bank* in white letters on her sides.

(c) *The Wicklow Head Light* will be changed from a fixed white light as at present, to an *intermittent white* light, showing alternately, *ten seconds bright and three seconds dark*.

(d) A Light vessel will be placed on *Arklow Bank*, about three and a quarter miles S.E. by E. $\frac{1}{2}$ E. from the North end of the Arklow Bank, carrying *two fixed* white lights; one on the mainmast thirty-eight feet, the other on the foremast twenty-two feet above the level of the sea.

The vessel will have three masts with a globe on her mainmast head. The hull will be painted black with a white stripe, and the word *Arklow Bank North* in white letters on her sides.

2. The vessel off the south end of the Arklow Bank will be moved about two miles S.S.E. $\frac{1}{4}$ E. from her present position, and her light will be a *white revolving* light attaining its greatest brilliancy every *minute* instead of every *half minute*, as before.

The vessel will have three masts and carry a half globe over a globe at her mainmast head. The hull will be painted black with a white stripe, and the words *Arklow Bank South* in white letters on her sides.

(e) *The Blackwater Bank Light Vessel* will be moved about one and a half miles East of her present position, and will remain a fixed white light as at present.

She will have three masts and carry two globes at her mainmast head instead of one, as at present. The hull will be painted black with a white stripe, and the words *Blackwater Bank* in white letters on her sides.

The above changes will be made by or about the 10th of October, 1867.

(f) On or about the 1st day of May, 1868, a Light vessel will be placed near the Lucifer shoals, on the coast of Wexford, about midway between Tuskar Rock lighthouse and the Blackwater Bank light vessel, carrying a *fixed red* light.

She will have three masts and a globe at the mainmast head. The hull will be painted black with a white stripe, and the words *Lucifer Shoals* in white letters on her sides.

(g) The light will be a red light, and the lighthouse built in the centre of the rock, on Mitchell's system, with iron buttresses.

(h) The lighthouse is in the same position as before, about two miles from the south-west point of the island. From the centre of the Winter Quarter shoal the light bears W. by S. $\frac{1}{2}$ S., eleven miles and a half, and from the Chinooteague shoals North to W.N.W., five miles.

All Bearings are Magnetic. Variation 4° 30' W. in 1867.

(i) The Spanish Government has given Notice, that the Spanish Merchant vessel *Justa*, from Macao to Havana, discovered a patch of shoal ground about five leagues to the S.W. of the Cape of Good Hope.

Several casts of the lead were taken during a calm, and fifteen and a half to thirteen fathoms found with rocky bottom; from the latter depth the water suddenly deepened and no bottom could be found.

At the time of the first sounding in fifteen and a half fathoms, the Cape of Good Hope lighthouse bore E. by N. magnetic (N. 49° E. true), and the assumed distance from the Cape was sixteen miles.

This bearing and distance would place the bank in lat. 34° 31' S., long. 18° 15' East of Greenwich.

It is intended to examine this reported bank, the results of which will be communicated.

(a 1) The Bunt head shoal buoy in the Downs, now lies in five fathoms at low-water spring tides with the following marks and bearings:—

The first mill south of Sandown Castle
on with Northbourne Mill W. $\frac{3}{4}$ N.

The North end of the new Coast Guard
station in Old Stairs bay touching
the chancel end of St. Margaret's
Church S.W. by W.

Gull light vessel N. $\frac{1}{2}$ E., distant nearly 1 $\frac{1}{2}$ m.

South Brake Buoy N.W. by W. $\frac{1}{2}$ W. 1 mile.

Bunt Head Buoy S.W. nearly 1 mile.

All Bearings are Magnetic. Variation 19° 50' Westerly in 1867.

(a 2) With reference to the extension of Berdiansk spit, which was given in the Hydrographic Notice, No. 15, issued from this office on the 15th day of August, 1867, further information has been received, that, in addition to the red beacon marking this danger, a red buoy has been placed in twenty-two feet water, with Berdiansk lighthouse bearing E. $\frac{1}{2}$ N., distant one mile. See former Notice.

All Bearings are Magnetic. Variation 2° 30' West in 1867.

JAPAN NAVIGATION.

JAPAN.—INLAND SEA AND WEST COAST OF KUSIU.—The following additional information referring to the China Pilot, 4th Edition, on the Inland Sea and the West Coast of Kiusiu, is from Commander Charles Bullock, H.M.S. *Serpent*, June, 1867.

[All Bearings are Magnetic. Variation 4° W. in 1867.]

INLAND SEA.—SIMONOSEKI STRAIT. See Admiralty Chart, Simoneski Strait, No. 532; also China Pilot, 4th Edition, page 481.

Vessels passing Hiku Flat of more than fifteen feet draught must keep the leading marks well closed, or a little overlapping.

The Middle channel of the East entrance is still shallowing.

The South channel is improving.

OSAKA. See Admiralty Chart, Inland Sea, No. 2875; also *China Pilot*,

page 492.—The city of Oosaka stands on the left bank of the main stream of the Yodo ngawa, three miles from the sea. The river taking its rise in the great inland lake, Biwa, after flowing about S.W. for thirty miles, enters the gulf of Oosaka by several channels. At the lower or north-western corner of the city, it divides into two branches—the Ajikawa, as the Yodo is here called, making for the sea; the other branch, the Kishungawa, flowing southward disembogues three miles lower down the gulf; these two branches are navigable by junks of moderate size, but the heavier have to discharge cargo in the roadstead.

Oosaka is intersected by several shallow canals, navigated by the flat boats of the country. The castle of the Tycoon is on the north-east of the city, overlooking the river.

The Foreign concession named Ebisu jima or Kawa nguchi occupies the angle formed by the Aji and Kishu branches; a position known by lofty trees; the right of building is confined to this site, but the right of residence extends over the contiguous suburb westward. It is two and three quarter miles above Fort Temposan, at the river's mouth, and two miles below the castle.

THE RIVER AJI is shallow, but admits ships' boats as far as the castle; it has a bar, which at unusually low tides would be nearly dry; at very high tides, seven feet might be carried over. The channel is marked by large piles, the two outer with triangular vanes to distinguish them; the shallowest part is just *outside* these outer beacons, to avoid a shoal extending south-west from the other; when inside, the deep water is close along the groynes on the south side, which always show. There is generally three feet more water in the lower part of the river than on the bar.

DIRECTIONS from within the bar.—Keep the south bank of the river: this leads up in a nearly direct course to the Tycoon's castle. Above the first bridge the river turns off sharp to the south; this is the Kishu branch. Keep close past the Concessions, but in the same direction, for above this the river has two distinct channels, separated by narrow islands and shallow sand banks, which can seldom be crossed.

Boats may be obtained just above the fort, or at Ichiokashinden on the left bank, miles higher up.

LIGHT.—The large fort of Temposan, on the south point, commands the entrance of the river. It is a high turfed earth-work, scarped with masonry, and is a conspicuous landmark, the shores being very low; on the parapet of its western salient is a small wooden lighthouse, shewing a fixed light. There are no towers.

OOSAKA ROADS.—The depths in the roadstead are extremely regular, diminishing gradually over a soft mud bottom; the holding ground is so good that it is considered a vessel could ride out any gale in safety. The shores are everywhere clean sand, (as are the river bars,) but there is mud at a cable from low water line. The best anchorage is West of the Temposan or Oosaka lighthouse.

THE KISHU NGAWA.—Two miles S.S.E. of Oosaka bar is the bar of the Kishu river. At low-water mark a mile from the shore off the north point of its entrance a small star fort is being constructed. The bar has not been closely examined, but it is crossed by larger junks than that of the Adji, for Oosaka.

SAKAI.—LIGHT.—S. by E. four miles from Temposan is the mouth of the Sakai river, entering the sea between two short moles extending from two green batteries; it has no bar, and only two feet at entrance. A light is exhibited from a wooden turret on the north fort.

HIOGO AND KOBE. See China Pilot, page 492.—The Foreign settle-

ment at the head of the northern bay of Kobe, which is somewhat smaller and shoaler than Hiogo bay, but its shores are steep, and if less sheltered in south-west winds is less exposed to the east.

The Japanese Government have two docks at Kobe point, where vessels of five hundred tons, if lightened to seven or eight feet draught, can be taken in for repair.

Large timber, chiefly cedar (Su-ngi), is abundant, and suitable for ship building purposes, spars, etc.

The fresh water obtained at Kobe is good, that of Hiogo is indifferent ; the price is two itsboos per ton.

Supplies of all kinds are at present extremely dear, coal especially, for which fourteen to eighteen dollars a ton is usually demanded, ten or twelve being a fair price.

DIRECTIONS.—If entering Hiogo at night from the west, steer for Hiogo point, which, though extremely difficult to see if it be at all dark, is nevertheless bold ; or, pass it at a moderate distance, and when the shipping lights bear N.N.W. or N.W. steer for them, or if bound for Kobe steer north. In thick or rainy weather, having run the distance haul in for the shore as convenient and anchor in eight to five fathoms. Observe that the tide runs along the shore nearly two knots at springs, its direction unknown. Near Akasi strait it runs even stronger.

The coast as far as Tree point, seven miles eastward of Kobe, is safe, the shore steep into four fathoms, except the bay directly east of Kobe, where a sand bank of less than two fathoms extends half mile off shore.

AKASI STRAIT.—Two rocks, show at low water, in the fairway between Akasi Strait and Hiogo, about three miles E. $\frac{3}{4}$ N. of the north point of Awadji ; two sunken rocks are on the same bearing at one and a half miles from the same point of twenty or twenty-six feet ; they are accurately laid down on a late survey by *Japanese naval officers*. The north point of Awadji kept west until the end hill of the Hiogo range (bordering on the sea) bears N.E. leads well clear of them.

TIDES.—It is high water, full and change at Hiogo at 7 h. 15 m. Springs rise 5 ft. 8 in. ; neaps 4 ft. 3 in. ; neap range 2 ft. 6 in. The range of any day seldom exceeds 5 ft. at springs or 1 ft. 6 in. at neaps.

At Oosaka bar no perceptible differences in the range, from the above, could be observed.

At Oosaka Concession the establishment is 8 h. 17 m. Spring rise thirty inches, neaps six. The flood stream does not reach the Concession.

At neaps there is only one tide in the twenty-four hours.

A strong S.W. wind with low barometer may raise the level of Oosaka gulf two feet.

The directions of tidal streams, sometimes strong off Hiogo point, are not yet ascertained. In Oosaka roads they are weak and irregular.

WINDS, WEATHER, ETC.—Land and sea breezes occur in the summer season ; the latter sometimes raising too much sea on the bar for ships' boats to cross ; these breezes are quite local.

From late autumn to early spring, north-west winds with dry, clear, bright, weather prevail : at this season small pox is common, especially in Hiogo, and this kind of weather is considered highly conducive to the spread of the disease. At the equinoxes, gales occur which sometimes hang to the S.W. for a day or more, but they can scarcely be considered dangerous, veering almost invariably with the sun, and blowing hardest from between west and north. It appears doubtful whether they ever blow home, the shores of the gulf bearing no evidence of it.

After March expect unsettled, changeable weather : with haze and occasional rain, it continues a short time.

In May, 1867, the barometer twice fell from 30.10 to 29.50, followed by a few hours rain; on the first fall the scud from the south and S.W. indicated a high wind, which did not fetch home into the gulf; the second was due to a heavy gale which occurred on the west coast. The rainy season is in July.

GREAT SHOAL. See China Pilot, page 490.—On the Japanese survey the Shika-no-se, a shoal of one fathom appears W. $\frac{1}{2}$ N., eight and a half miles from the north point of Awadji. Soundings of two fathoms extend to a mile east of it, deepening to five, eight, and eleven fathoms with some irregularity. It is said that the shoal extends five miles, but it would seem to be narrow and steep on its north and south edges; the nature of the bottom is not known.

HARIMA NADA ANCHORAGE. See China Pilot, page 486.—Hanamura Bay is not a good anchorage, but that recommended in Sozu-sima on the western side of the Yosino promontory, is both good and convenient in six or eight fathoms; bottom fine sand and shells.

BINGO NADA.—In the northern route, the Admiral's bank off Taura, should be passed on the south side; the point east of Taura if kept N.E. by E., (when a small wooded island will be seen open of it,) will lead clear. There is another bank of the same kind extending a mile eastward of Okuno. A depth of nine feet is found on the Admiral's bank.

TIDES OF BINGO NADA.—It is high water full and change, as follows:—

St. Vincent Channel	.. ..	1 h. 27 m.	flood west, ebb east.
Takami	.. ..	1 h. 35 m.	„ „
Mutsu sima	.. ..	1 h. 45 m.	direction uncertain.
Middle of Bingo Nada	.. ..	11 h. 0 m.	„ „
Imaharu	.. ..	1 h. 0 m.	flood east, ebb west.

At Imaharu, in the southern route, springs rise ten feet; neaps, about eight feet.

MIZIMA NADA. See Admiralty Chart; Inland Sea, No. 2875.—The small islands called Ai sima are incorrectly laid down on the Charts. The north-western, a conspicuous round island is a mile in extent, the other two should be erased and one placed half a mile south of the position.

ANCHORAGE.—In the Bay south of Simonamba point there is good anchorage in six to nine fathoms with the north point of Kosii bearing W. by S. $\frac{1}{2}$ S., but the anchorage at the position shewn on the chart one mile south of this, is bad.

KIUSIU—WEST COAST. APPROACH TO NAGASAKI.—It is stated by Captain James of the steamer "Emperor" that a rock, which dries, is situated on the dotted track of H.M.S. "Argus," lately placed on the chart N.E. of the Kareki Islands and south Apex Straits.

THE BROTHERS.—The "Serpent" sounded in the position of these doubtful dangers with even bottom in from fifty-five to sixty fathoms fine sand. Their existence has not been credited for some years.

CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in September, 1867.—Sold by J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

733. Red Sea, Amphila Bay. Capt. Weatherhead and H. Salt, Esq. 1810. 1s.

733. „ „ Howakel Bay. H. Salt, Esq. 1810. 1s.

733. „ „ Ansly Bay. H. Salt, Esq. 1810. 1s.

2661. a, b, China Sea, Northern portion from Cam-rauh Bay to Formosa and Mindora Straits, various authorities to 1867. 5s.

EDWARD DUNSTERVILLE, Commander, R.N.
Hydrographic Office, Admiralty, 15th September, 1867.

GENERAL
WRECK CHART
OF THE
BRITISH ISLES
FOR
1866.

Compiled in the Board of Trade
from their Wreck Register.
SHOWING ALSO THE PRESENT
LIFE BOAT STATIONS.

- Signifies a Casualty
- ☉ Represents a Life Boat.

Scale of Nautic Miles
0 20 40 60 80 100

Gravelly Pt
Mason
Burn H^o

The Schelling

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

NOVEMBER, 1867.

THE CITY OF PARA.

THE visit of H.M.S. *Sharpshooter*, Commander Bax, to the town of Cameta, which appeared in our last number, is an important introduction to the opening of commerce in a part of the world which has hitherto excluded all foreign vessels. Happily it has been determined by the Emperor of Brazil to terminate this exclusiveness, and the amount of commerce which will pass through that port alone, owing to its easy access from sea, will form a large portion of the whole which flows through all the various ports named in the Emperor's decree. Indeed, to us it appears that if a vessel of war can get up the river so easily as the *Sharpshooter* seems to have done, the difficulties of our merchant vessels to do the same will be very few. Welcome appears to await them if we judge by the *Sharpshooter's* reception, and by keeping to the eastern bank for thirty miles above Para the passage to Cameta is made.

The directions for the river which we have published from time to time, of course are found in the pages of those books expressly devoted to that navigation, at the head of which, and superior to all, from the great care in its compilation, is the *Brazil Pilot*, published by the Admiralty. But we may allude to the mishap of the *Sharpshooter's* canoe mentioned in our last, and which circumstance, from a paper in our October number for 1846, seems of common occurrence at the mouth of the Amazons. We therefore caution our Nautical readers visiting that river to be very circumspect in the use of their boats, and as some interest will naturally attach to the city of Para itself, we give also a picture of it as it was in 1830. At the same time we shall be glad of any account of it as well as of the town of Cameta from any of our readers, as it is at the

present time. We here annex the Decree and the remarks it occasioned in Mitchell's *Maritime Register*.

"On the 3rd of July last a Decree was issued by the Emperor of Brazil fiatng a previous Decree, 7th of December, 1866, and declaring the navigation of the River Amazon and its confluent, and of the River San Francisco, from and after the 7th of September, 1867, free to the Merchant vessels of all nations. The rivers opened by this Decree are the following:—The Amazon, as far as the village of Tabatinga; the Tocantins, as far as the city of Cameta; the Tapajoz, to the city of Santarem; the Madeira, to the town of Borba; the Negro, to the city of Monaos; and the San Francisco, to the city of Penedo.

"It will be seen, by consulting any good map of South America, that these rivers penetrate the interior of Brazil, west, south, and north-west from the Atlantic to the confines of Parana and Paraguay in one direction, and to those of Bolivia, Peru, and Equador in the other. The opening of these rivers, carrying navigation for nearly 3,000 miles from the Atlantic, means not only the opening up of the whole interior of South America, but the establishment of a fluvial communication between the Pacific and the Atlantic States of that Continent. We have less, however, to do at present with the results of this great achievement than with the regulations prescribed by the Brazilian Government for controlling and giving effect to it. For the collection of the Customs' revenue, Custom-houses have been established at the afore-mentioned towns of Cameta, Santarem, Borba, Monaos, and Penedo, while for the River Amazon the Custom-house will be situated at San Paulo de Olivença. The majority of these Custom-houses are situated near the Atlantic, so that vessels entering may get their business dispatched at once, and proceed on their voyages inland, or discharge into the craft specially employed in the river navigation. These Custom-houses, moreover, having the same authority as to imports and exports as the other collectorates of the Empire, can grant entries and clearances for all descriptions of goods, whether native or foreign, exports, imports, and for re-exportation, and there is a special provision against re-exportation in the Amazon or its confluent of foreign goods, except where there is a Custom-house.

"Three depôts or bonded warehouses for goods will be established at Manaos, Borba, and Tabatinga, as soon as the fiscal and police regulations (which form no part of the Decree under consideration) are issued. From these warehouses goods may be re-exported to other Custom-house depôts, to the National Custom-house, or to foreign Ports, without paying duty, and may be entered and forwarded for consumption, paying the respective duties. The Decree reserves to the Brazilian authorities the right of prohibiting importation, deposit, or transit, and exportation, but only under 'extraordinary circumstances, and in the interest of the public health and safety.' The Customs' regulations will be enforced peremptorily by the forfeiture of the ship and cargo where there is any proved attempt to evade

them, and this penalty attaches to any and every attempt at 'fraudulent importation, exportation, or transhipment'—an offence which, it is anticipated, may be committed clandestinely in the small bays or 'other territorial waters of the Empire.' It is manifestly the intention of the Government of Rio, while opening the interior navigation of Brazil to the flags of all nations, to facilitate the operations of Trade by providing a sufficient Customs' machinery. Thus, where there happens to be no Custom-house or place for the collection of revenue, termed indifferently 'station, agency, post of fiscalisation, and registry,' vessels shall receive on board one or more Customs' officers to take note of the goods shipped, their quantity and quality, and of other matters necessary for the collection of the duties at the Port or Ports where the duties are payable. These duties are to be paid in accordance with the ship's manifest, except—and this is a matter of some consequence to our Merchants and Shipowners who may engage in this new Trade—where goods are intended for transhipment or re-exportation, in which cases the declaration of the Owners or Consignees will be sufficient, and the manifest need not be produced.

"The opening of the Amazon and its confluents is a measure in pursuance of the policy which dictated, some time since, the opening of the Brazilian Coasting Trade. It is, perhaps, to be regretted that the most recent change in the Navigation Laws of Brazil was not made at once complete. The present Decree contains a reservation in favour of national vessels which is objectionable in principle, and will, no doubt, shortly be abandoned. This is a provision which gives to national vessels a monopoly of the carriage of all goods 'from one to another fluvial Port, and from these to that of Para (near Maranham), or from the fluvial to other Ports of the Empire,' except of goods belonging to the cargo of a foreign vessel which carries a permit from one Port to another to discharge or tranship, or which carries passengers and their baggage. This is the application of the principle of a reserved Coasting Trade to the River Trade of Brazil and the adjacent regions, and, so far as it is so, is a mistake. Allowing for this, however, the opportunity afforded by the opening of the Amazon and its confluents for a new and vigorous Commerce is immense. With these vast highways, and with that of the Plata, the Parana, and the Paraguay, open to the Commercial fleets of all nations, we shall be within reach of the produce of the whole interior of South America—a region, as we are told, of, for the most part, unbounded fertility and vast natural wealth. But besides this there is the prospect, neither remote nor uncertain, of perfecting the connection between the two oceans. Already Brazilian steamers of one thousand tons ascend the Amazon to Nanta, in the Republic of Equador, while by another affluent, the Pastasa, vessels of three hundred tons navigate to within one hundred and fifty miles of Quito, and about the same distance from the Port of Guayaquil, on the Pacific. Considering the vast extent of territory thus opened to Commerce, the character of the regions traversed by the Amazon and its confluents,

their great natural resources, and the facility of access, the Decree dated from the Palace of Rio de Janerio on the 3rd of July last ranks amongst the most important documents of our day relating to Commerce."

[One consequence of the above edict will be to make the city of Para itself better known than at present to our Commanders, and we therefore annex, as of some service to them, our own account of it, as it appears in the voyage of H.M.S. *Chanticleer*, from the notes of her Surgeon, Mr. W. H. Webster, a gentleman of much observation and discreet judgment, retired from service.—Ed. *N.M.*]

On Sunday, the 5th of September, 1830, we sailed from Maranham, having previously hired a pilot to conduct us to Para for the sum of fifty pounds, on account of the intricate navigation of the river. We kept at a moderate distance from the coast until the morning of the 7th, when we stood in and made the land near the mouth of the river. In a few hours afterwards we found ourselves in the "Maranhon," the name bestowed on it by the early navigators, who in sailing along the coast were surprised on finding the water fresh. They therefore very expressively named this mighty water, "Mare Non"—"Not the Sea," its freshness being the only indication that they were not in the ocean. It is now better known to us as the Amazon.

We entered the river by the smaller or eastern branch, the only navigable one for large ships, as a bar lies across the principal mouth, or the great western branch of the river. It may be observed here, that the island of Marajo, which is nearly a hundred miles in circumference, lies in the mouth of the river, dividing it into two unequal branches. The greater body of water passes to the westward of it, while the deeper and navigable channel flows to the eastward. The island Marajo is a low, flat, alluvial formation, covered with brushwood and grass, and abounding in cattle. This luxuriant island supplies Para with cattle and horses. In the rainy season it is much flooded, and is peculiarly unhealthy when the waters have quitted it, and the sun begins to exhale the malaria. At this time violent remittent fevers prevail. It is overrun with alligators, snakes, and wild beasts.

The mouth of the Amazon is one hundred and thirty miles in breadth, and its course extends through a distance of three thousand four hundred miles, rising from the mountains of Peru. But the sources of this river and its various tributary streams are involved in much obscurity, and much time and patient investigation will be necessary to acquire a correct knowledge of the sinuosities of this majestic stream. The eastern branch, which we had entered, is only twenty-five miles broad. The land on each side is low, and we kept along the eastern shore, which displays a boundless continuity of shade and one uninterrupted scene of forest green skirting the water edge, and extending with one level surface to the horizon. Accustomed as we were to the continual monotony of such scenery, that of the Amazon produced no new feelings among us farther than the gratification of being able to obtain fresh water alongside of the vessel. This water,

however, was extremely muddy, but tranquil, and without the heavy swell of the ocean.

We had a fine breeze from the N.E. which gradually subsided towards evening; nevertheless we made good progress up the river. The navigation is intricate and dangerous, and we had some difficulty in avoiding the numerous shoals and sandbanks, owing to the strength of the tide. We passed Selina, the pilot station at the mouth of the river, and a few villages which afforded an agreeable break in the continuous line of the woods. By the evening we had reached within thirty miles of Para, and anchored in the river for the night. Early on the following morning we got under way and proceeded onwards. As we continued our course, we found the river gradually become narrower, and we had a nearer view of the banks; but we found the same character as at first, a low rich country covered with dense forests. As the little *Chanticleer* moved gracefully up the stream the utmost tranquillity prevailed around, and her form was reflected on the unruffled surface of the water. Occasionally we passed a small islet; and having left a fort on the eastern side of the river intended to guard the navigation, the city of Para appeared before us, and in a short time we gained the anchorage.

A rapid tide sets up the river at the rate of between four and five miles per hour and this flows with a current stronger than the ebb for seven hours, while the latter does not run more than four or five. The water is at all times fresh and may be used, although it is turbid and filthy. This prevalence of the flood tide, both in strength and duration over the ebb, may be accounted for in some measure by the immense breadth of the river's mouth at the seaside, and its sudden contraction here (fifty miles up), where it is two miles broad. The rapid tide is dangerous to boats in consequence of their liability to be drifted on to the cables and warps of the shipping. One of our boats in coming alongside, was drifted in contact with a boat at the guest warp, and was taken completely over it without any mischief being done.

The banks of the river are exceedingly muddy, affording but little facility for landing, and where they do allow of it houses are generally erected, the advantage not being disregarded. In the lower parts of the river are some sandy beaches. The chief novelty that we found was the number of thatched and cabined canoes of the country, and the small river craft with their lofty spindle masts and thin cotton sails, having some resemblance to Chinese vessels. It is not unusual to see them with a large mat or a bush with all its leaves, to answer the purpose of a sail in these canoes. We found a Brazilian brig of war in the river, and a prison ship, besides several Portuguese vessels. The principal business of the river seems to be carried on in these canoes, which are continually arriving and sailing, and literally crowd the shore near the town. They bring the produce of the country from all parts, and come from a distance of six and seven hundred miles from up the river. They are navigated by various native tribes of Brazil Indians, each canoe generally containing a whole family or more

of people. It is quite common to see little low canoes, nearly even with the surface of the water, containing a man in the bow with his paddle and a woman in the stern steering with another, while their children, a pack of little copper-coloured urchins, are crouching beneath a matted awning amidships. The larger canoes have a raised awning abaft, in which hammocks are slung, in these the canoe-men may be seen lounging and swinging all day smoking or feasting.

The city of Para lies on the right bank of the river Amazon, at the distance as before stated of about fifty miles from its mouth. As it appears from the anchorage in the river, it presents nothing particularly attractive or conspicuous, except its numerous churches; no lofty ranges of buildings are to be seen in this city of the Western world, but environed by wood and the waters of the river, and built on lower ground it has altogether a humble appearance. It occupies the bank of the river about two-thirds of a mile and is half that in breadth, the highest point of ground, that on which the church of St. Ann is situated, being about seventy feet above the surface of the river. The city was founded by the Jesuits in 1615, and contains at present, about twenty-two thousand people.

If at the first sight of it Para does not convey any exalted idea of its grandeur, certainly an intimate acquaintance with it is still less likely to do so. It is dull, noiseless, and cheerless; without vehicles or the activity of business. The streets are laid out at right angles to each other, but they are narrow; and the houses, generally about two stories high and of a moderate size, have latticed blinds for windows, which add still more to the sombre effect of the whole. None of the streets are paved, if we except some few, which have a quantity of rough pebbles in them; of course they are neither lighted nor cleaned, and towards the river are particularly filthy.

The city of Para is not without its public buildings, among which the cathedral takes precedence, followed by eight churches, a palace, custom-house, etc. The cathedral is built in the form of a Latin cross, and I was pleased with its structure and decorations, which were neither gaudy nor too plain. The exterior is somewhat dilapidated, but still preserves a respectable appearance. The interior is very neat, and affords ample room for a large congregation. The altar piece is good; it represents the Crucifixion; and there are several large paintings of the Apostles. The bishop's palace is in the Cathedral Square, and faces that building. It is a respectable edifice, appended to which, is a church or chapel for the domestic service of the bishop and his establishment. In the same square is a comfortable hospital, and the remaining part is filled up with a few houses. The palace, which is the abode of the President, is a handsome and commodious building, most agreeably situated on an open spacious lawn at the south-west end of the city. The interior of it is every way worthy of its purpose. Adjoining the palace are the walls of a building which was intended to be a theatre on a magnificent scale. The design was good, but the whole was a failure.

In the middle of the town is the church of St. Ann, yet incomplete,

and with the view of raising sufficient funds to finish it, a mendicant friar may be seen standing in the street all day soliciting contributions for that purpose. The church of Jos. Menerz stands close to the water-side; adjoining to it is the custom-house, and prison; and these three form the most conspicuous range of buildings in the city, but they are nevertheless by no means remarkable. The convent of St. Antonio is situated at the eastern extremity of the city. Most seaports have their arsenals, whether on a large or small scale, and whether public or private property, and therefore Para is not without one. When we were there a frigate was on the stocks, but for want of funds all work on her had ceased.

The streets of Para have nothing attractive about them. The shops and warehouses are numerous, and are tolerably well supplied with merchandize; but there is neither taste nor elegance in their arrangements; those of the apothecaries seemed to be the neatest and cleanest. The markets are held by the water-side, near the Church of Mercy, where women with vegetables and fruit herd together for the most part of the day; but butchers' meat is not to be had after ten in the forenoon, a very salutary regulation on account of the extreme heat of the place. Nor can fish be depended on, in consequence of it, for more than three or four hours after it is out of the water. The *Largada Polva*, is a large open and extensive common in the south-east quarter of the city. It is, perhaps, not the most respectable place in Para, although it is the most airy, and from the rural little cottages in it, is very pleasant. The gibbet for the execution of culprits is in this square, and also a *well* of ants.

Although Para possesses in itself few attractions, the numerous shady walks in the environs of the city deserve notice, as they form an agreeable retreat for the inhabitants. There is, however, a public walk in the city, near the palace, which is resorted to daily in the cool of the evening, for the delightful promenade it affords. The others are principally formed of rows of lofty silk-cotton trees, which bear no little resemblance to our elegant horse-chestnut trees. The mango with its pendulous fruit, and the orange and lime mingled with each other, form the sides of the walks and afford a grateful shade. The country in the immediate vicinity of Para is very beautiful, and the outlets to it are abundant. In the suburbs of the city are several elegant little villas with extensive gardens, rich in all the variety of tropical produce. The roads, which are not amiss, are lined by large spreading trees, among which may be seen here and there some little hut or cottage embowered in foliage, which in this part of the world may be considered as evergreen. I have contemplated these happy looking abodes in the course of my walks from Para; and if the minds of their inhabitants are as peaceful, nothing more is required to complete the "happy valley" alluded to by Dr. Johnson. At some intervals the eye is attracted by these little cottages, and at others by some neat villa in sequestered solitude, the country residence of some merchant of Para, presenting to the feverish spirits of the world a scene of happiness and peace. Here the winds are loaded with a

balmy fragrance, while the graceful palms, presenting in their various stages, forms so remote from the rest of the forest, impart grandness and sublimity to the scene.

The road to the Nazzaré Church, distant about a mile from the city, is a favourite resort of the people of Para. The church, which is built on a small scale like that of a village, is simple and neat, and most romantically situated on the skirts of a wood, with a small open area in front. In the month of October, which is no doubt well remembered by every inhabitant of Para, and anticipated with feelings of delight by the young and gay, a grand scene of festivity takes place at this little church. It is called the feast of St. Nazzaré, and is attended by every one in Para. On the arrival of the day, the fair opens under the auspices of the church, Mass is performed in the first style, and the inauguration of the whole festival is the office of the clergy. The usual business of fairs, such as frolic and feasting is the order of the day, presenting a strange incongruous mixture of folly and religion. This lasts for a fortnight to the great delight of those who frequent it, some, I believe, for the purely innocent enjoyment of dancing, and others to indulge in the common propensity for gambling. However, the whole business is closed with the benediction of a grand mass.

Para is lamentably deficient of public institutions for education, the whole town can only boast of one school, and that is under the direction of the clergy. This deficiency is evident to a stranger on going even into the first houses of the place. A city that does not boast of a single bookseller's shop is certainly something extraordinary in the present day; and where this is the case there is little hope of finding these valuable articles among the people. But of the two sexes, the most complete ignorance is found in the female, as might be expected, and it is a common thing to find those of the most respectable families incapable of either writing or reading. Such a state of things is certainly lamentable. All appears wrapped in the shade of profound ignorance. There certainly is a Weekly Gazette published in Para, but even this publishes little to the honour of her people. It is small, and is the regular channel through which the edicts of Government are circulated; the rest of the matter it contains, alas! is mostly of bad stamp, and by no means calculated to raise the character of the people. It may not be necessary to make quotations, but the Gazette is certainly not calculated to make any favourable impression on a stranger, of their morality in general; and the crowded state of their prisons is equally against them in the same point of view. Murder is not unfrequent in Para no more than other countries; but the laws are bad, and badly administered, for justice is tardy, and a criminal may be in prison for several years without being brought to trial.

The currency of the province is a good criterion of its general poverty. There is no other circulating medium than copper, and even that is of the basest kind. The existing government call in, at pleasure, the old copper coin, and stamp it afresh with a crown, by which magical influence it becomes of twice its former value. Such is the wretched trash in circulation, that the stamped and unstamped pass in common;

and it often happens in payments that one dollar's worth weighs and is intrinsically worth three times as much as some of the other. It would appear that this province is the very sink of the empire in respect to currency, as all the base copper coin which is not passable in the other parts of the empire, finds here a tardy circulation. No better idea of it can be given than the fact that what passes for one hundred pounds, in copper coin, is really and intrinsically worth only eight pounds. Silver was at a premium of twenty-five per cent.; and the very sight of a dollar when we were there was quite a rarity. Hence the necessaries of life are cheap. House rent is moderate, and there are no direct taxes. The following were the market prices at the time of our visit:—meat twopence per pound, indifferent quality; bread sixpence per quarter loaf, very good; white sugar threepence per pound, very good; rice one penny per pound; tapioca one penny per pound; spirits of the country one shilling and threepence per gallon; coffee twopence per pound; cocoa one penny per pound, very cheap; a beautiful and delicious pine-apple of six or seven pounds costs threepence; oranges threepence a hundred, basket included, which alone is worth the money; alligator pears four for one penny; melons twopence each. Fowls dear, being one dollar the pair; horses are worth sixteen shillings each, and are generally fed with rice chaff. Foreign produce is by no means high at Para, the wines of Portugal and the manufactures of England being comparatively cheap.

Notwithstanding the natural riches, and the superabundant advantages of Para, it is the poorest city in the empire, and receives a subsidiary stipend from the neighbouring province of Maranhão, amounting to forty thousand dollars, or eight thousand pounds annually, to defray the expenses of its government. In consideration of this gratuity, Para receives the goods imported into Maranhão duty free, and likewise defrays the expenses of the packets and men-of-war on the station. There is something radically wrong in the government of this province, and a miserably perverted policy keeps in the back ground the capabilities and resources of the country. There can be no doubt that the Empire of Brazil is far too large to be governed well as it is. Corruption lurks in every department.

The province of Para is equal in size to France, and has an inland navigation of six hundred miles. It is at once the paradise of the Indies and Brazils according to the general opinion of the inhabitants of that great empire, which occupies the whole extent in latitude of the southern tropic. Para is sufficiently capacious to receive all the redundant population of Europe, and to maintain them in luxury; it is a region of endless fertility, one where every rood of ground would maintain its man. It is said, that it was the miserable policy of the Marquis de Pombal not only to keep foreigners but the Portuguese themselves ignorant of the value of this province, a policy which was realizing the character of the dog in the manger, illustrated by the fable. He did every thing in his power to degrade it, and keep it in the back ground. The situation of it is well adapted for rendering it the depôt of an extensive and lucrative trade, but the commerce, in

consequence of such short sighted policy, is extremely small, a kind of petty retail rather than any extensive or liberal trade. A merchant is obliged to buy, from time to time, small scraps and parcels. Such, for instance, as a pound or two of isinglass, by which means he is long in accumulating a stock.

All the produce is brought to Para in canvas from a distance of six or seven hundred miles in the interior. But the whole country, as before observed, is too large for its present mode of government. When we see nations swayed by intelligent rulers, rising in greatness and importance, or when cursed with vicious and imbecile leaders sinking into contempt and misery, it is evident that,

“Of all the ills that men endure,
How small the part that kings can cure.”

The Brazilian tribes about Para appear to be a fine healthy and well-conditioned race of people; their skin is of a good firm copper colour, without a tinge of black; they have long jetty hair with a rubicund face, made up of an intelligent set of features, in which a general expression of mildness and good nature predominates. If heat had anything to do with colour, they would be black enough; for at Para, directly under the equator, and in a low level country it is intolerable. The superiority of the Brazilians over the poor African tribes of slaves at Para, is particularly remarkable, and the contrast is sadly against the latter.

It is customary for the negro slaves to come down in groups every morning to the river side to purchase various articles of produce brought down from the interior by the native canoes. On these occasions it is amusing to see the negroes up to their knees in the water with their petticoats tucked around them, the whiteness of which contrasts well with their jet black skin, their woolly hair, and their repulsive countenances, and appearing in the presence of the Brazilian boatmen a very inferior order of beings, as they really are. The precision with which they carry things on their heads, is also exceedingly amusing; but it has often been a subject of admiration in other countries. Here they may be seen with a basket of fruit, or a jar of oil, or a calabash of milk, or a jug of water, all placed on the head; in fact, whatever they may have to carry is invariably placed on their heads. At this usual morning rendezvous by the river side, some bring coffee ready made for breakfast, while others bring a favourite liquor called “wassaree” an infusion of a small kind of palm. This beverage has the colour of port wine, and when sweetened is highly esteemed by these people. In fact, with a banana, or alligator pear, it forms the principal fare of many, while others prefer the farina of the cassada with it. Cocoa is the staple article of Para, and is produced in vast quantities; but it is so depreciated in the foreign market, that it will not defray the expense of freight. There is in fact no sale for it, and the aroba, or thirty-two pounds of cocoa, when we were there, was only worth twenty-pence. Hence the cultivators of it were ruined. Rice is very abundant; but corn is scarce. Sarsaparilla,

balsam, copayva, tonquin beans, vanilla, farina, oils, and India rubber, are the chief articles of exportation. The importations are flour, spermacetti candles, soap, shoes, etc., from the United States; cotton goods and hardware from England; wines, vinegar, olive oil, limestone, drugs, chestnuts, etc., from Lisbon.

The manufactures of Para are ladies' combs, polished with the leaf of the *caratella Americana*; good leather from the skins of the *goats* or *hares* of the country; coarse and bad pottery, chocolate and coarse hammocks, cotton bags and lime grass hammocks, straw and palm hats, lace, salt fish, and jerked beef. The Indians bring down from the country elegant wands of beautiful feathers called sceptres, besides superbly ornamented hammocks, feather dresses, bows and arrows, and stained calabashes.

QUALIFICATIONS OF OFFICERS OF MERCANTILE MARINE.—*Steam.*

A SAD accident was reported a short time ago, on board the *City of Liverpool*, in the Bramley-Moore Dock, at Liverpool, by which some eight human beings were either killed or wounded. A jury of their countrymen returned the sensible verdict that they lost their lives through the culpable negligence of Messrs. —, in originally fitting the boiler, which caused the catastrophe, with inefficient safety valves.*

* "THE BOILER EXPLOSION AT LIVERPOOL.—The inquest on the bodies of the men killed by the explosion of the donkey boiler on board the ship *City of Liverpool*, was concluded at Liverpool on Friday night. The jury returned the following verdict:—'Accidental death, caused by the explosion of an engine boiler on board the *City of Liverpool*, in Bramley-Moore Dock. With respect to the boiler, the jury are of opinion that the equipments thereon were bad in the extreme, and that such safety-valves ought to be at once removed from all steam boilers used in this port—at least, as unit to be in use. After the sad occurrence which took place in Burnley from a boiler made and equipped by Messrs. Green and Son, the jury are of opinion that Messrs. Green and Son are highly censurable for sending out such boilers fitted with such dangerous equipments. The jury are also of opinion that Messrs. Marshall and M'Conochie are highly censurable for having neglected to see that both engine and boiler were in good and proper working order, after receiving instructions to do so from the captain. The jury are strongly of opinion that the use of donkey engines on board sailing ships for the purpose of loading and discharging cargoes should be strictly prohibited, for the reason that there are no competent engineers attached to such ships to undertake the management or supervision of such engines. We cannot conclude our presentment without adding our opinion that the owners of the ship are censurable for not employing a competent engineer to work the engine during the time of loading and discharging the same, and we are of opinion that the owner, and Messrs. Marshall and M'Conochie should be called upon to contribute something towards the relief of the widows and orphans of the deceased men.' The Deputy Coroner, in discharging the jury and thanking them for their services, said he was sorry that he could not indemnify them for the time they had lost and the trouble they had been put to. He had consulted all the authorities upon the subject and found he was quite helpless in the matter. It was, however, quite open to them to petition the Town Council for some compensation."

It is impossible to see the really criminal carelessness which for years has hung over our Merchant Marine, without concern and regret. Storm, fire, collisions, and steam, alike continue their fearful ravages in defiance of the efforts of legislators or the unceasing exertions of philanthropists of the age. Before the subscription list to alleviate the misery, caused by one accident, has closed, a second is appealing to our sympathies.

Doubtless many of these might be prevented by more active legislative interference, for headstrong competition induces, or drives, many an engine-maker or ship-builder to put his name on work which nothing could have induced him to do but sheer necessity. It is absurd for men to say, every one has a right to act as he pleases in such circumstances, the law of necessity is stronger than the law of safety, and induces many a seaman to jeopardize his life in a badly found ship, and many a stoker to risk his in attending an ill-found boiler. On examining the latter, in a merchant ship, it is proved to be a matter of surprise that such accidents are of rare occurrence. Faulty safety valves, rude turned bearings, working in cast iron bushes, added to the ignorance of the men in charge; all lead to the inference that but for certain fortuitous circumstances, more lives than are at present, would be sacrificed.

An ill attended or defective boiler is at all times a most dangerous subject to deal with in a ship, especially as it is usually worked at a very high pressure of steam. And surely the time has arrived when some supervision is absolutely necessary for safety of life and property. The present custom is to pick the *donkey-boiler man* by chance from among the crew or from the street. He may never have had the slightest training for such a duty, or he may be a drunkard; but in times of necessity all this is overlooked. To say that any stringent examination for the post is required would be absurd. A practical engineer could decide in five minutes whether a candidate for this duty is fit to have charge of a boiler or not, and a certificate to that effect might be given. As steady men frequently make twenty per cent. over their pay, when in charge, the post would be more sought after by such, if an official qualification were made indispensable, and the certificate would, in a certain measure, be a guarantee for good behaviour, as it may invariably be seen that all men feel a certain degree of pride in possessing any badge of office which makes them superior to their fellow men.

It is much to be desired that examinations in steam and mechanics were gradually introduced into the Merchant Service for all classes of officers and commanders. Our ships are now fitted with so many mechanical appliances that a certain amount of knowledge of the science is an absolute necessity to all men in command. As a check even on the engineers, such a knowledge would prove invaluable, for these men too often endeavour to make a mystery of their profession, and raise difficulties about repairing slight accidents to machinery, which a commander conversant with the principles would laugh at. Not long ago, it came to my knowledge that a large steam ship was

detained six weeks, with a cargo of great value on board for the Pacific ports, in consequence of a break down in one of the air pumps of the engine. The clever city engineer had told the captain that it would be impossible to repair the accident with their own resources, and informed his messmates subsequently, that he was *paid by the month, not by the voyage*. At the termination of the six weeks the captain brought an engineer on board, who had the ship ready for sea in twenty-four hours. Hence it is evident that if the captain had possessed an ordinary knowledge of machinery, he would not have allowed a rascal to impose on him, and to entail an enormous loss on the owners of ship and cargo. It is well known that the vessel was especially chartered in order that the goods might arrive at their destination in time to meet the demands of an annual fair; of course when she did arrive, the fair was over, and the goods were comparatively valueless.

A late police report said, that a steamer had been compelled to put back owing to the drunkenness of the chief and second engineers. The first had one of his fingers crushed when he was drunk, and could not attend the court. From the evidence it would appear that the law is so defective that the magistrate could not suspend the certificate of the second engineer, although the charge was proved. He was therefore dismissed with a caution, and a second opportunity was thus given him of trying to blow Her Majesty's subjects and their property into the air. What Sydney Smith foretold about a bishop being burnt in a railway carriage, will come to pass: when the Board of Trade is blown up, in a steamer, by the drunkenness of an engineer, we shall have some wiser and more stringent regulations.

MERCATOR.

CONSIDERATIONS of the winds, currents, and tides of the Gulf of Cadiz, and the Western Shore of the Spanish Peninsula, with the best points for making the coast from sea, and how it should be navigated.

(Continued from page 539.)

Land and Sea-Breezes.—These partial winds proceeding from the same causes as those which give rise to the Trade winds, are common during summer in the Bay of Cadiz. The sea-breeze, as in tropical countries, is found on the coast at Cadiz in summer when the East wind does not prevail, and are strong and lasting in the Gulf of Huelva.

Sea-breeze on the Coast of Cadiz.—From nine to ten o'clock in the morning the sea-breeze sets in gradually and veers to S.S.W. and S.W., as the sun gains height, attaining its greatest strength when the sun has passed the meridian, or at the hottest time of the day, and gradually subsides as the sun loses height, veering westerly until eight or nine o'clock in the evening when it falls calm. After two or three

hours of calm the land-wind gets up, acquiring more strength in proportion as the coolness of the night increases. At daylight it has attained its utmost strength, and fails gradually as soon as the sun appears and begins to warm up the ground again to receive in its turn the cool sea-breeze.

In the Gulf of Huelva this land-breeze is from N.E., and E.N.E. in the Bay of Cadiz; while on the African Coast it becomes E.S.E. When the land-breeze blows from the east in Cadiz Bay it shows that the *Levanter* is blowing in the Strait of Gibraltar.

Sea-breezes in the Gulf of Huelva.—These sea-breezes in the Gulf of Huelva begin at S.E. and leave off at N.W. In summer time they are almost constant, and while they last a vessel will be safe off the coast, even to anchoring to obtain water, or to rest from a cruize. Off the Cadiz coast the sea-breeze is not so strong, for it is subject to interruptions from the Easterly wind, which is not so frequent in the Gulf, inasmuch as that noxious wind does not reach so far.

Although the sea and land-breezes belong to summer, they also come in winter attended with long intervals of fine weather.

Let us now turn our attention to the winds of the coast of Portugal and Galicia.

Winds on the Western Coast of the Peninsula.—The prevalence of polar and tropical winds on the western shore of the Iberian Peninsula may be considered as constant, since those from N.W. and S.W. are but inflections from them, and those from N.E. and S.E. may be considered as land winds or from the opposite quarter.

The South coast of Portugal which forms a portion of the Gulf of Cadiz is thoroughly persecuted by winds from the S.E. and S.W. quarters, and the dividing limit between the winds from these two quarters may be considered as Cape St. Vincent; so that a vessel doubling this Cape from one side or the other finds shelter from S.W. or S.E.

In like manner, for a third-part of the year, Northerly winds are found to prevail, the wind varying between N.E. and N.W. fresh with clear weather during the summer, and cloudy or showery during the winter.

From April to October the Northerly winds mostly prevail, Southerly winds blowing during the other months, that is, S.W. winds prevail from November to March, and which generally leave off at N.W. When in the fine season the *Vendaval* prevails it is moderate and seldom lasting.

Southerly and S.S.E. winds frequent from December to March, scarcely blow for twenty-four hours, for they will be light with rain about a day, and then jump to S.W. where they remain longer, and leave off at West or W.N.W. which serve for either tack.

Winds of Winter.—The bad weather season begins on this coast in November and ends in February. During these winter months those heavy rains take place, which come with S.W. and N.W. gales. The *Vendaval*, which is the byword among the seamen of these shores to distinguish the severe weather from S.S.W. to W.S.W., brings up

heavy clouds from the southward, preceded by a light mist which flies with more or less swiftness according to the strength of the wind which may be expected.

Signs of the Vendaval.—When the sky is clear, and small clouds appear which are very high and scattered, and embellish the firmament (cirro cumulus), to which navigators give the name of cielo aborrigado (mottled sky), the *Vendaval* may be expected especially in winter, as a day cannot pass without the sky being completely overcast, and the wind is settled at south. If the *Vendaval* is strong it will bring abundance of rain in the first twenty-four hours and will next change to the S.W. where it will continue for two or three days, then veering to West, and perhaps to N.W., always blowing hard, perhaps with less rain.

The appearance in the rigging of those threads called telaranas, to which we have alluded, is also a sign of the *Vendaval*. These however are mostly limited to very fine clear weather when all is calm and quiet. When this sign appears in winter a Southerly wind may be expected, which will soon freshen to a gale with rain. In summer this sign is preceded by cloudy weather and winds from the S.W. and N.W. quarters, which are those that supply rain.

Some years there are when during the whole of the winter the S.W. and N.W. winds set in more or less strong, but always accompanied by showers, the interval of clear weather between them being brief, and in which intervals the wind will shift from N.W. to North and N.E., at these points it will remain, and bring fine weather until it returns to S.W.

Backing of the Vendaval.—When the *Vendaval* drops to a calm, and showers cease without any wind from the N.E., the S.W. wind may again be expected with a return of bad weather, far worse than the former. But in order to have any confidence in the weather, the *Vendaval* must take its normal course, that it should terminate at N.W., and that from thence the wind should change to N.N.E. or N.E., when it would be settled for several days.

The North-easters in winter are also attended with an overcast sky and occasionally showers accompanied with snow or hail, but in general they bring clear weather. In summer when they blow hard they are accompanied by a mist so that the coast cannot be seen from twelve to fifteen miles off.

When about the end of winter the ground is saturated with wet, this will prevent the *Vendaval* from reaching the coast, and vessels which may be running from bad weather at sea to some inlet, find the wind will change to the South and S.E. on nearing the coast and thus retarding their approach to it. S.E. winds however are rare, and when they blow in winter they are attended by heavy snow showers and are very strong. The Easterly wind is always the coldest.

The Northerly winds, properly so called, vary between N.N.E. and N.N.W., and mostly are found on the west shore of the Peninsula, they prevail from May to September, interrupted with light *Vendavals*, and almost always are attended with clear skies.

The *Vendavals* of this season which are almost always of brief duration, generally bring cloudy weather, which does not clear away until the wind veers to N.W. on its way to North. In proportion to the density of the clouds which the *Vendaval* brings, the less most probably will be the duration of the wind. Notwithstanding the prevalence mostly of Northerly winds in summer on this coast, it is also very liable, and especially that of Galicia, to waterspouts and showers, the effects of opposing winds.

Waterspouts.—These phenomena will form with an Easterly wind or perhaps some off-shore wind, at the time when the wind at sea is from S.W., and as the clouds which this wind accumulates over the coast are driven back by the off-shore wind a waterspout is formed.

Sometimes the waterspout is formed instantaneously, accompanied by heavy thunder and rain, for which it is necessary to be prepared by shortening all sail, for they usually are attended with much wind. These opposing winds occur in August and September, principally in summer when there is much heat.

As there are years with hot seasons on the coast of Cadiz and the Strait of Gibraltar from the *Levanters*, so also are there others of cold seasons from Northers on the coast of Portugal. Nevertheless in these same years there are many marked changes, which prove how difficult it is to determine the limits of the changeable wind on any particular coast.

The following table formed from meteorological observations made at Lisbon will give a good idea of the winds which have prevailed there for two consecutive years.

Statement of the prevailing winds at the mouth of the river Tagus from the first of October, 1863, to the end of September, 1865, with the heights of the barometer and thermometer corresponding to the wind.

Winds.	No. of Days it lasted.	Barometer		Thermometer		Observations and Remarks.
		Max.	Min.	Max.	Min.	
Calm ..	10	} They are generally clear and fresh during all the year, especially from May to September.
North ..	128	774.2	753.6	24.6	2.2	
N.N.E. ..	96	773.8	753.3	27.5	4.2	
N.E. ..	110	775.0	751.7	29.1	2.3	
E.N.E. ...	28	768.2	759.5	29.9	2.0	
East	38	772.1	750.4	27.1	4.4	} They are fresh and attended with rain or snow from October to April, especially with winds from S.S.E. to W.S.W. Fogs are frequent from October to February and generally with S.E. to S.W. winds.
E.S.E. ...	18	768.5	756.3	23.3	10.2	
S.E.	9	765.6	745.7	19.8	10.1	
S.S.E. ...	2	768.6	764.6	19.2	8.2	
South ..	28	764.4	752.2	24.8	9.5	
S.S.W. ...	45	768.4	745.2	21.6	9.1	
S.W.	50	773.2	741.1	20.0	8.9	
W.S.W. ..	25	767.7	744.2	22.6	8.9	
West ..	26	768.6	755.3	25.7	6.2	
W.N.W. ..	13	763.5	744.0	21.7	10.2	
N.W. ...	49	773.6	756.3	26.3	5.5	} They are fresh with snow showers and often rain in summer. In winter fresh and showery.
N.N.W. ..	56	770.4	755.9	25.0	8.4	

The foregoing may be resolved into the following table—

Months of Observation.	Winds of N.E. Quarter.	Winds of S.E. Quarter.	Winds of S.W. Quarter.	Winds of N.W. Quarter.
	Days	Days	Days	Days
1863, October	12	5	8	5
November	24	5	0	1
December	26	0	2	2
1864, January	19	7	2	3
February	12	0	11	5
March	13	3	11	2
April	12	3	6	6
May	14	5	8	6
June	15	4	3	8
July	14	5	3	9
August	18	2	5	6
September	19	6	2	3
October	8	3	17	4
November	13	3	6	8
December	5	2	4	10
1865, January	6	2	15	8
February	15	2	3	8
March	20	0	4	7
April	9	4	10	7
May	15	2	9	5
June	14	4	5	6
July	20	0	1	10
August	14	0	6	11
September	17	0	7	5
In the Two Years ..	363	67	148	144

From the foregoing we may conclude that winds from the Northward, or those from between N.W. and N.E., both inclusive, have prevailed for 439 days

From South or between S.E. and S.W. 134 "

From East or between E.N.E. and E.S.E. 84 "

From West or between W.N.W. and W.S.W. 64 "

So that the prevailing winds for the period of two years were from the North, with a remarkable preponderance over the rest, and they were the most lasting in the months from May to September.

It must be noted that the observations were made at nine a.m., a time when perhaps the wind for the day is not established according to that outside, especially in winter; and that the place of observation was the observatory, which besides being well up the river Tagus (or rather the Lisbon estuary) is subject to the prevalence of the land

wind which commences at the lower part of the Tagus. Observations carefully made at the lighthouse on the Berlings will give us hereafter a better idea of the winds which prevail on the western coast of the Peninsula. Nevertheless we may be satisfied from the above results that the prevailing winds on the coast of Portugal are Northerly, those of the opposite quarter prevailing from October to April, and which alternate with those from West and N.W.

CURRENTS.

Currents are the manifestations of that great system of circulation in the waters of the ocean, arising from the same causes which produce those of the atmosphere, viz., heat and cold; and it may be said that there is a complete similarity between the movements of each, differing only in velocity in consequence of the great difference in the densities of the two fluids.

Besides this cause there are others perhaps as powerful; not only in promoting them, but in contributing to their strength; also proceeding from the same origin of heat and cold. Such are the various degrees of pressure of the atmosphere on the surface of the sea and the impulsive power of the winds.

All these agents combined, keep the waters of the ocean perpetually moving; forcing them to pass to and fro between the equatorial and Polar regions. So that from whatever part of the ocean a current may run, another of the same extent and force is set in motion in an opposite direction, thus always preserving a due equilibrium.

Diversity in Currents. The great masses of water in its motion from south to north and north to south (setting aside the disturbing effect of the diurnal motion of the earth), rush along the coasts of the great continents, islands, and gulfs in their irregular distribution on the surface of our planet and in encountering these obstacles alter their course, become divided, run counter to each other, taking different directions and forming the eddies and ripples which we so often meet with. Such perturbations are also common to the currents of the atmosphere, the effect of which we find sometimes to our cost.

At sea, by means of our reckonings and accurate observations, we can detect the set and velocity of the currents, which on the coasts are still more readily detected, being familiar to coasting vessels, and even to fishermen of the deep sea who experience them with the nets which they use from their boats, as they watch over their stone moorings.

Doubtless the current is one of the most formidable enemies which the sailor has to deal with: for besides being imperceptible, it is also variable, and as yet no means have been invented of immediately knowing its strength and direction with that facility which we have of seeing the progress and course of the ship. Hence the necessity of collecting all the information we possess of the currents on every coast, bay, or channel, and describing them for the mariner, in order that he may provide against his insidious and dangerous enemy.

Yet the subject is one of difficulty, and it is only with time and

observation, we can arrive at general conclusions as to their force and direction in any particular locality; for they never are the subjects of continual observation, as is the case with meteors, for which a multitude of instruments have been invented, and observatories specially established for them, while collecting the secondary notes of navigators and fishermen is the imperfect mode of obtaining an *approximate* idea of these.

Currents of the Bay of Cadiz. Confining ourselves here to Cadiz Bay, we might observe that there is a general current running from south to north and from north to south, inclining to either quarter according to the direction of the wind that is blowing, or that which is about to blow; for sometimes the current runs in anticipation of the wind which will afterwards add to its strength, and the navigator satisfies himself of the quarter from whence the wind will come by the direction of the current.

It is only in the immediate neighbourhood of the mouth of the Strait of Gibraltar and within it, that a constant current is observed, setting to the eastward, occasioned by a small difference of level supposed to exist between the ocean and the Mediterranean, in consequence of the expenditure of water in that inland sea from an excess of evaporation beyond precipitation; a loss which the Atlantic re-supplies.

Rennell's Current. An English officer, Major Rennell, in reference to the above current considers, that in the space between the parallels of 30° and 45° N. and to the east of the meridian of 14° W. longitude, there is a tendency of the waters of the Atlantic to set towards the Mediterranean at a rate varying between twelve and twenty miles in the twenty-four hours. We think this is a bold decision and somewhat of an exaggeration.

If with the above data we reduce to figures the surface of the ocean in question, we shall find it represents forty-two thousand square leagues, and however superficial we may allow the stream of this extensive surface to be, as it runs towards the Strait on reaching its mouth, so large a volume would be collected that it would not be sufficiently large to receive it, and the result would be that the neighbouring shores would be inundated, and the strength of the Strait current would be more than we could calculate.

Current of the Strait of Gibraltar. That there is a perpetual current in the Strait of Gibraltar is no doubt a fact proved by every-day's experience; but sometimes even this current is quite insignificant, it is only felt at its edges, and a few leagues to the west of the entrance it is scarcely perceptible.

Every-day's experience, and history itself, informs us that this current is of no great dimensions. The ships which suffered by loss of masts and sails after the battle of Trafalgar, far from being swept into the Mediterranean by this supposed current drifted to the coast of Cadiz and the Gulf of Huelva, and the pilot of the *saluca Real Carlos*, burnt within the Strait in the year 1801, reports his being thrown on Tangier Beach instead of having been carried away by that

current.* Nor do we remember any bottles thrown overboard for the purpose of detecting currents being found on its shores.

The difference of level between the two seas is not so much as would occasion any extraordinary current; and it might altogether have escaped observation if the constantly easterly set had not suggested it. Vessels that have been perpetually cruising off Cadiz and its vicinity on many occasions have never troubled themselves about the easterly current, for it has never affected them, and they have been concerned only about being set into the Strait, when becalmed in the mouth of it.

Counter Currents in the Strait of Gibraltar. There is however a periodical difference of level which passes unperceived although of importance, sometimes between the waters to the westward of the Strait and those not very far off to the eastward. This difference of level, about 3·3 m. ten feet occasionally, and which is the effect of the tides, nevertheless does not contribute in any way to increase the easterly current into the Mediterranean.

It is very well known that in this sea there are scarcely any tides, excepting in some places, one of which is at the Strait itself communicating with the two seas. From Malaga to the eastward where the tides go on decreasing, and become so imperceptible that on the meridian of Cape de Gata all trait of this great phenomenon is gone, while on that of Cadiz which passes not very far from the mouth of the Strait spring tides rise 3·3 m. ten feet. And notwithstanding this difference of level of ten feet in a distance of two hundred miles, far from increasing the easterly current, this is diminished by it during the flood tide.

When the tidal wave of flood passes in its course from south to north along the African coast, the Gulf of Cadiz and the coast of Portugal, it does not penetrate (as one would at first suppose) into the Mediterranean, increasing the strength of the general current; but draws along with it its waters, which in obedience to lunar action rise in the Strait and mingle with the great tidal wave to pursue with it its ocean course. Consequently, during the flood, the waters of the Mediterranean as far as a certain limit which is known as not beyond the limit of Almeria, commence moving to the westward on the coasts. This movement is the more perceptible as the mouth of the Strait is approached, so that at the points of Europa and Almeria the tidal current to the westward interferes with the eastern current of the

* This accident occurred within the Strait in the night of the 12th of July. The *Real Carlos*, supposing that she was engaging one of the enemy's vessels that were hovering about the rear of the French and Spanish squadron on its way from Algeciras to Cadiz, attacked her companion the *Real Hermenegildo*. Unfortunately the mistake was not discovered until they mutually closed to decide the action, and both were burnt; nearly all the crew of both being lost. Forty men were saved by a boat and six or seven in the fishing boat belonging to the crew of the *Carlos*, picking up also the second in command of the *Hermenegildo* from the water. The pilot above mentioned was also saved.—*La Marina por Travieso*, vol. 3, Madrid.

Strait, in the middle of the Strait reducing its strength, and narrowing its limits.

When the ebb is established, the waters of the Strait return to join those of the Mediterranean, and yet a large amount of them joins the ocean tidal wave on its way to the South; the rest running through the Strait to the eastward, and even perhaps, with more strength than they had on the flood.

It is when these currents are running within the Strait, that the most considerable deviations and counter currents are produced; of which a good idea is given in the general directions for the Mediterranean, and it is by availing themselves of them that the coasting vessels pass through the Strait against westerly winds; and when once clear of its western entrance they need no longer trouble themselves about any current which may take the direction of the Strait, for they get to windward without any difficulty.

The wrecks of vessels on the coasts of Cadiz and Huelva, as well as those on the African coast, quoted by Major Rennell, are occasioned by the current from S.W. to N.W. principally. These may be considered as inflections of the general current from south to north and north to south, in the same way as we may recognize the S.W. and N.W. winds as inflections from the south and north.

Polar and Equatorial Currents. When the ocean waters run from south to north, by this movement they most likely reduce the atmospheric pressure experienced then in the polar regions, originated by the intertropical winds. The S.W. wind with its impulsive force would naturally affect the direction of the current setting northward and compel it to run to the N.E. and drifting vessels over to the African and European shores. Then an atmospheric re-action takes place that acquires a very low temperature in the northern latitudes and exerts a considerable pressure on the surface of the sea, compelling its waters to flow towards temperate regions where there is also going forward a constant displacement arising from evaporation. By this new change of place the current from north to south is formed, impelled by the N.W. wind which is an inflection of that from the north, and it consequently assumes a S.E. direction, which also throws vessels on the coasts above mentioned.

In the perpetual transfer of the waters as thus stated, the different currents take place as we find them on the coasts, assuming that direction which their bays, islets, and channels impart to them.

In the open sea doubtless the winds play a random game in directing the currents. When after a calm any particular wind sets in, the surface waters make a slight wave carrying them gradually to leeward, their magnitude being proportioned to its strength until waves of a considerable size are formed, which agitate the ocean to great depths; and seamen know pretty well the force of these huge masses of water, which sometimes may be a hundred feet in depth.

Perpetual Currents. Certain it is that there are currents following constantly the same direction, that will be running against the prevailing wind, like those of the Bosphorus, the Strait of Gibraltar,

the Florida Channel, etc. But these are but the results of physical causes and peculiarities affected by the form of the seas or gulf adjacent to the Atlantic.

The ocean current scarcely ever changes its direction so readily as that of the atmosphere, as one should expect from the difference in density of the two fluids; but the equilibrium of the waters being once re-established, they obey the impulse of any agitating cause.

It is often observed that before a wind comes home upon a coast, the waters are moving in the same direction as if they were driven by it, and the navigator finds this out before the wind has come.* It is then that the current is the prelude to the wind which is coming in the same way as the swell indicates the wind which produces it; and should this not have arrived at the place of observation it is no reason that it should not be found in another locality perhaps not very far away.

Currents from the Southward. When the S.W. wind prevails in the Atlantic in the vicinity of the Strait, which wind expands the atmosphere, the level of its surface is raised, and that of the Mediterranean not being raised by the same cause, the difference of level becomes greater and the easterly current stronger. But both levels obeying equal pressure from their contiguity it may be said the difference of level is constant. However a stronger easterly current is always found when the wind is blowing hard from the westward and this has its explanation.

Always when these winds are general in the Mediterranean the waters accumulate in its interior and in some places attain an extraordinary elevation.† This accumulation towards the interior naturally occasions a deficiency at its western end which the Atlantic has to make up. But the wind ceases and takes the opposite direction and also the waters, causing a lower level in both seas and even a temporary paralysing of the easterly current. It is well known that occasionally the current through the Strait from the Atlantic is N.E., and that this will occur when a strong *Levanter* is blowing in the Mediterranean that produces a transfer of the waters contrary to that which we have pointed out.

During the hard *Vendavals* a strong current runs from south to north in the Gulf of Cadiz, that assumes the direction of the coast off which it runs. On the African coast it takes a N.E. direction, north and N.N.W. on the coast of Cadiz, a small portion penetrating the Strait and the rest running N.W. and west by the Gulf of Huelva and the Algarve coast; passing Cape St. Vincent it joins the general current. In the middle of the gulf its direction is N.E.

After this mass of water which comes from the intertropical regions

* There was a remarkable instance of this in the China Sea, in the loss of H.M.S. *Reynard*, in 1851, Commander P. Cracroft. A current had been setting this ship for a whole day in a calm towards the Paracels in the China Sea, a heavy gale following it the day after, which was the occasion of her loss.—ED.

† Vice Admiral W. H. Smyth quotes elevations of twelve English feet on the coast of Tuscany with strong *labeches*.

has made this passage within the Gulf of Cadiz, it mingles with the larger mass passing outside and both run along the coast of Portugal and Galicia, following its sinuosities, then passing Capes Finisterre and Prior, run along the Bay of Biscay and enter the English and St. George's Channels, to expend itself in the northern seas. It is certain that with the above mentioned winds, strong currents are experienced in those channels, and in the estuaries and ports of their coasts, there are astonishing accumulations of water.

The current of which we are speaking affords us good evidence of its efforts by the great rise above the ordinary level of the sea in the Gulf of Cadiz; for in its bays, ports, and estuaries, it exceeds by two and three feet the usual rise, and makes the establishment, or hour of high water later. This extraordinary rise of itself reveals a current. Still this accumulation in the Gulf has its limit, and the waters which it cannot contain, repelled by the coast of Cadiz, escape to the westward to mingle with the current running northward.

Losses occasioned by this Current. To the effects of this current may be attributed the wrecks above mentioned, of the dismasted ships after the battle of Trafalgar which was followed by a *Vendaval*; and also of many ships which consider themselves to be running safely along the Spanish coast for the Strait of Gibraltar, terminating their career on the reefs of Conil and Santipetri, and others, especially before the lighting of the coast was general.

We may also cite the case of a Spanish merchant ship, which, considering herself certain of making Cape Spartel at daylight, and confident of her reckoning, found herself nearly in the midst of the breakers of Santipetri, and owed her safety to the weather enabling her to double Cape Trafalgar and to make for the Strait.

Vessels from the Strait of Gibraltar making for Cape St. Vincent with southerly winds, frequently find themselves too near the shore in the Gulf of Huelva, a condition which frequently happens with coasting steamers, and they find from experience, that with those winds they have to give the shore a good berth, on their way from Cadiz for the Strait, or for the above Cape. In this last passage, if they do not take the necessary precautions they find themselves hampered with Cape St. Mary, and in general overrun Cape St. Mary owing to the current setting then to the westward.

Vessels obliged to wait off Cadiz in a hard *Vendaval*, whether cruising or for any other reason, must not depend too much for their position on the reckoning; for they will always find themselves set into the Gulf of Huelva, and will become entangled with the Arenas Gordas when they are considered to be on the meridian of Cadiz. In such cases it is necessary to carry all the sail they can to keep to windward, and compensate for the current, and more readily to gain the parallel of the Strait.

Strength of the Current in Cadiz Bay. It is difficult precisely to define the strength of the current in Cadiz Bay in a strong *Vendaval*; but we consider ourselves as by no means exaggerating when we give it a maximum of two miles an hour between Capes Trafalgar and

St. Vincent in a N.E. and northerly direction in the middle of the Bay, and in a N.W. direction in the vicinity of the coast. This being the case it is always better to avoid lying by the wind too long in a *Vendaval* between Capes Trafalgar and Santa Maria, it being far better to get into Cadiz if possible, or keep in the mouth of the Strait to run in it if it should be convenient.

In the usual weather when the land and sea-breezes alternate with easterly and westerly winds the currents are not strong in Cadiz Bay. With established easterly winds the tendency of the waters is from east to west, and the reverse with westerly winds excepting in the western mouth of the Strait, where the current is always easterly. On the coast no other current is known than that of the tide, and this is more or less strong and of greater or less extent off shore, according to the age of the moon.

Northerly Currents. After several days of hard southerly winds, those from the opposite quarter get up; the ocean waters experience the same reaction; and although the current does not so readily change its direction as the wind does, it nevertheless soon stops and follows it, to make good the equilibrium in the equatorial regions by obeying the impulse of the N.W. wind.

On the northerly wind establishing itself after the southerly wind has ceased, it brings with it the cold atmosphere belonging to it; and in consequence a greater atmospheric pressure on the surface takes place. The waters coming from the northern seas naturally seek their way to the southward; and as the current thus formed by the aggregate force of the wind from the Polar regions, a current from north to south is produced with the same strength as we have already mentioned.

If the wind has a tendency to come from the N.E., the pressure of the atmosphere will be greater and the surface will have a considerable depression of level, probably as much as it acquires in elevation with the opposite wind.

The current which ebbs then from the English and St. George's Channels, combines with the general current, and that from the Bay of Biscay (where the depression produces a remarkable difference of level), running together in the offing of the coast of Portugal, a portion entering the Gulf of Cadiz through which it flows, and taking its course afterwards along the African coast.

In the Gulf of Cadiz with this current there is no risk whatever, for it rather sets vessels from the coast and is never so strong as the current of the south. It is observed if a considerable lowering of the level of the sea takes place in the bays and harbours, that high water does not rise to its usual height and the tidal hour is earlier.

If the wind should have a tendency to the N.W. there is also a depression of the waters from north to south, but not so considerable. With this wind, very strong sometimes, the waters are transferred to the S.E., a portion of them passing into the Bay of Biscay, where indeed they accumulate, producing an easterly current along the shore, and making it southerly along the Portuguese coast.

It may be concluded that the N.W. wind falling obliquely on the general current from north to south it compels this to take a S.E. direction. When this current falls on the Spanish shore its N.W. front is divided, the coast obliging it to take two directions, one part running to the eastward along the shores of Cantabria and the other to the south along those of Galicia and Portugal.

SIKYANA OR STEWART'S ISLANDS, AND THE SEA-SLUG.

A CORRESPONDENT seemed to be at a loss in our last number for the position of the Stewart's Islands, and imagined he had made a discovery. We here add the account which Captain Cheyne gives of them who passed some months on them, collecting the biche de mer or sea-slug, an account of which he also adds—

Stewart's Islands consist of five low coral islands, covered with cocoa-nut trees, and connected by coral reefs, forming a lagoon inside. The group is of a triangular form, fifteen miles in circumference, and visible from a ship's deck twelve miles. The easternmost and largest island is about a mile in length. It is situated in lat. $8^{\circ} 24' 24''$ S., long. $163^{\circ} 0'$ E. This position will be found nearly correct; ships bound to China or Manila from New South Wales, would have an excellent opportunity of testing their chronometers by sighting this group as it lies directly in their track. The reef is steep too and may be approached to within a cable's length all round.

This little group is inhabited by a very hospitable and inoffensive race; who are of a light copper complexion. The population in September, 1847, consisted only of forty-eight men, seventy-three women, and fifty children, in all one hundred and seventy-one souls. They are without exception the best disposed natives I have met with among the islands. I resided on this group for nine months in 1847, collecting biche de mer; during which time they treated me with the greatest kindness and hospitality. Although I was completely in their power, yet I found them strictly honest; and they were so willing to work for me, that they continued to collect and cure biche de mer, day and night, until they had picked up all that the reefs produced*. The lagoon is well stocked with many varieties of fine fish, which they catch in various modes; but chiefly with nets, on the shallow part of the reefs, at low water. They live principally on cocoa-nuts and fish, and appear to enjoy excellent health.

Pigs weighing 100 lbs., can be purchased for five pounds of tobacco, or ten yards of strong unbleached American drill, or calico. They will also take shirts, trousers, blankets, knives, saws, chisels, tomahawks,

* An American brig procured 250 piculs (equal to $133\frac{1}{2}$ lbs.) of biche de mer at this group, in 1845; and I collected 265 piculs during my stay on the islands, in 1847, all of the first quality.

or small hatchets, fish-hooks, small boxes with locks and hinges, etc., in exchange for their island commodities. Strangers touching here, may allow them to come on board with perfect safety, as they are quite harmless.

They can nearly all speak more or less broken English, which they have picked up through their intercourse with whale ships, who often visit them to get supplies of cocoa-nuts and pigs, of which a plentiful supply can be at all times procured.

The little village where they reside, is situated on the lagoon side of the easternmost island. The other islands are uninhabited; and are merely visited occasionally by the natives when out fishing at night. A ship in want of refreshments, should stand close in to the large island, and hoist a flag at the main; when they will soon come off.

As my chief object in visiting the different islands in the Western Pacific, was for the purpose of forming establishments for collecting and curing biche de mer for the China market; I shall now give a description of the different species of biche de mer, together with remarks on collecting and curing it; being the result of five years' experience in that particular branch of trade:—

There are many kinds of biche de mer (a species of fish of the genus *Holothurius*) found on coral reefs in the Pacific Ocean; but only ten of these are marketable in China; each being distinguished by well known names. As they vary in price from six to thirty-five Spanish dollars per picul (133½ lbs.), it becomes a matter of great importance to obtain the superior qualities. The slug when cured presents quite a different appearance to what it does when caught; and no person, but one well acquainted with the trade, would be able to ascertain which were the first quality, by comparing the raw slug with a cured one. Again, the success of a voyage depends greatly on the knowledge possessed by the person in charge, of the localities in which the superior sorts are to be found, together with much experience in the mode of fishing, and curing them.

The superior qualities are known by the names in the Sooloo and Manila markets:—I. Bangkolungan; II. Keeskeesan; III. Talepan; IV. Munang: each presenting a different appearance, and found in different depths of water on the reefs. Bangkolungan, when caught is from eleven to fifteen inches in length; of an oval shape, brown on the back, and the belly white and crusted with lime, with a row of teats on each side the belly. It is hard, rigid, and scarcely possesses any power of locomotion. It has, however, the power of expanding, and contracting itself at pleasure. This quality is found on the inner edge of coral reefs, in from two to ten fathoms water, and on a bottom of coral and sand. It can only be procured by diving.

Keeskeesan, is from six to twelve inches in length, of an oval shape, quite black, and smooth on the back, with a greyish belly, and one row of teats on each side. When contracted, it is similar in shape to a land tortoise. This quality is found in shallow water, on the top of coral reefs, and on a bottom of coral and sand. Bankolungan and Keeskeesan fetch about the same price; and the latter being the most

plentiful and easiest caught, ought of course to be the kind most sought after.

Talepan, varies in length from nine inches to two feet, and presents the most remarkable appearance of any of the species of biche de mer. It is found on all parts of the reefs, but chiefly in from two to three fathoms water. It is of a dark red colour, and narrower in proportion than the before-mentioned kinds. The whole back is covered with large red prickles, which render it easily distinguishable from any of the other kinds. It is much softer than the black, and more difficult to cure.

Munang, is of a small size, seldom exceeding eight inches in length, of an oval shape, quite black, and smooth; has no teats or other excrescences, and is found in shallow water on the coral flats, and often among turtle grass near the shore. This is the kind which the American vessels chiefly procure at the Feejee Islands. It is worth from fifteen to twenty-five dollars per picul in the China market.

These four varieties form the superior qualities of the slug; and the following are the middling and inferior sorts;—V. *Sapatos China*, is of a reddish brown colour, and about the same size as the *Munang*. It presents a wrinkled surface, and is found adhering to the coral rocks on the top of the reefs. VI. *Lowlowan*, is of various lengths, black, wrinkled, and narrow. It is found on various parts of the reefs. VII. *Balati blanco*, is about nine inches in length, of an oval shape, and a white and orange colour; and may be easily known by its voiding a white adhesive substance, which adheres to the fingers when handled. It is found generally on the inner edge of reefs, and on a sandy bottom. Moonlight nights are the best time for collecting this sort, as they generally bury themselves in the sand during the day. VIII. *Matan* is of the same species and habits as VII. and only differs from it in colour, which is grey, brown and white speckled. IX. *Hanganen*, is generally about a foot in length; of a grey or greenish colour, wrinkled; and is found on the lagoon side of coral reefs. X. *Sapatos grande*, is about twelve or fifteen inches in length, and of a brown and white colour, wrinkled, and very inferior.

The following remarks on boiling biche de mer, are the result of a number of experiments made by me at different times:—*Bangkolongan* and *Keeskeesan* will require to be boiled about five minutes, or more, if the pot is nearly full; they require to be well stirred; and should be taken out when thoroughly heated through, by which time they will feel quite hard and elastic. The cut part of the fish, when properly boiled, should be of a blue and amber colour; and feel firm like Indian rubber. If the pot is only half full, they will require to boil fully ten minutes, before the cut part becomes of the blue and amber colour. The *Talepan* and *Munang* require to be boiled fully ten minutes. The *Munang* dries very quickly; but the *Talepan* is very difficult to cure, and often requires two boilings before it will dry. The *Sapatos China* requires to be boiled about fifteen minutes; if properly boiled, it will dry very quickly. *Balati Blanco* and *Matan* require very little boiling, say three or four minutes if the pot is nearly

full. They should be taken out as soon as they shrink and are thoroughly heated through. The Hangenan will require to be boiled about twenty minutes. This sort must be very carefully handled when raw, as it will break in pieces if held any time in the hand. It appears to me that there are two ways of boiling biche de mer equally good. The first is to take them out when boiled about a minute, or as soon as they shrink and feel hard; the other method is to boil them as before stated; but in boiling either way, the fish ought, if properly cooked, to dry, like a boiled egg, immediately on being taken out of the pot. If curing a large quantity at a time, I should prefer boiling them slightly at first; and when half dry, I would reboil them. This method I have tried, and find it makes the biche de mer look much better, and less wrinkled when dry. Although they require a little more time in drying, if reboiled, yet I am convinced they would sell better. Biche de mer dried in the sun fetches a higher price than those dried over a wood fire; but this method would not answer in curing a ship's cargo, as they require fully twenty days to dry; whereas by smoking them they are well cured in four days.

Much skill is required in drying biche de mer, as well as in boiling it, as too much heat will cause it to blister, and get porous like sponge; whereas too little heat again, will make it spoil, and get putrid within twenty-four hours after being boiled. There is, likewise, great care and method required in conducting the gutting; for if this be not properly attended to, by keeping the fish in salt water, and from exposure to the sun, it will, when raw, soon subside into a blubbery mass, and become putrid in a few hours after being caught.

A vessel fitting out for a biche de mer voyage, should be well manned and armed; and have good strong boarding nettings; with waterproof arm-chests for the tops, sufficiently large to hold a dozen muskets each. She will require to have a number of large pots or boilers on board, similar to whalers try pots; and skimmers, ladles, fire-rakes, shovels, buckets, tubs, cross-cut saws, and axes; and, if procurable, a quantity of bricks to place the pots on, as the stones found on the coral islands will not stand the fire.

The first thing to be done on arrival at an island where the slug is plentiful, is, to erect a large curing-house on shore, about ninety feet in length, thirty feet in breadth, and the sides about ten feet in height. These houses are generally built of island materials; and thatched with mats, made by the natives, of cocoa-nut leaves; the thatch must be well put on, so as to prevent the rain from penetrating. The sides are likewise covered in with these mats, and a small door should be left in each end. Platforms, or *batters*, for drying the slug on, are then erected along one side of the house. They should run the whole length and be about eight feet in breadth; the lower one about breast high from the ground, and the upper, three feet above that. The frames are generally made of cocoa-nut trees, and pandanus; and covered with two or three layers of split bamboo, or reeds, seized close, so as to form a sort of net-work for the fish to lie on. Much care and skill is required in the construction of these *batters*, or platforms, so as to prevent the

biche de mer from burning, which it would be liable to, were they not properly fitted. A trench, about six feet in breadth and two in depth, is then dug the whole length of the *batters* for the fires. Tubs are placed at short distances along the side of the trench, filled with salt water, and a good supply of buckets kept in readiness, to prevent the fires from blazing up and burning the fish, or platforms, as well as to regulate the degree of heat necessary for drying the slug.

The process of curing is this:—The biche de mer is first gutted; then boiled in those large pots; and, after being well washed in fresh water, carried into the curing-house, in small tubs, or baskets, and emptied on the lower *batter*, where it is spread out (about five inches thick) to dry. The trench is then filled with firewood, and when the *batter* is full of fish, the fires are lighted, and the drying process commences. From this time the fires must be kept constantly going, day and night, with a careful officer and regular watch to attend to it. On the afternoon of the following day, the fires are extinguished for a short time, and the fish shifted to the upper *batter*, having been first examined, and splints of wood put into those which may not be drying properly. When this is done, the lower *batter* is again filled from the pots, the fires immediately lighted, and the drying process continued as before. The fish on the lower *batter* must be turned frequently during the first twelve hours. On the second day (the fires having been extinguished as before) the slug on the upper *batter* is shifted close over to one end, to make room for those on the lower *batter* again; and so on, as before, for the two following days, by which time the first day's fish will be properly cured. It is then taken off the *batter*, and, after having been carefully examined, and those not dry put up again, the quantity cured is sent on board the vessel, and stowed away in bags. But should the ship be long in procuring a cargo, it will require to be dried over again every three months, in the sun, on platforms erected over the deck, as it soon gets damp, unless when packed in air-tight casks.

If the biche de mer is plentiful, and the natives bring it daily in large quantities, forty men will be required to perform the work of a house of the above size; and the pots will each require two hands to attend them. These curing-houses consume a large quantity of firewood daily. When biche de mer is cured, and stowed away, great care should be taken to prevent it from getting wet, as one damp fish will speedily spoil a whole bag.

EXPECTED STAR SHOWERS.—Mr. A. S. Herschel, in an article on November meteors, states that he expects a very large star shower on the 14th of this month, but unfortunately, at half-past seven a.m., a few minutes before sunrise at Greenwich, it will cross the medial line; and at about nine o'clock a.m., when the sun is fairly risen in Britain, supposing that the course of the meteoric stream keeps its appointed place, the earth's passage across the current will be complete, and the rain of fire balls and falling stars, should its return be punctual, will cease. During the night preceding and that following the height of the shower no doubt many meteors will be seen.

JAPAN.—THE MINT.

THE Government Mint consists of three establishments situated in different parts of Yeddo, there being one for each metal. The gold mint has recently been destroyed by fire, but a description of the silver mint, the only one yet visited by foreigners, may not prove uninteresting. The building, which consists of an agglomeration of wooden sheds of the poorest description, is situated in a narrow street in the mercantile portion of the capital. The eye is attracted on entering by groups of men squatting on the ground, occupied in weighing, hammering, cutting, sorting, and packing. A few officers circulate from shed to shed preserving order and issuing directions. The process of minting an ichibu is thus conducted. A lump of silver of the necessary fineness, obtained either from the Government mines, or by melting down Mexican dollars, is placed in an iron ladle and reduced to a molten state by means of a charcoal fire and a pair of blacksmith's bellows. It is next poured into a mould, from which it is taken out in the shape of thin rectangular bars, which are immediately thrown into a tub of cold water. On being taken out they are handed to a man seated on the ground, who with a pair of large fixed scissors, shears off all jagged pieces adhering to the angles. They are still further improved by hammering. They are now handed to another man who, holding a balance in his left hand and weighing them one by one, divides them into different parcels according to their weight. Another man then takes a bundle at a time and cuts off from one end of each bar what he estimates will reduce it to its proper weight, which is nineteen momme. Of this weight six fung are allowed for waste in the subsequent processes, leaving a net weight of 18·4 momme to the bar.

The next process is that of dividing the bar into eight equal portions of the size of ichibus. This is effected by a fixed pair of shears. The workman takes a bar, cuts it as nearly in half as his practised eye will enable him to do; he then divides the halves into quarters and these again into eighths. The weighing here re-commences and tests the skill of the cutter, the pieces being separated into different groups according to their weights, and those which are too light being rejected. The scissors are again in requisition to reduce the heavy ones to their proper weight, after which the light ones are again weighed and weeded out. They are now heated white hot in a charcoal fire, plunged into water, boiled and washed in a kind of brine from which they come out with a moderately bright surface. They are next very slightly milled on the two sides, and more deeply on the edges, by means of a milled hammer. They are now ready for stamping which is performed in the following manner. A man places with his left hand one of the pieces on a stationary die, while with his right he places on the top the other die, which is moveable. A second man sitting on a stool is armed with a huge hammer gives one blow on the upper die, and the coin is struck. The blows are dealt in

rapid succession, and the whole scene reminds one of a blacksmith's shop. The coins are now passed on to another man who arranges them in little frames in such a manner that they are standing about a hundred together on their edges. Boys are now employed to punch small stars on the edges by means of chisels and hammers. The coins are now weighed one by one for the last time, and the light ones rejected. They are not yet, however, current coins of the realm, the Imperial Stamp being wanting. This is added to each by means of another stamped chisel and mallet, and the coins are complete. They are, lastly, rolled up in paper packets of a hundred, each packet is weighed, and marked with a seal which serves as a guarantee of its contents, and gives it currency as one hundred ichibus.

Though every operation is performed in so primitive a manner, perfect order prevails in the establishment, every man goes through his portion of the work in silence and with the regularity of clockwork, and many evince considerable skill. There are about three hundred hands employed in the building. When the men enter in the morning they are made to divest themselves of their own clothes and put on others belonging to the Mint. At the end of the day's work, a gong sounds, when the somewhat curious spectacle is presented of three hundred men springing from the ground on which they had been seated, throwing off their clothes, and rushing, a naked throng, to one end of a yard. Here they pass through the following ordeal in order to prove they have no silver on them: their back hair is pulled down and examined, they wash their hands and hold them up to view, they drink water and then holloa, and, lastly, they run to the other end of the yard clearing two or three hurdles on their way; after which performance they are allowed to put on their own clothes and depart. The Japanese silver mint has been only twice, it is believed, entered by foreigners; the apparent absence of all restrictions with regard to touching and handling the coins would point to the probability that it is not often open to the public, but, even if it were, the manners and customs of the country are not such as would preclude a mixed assemblage of visitors from going over it and remaining to the end.

The quantity of silver at present being coined daily is 50,000 momme, which, at the rate of 2·3 momme to the ichibu, gives a daily total issue of over 21,000 bus, or about £1,500 sterling. The whole of these are produced by the simplest manual labour unaided by a single piece of machinery.

By the Tenth Article of the Treaty between Great Britain and Japan, which was copied from the corresponding Article of the American Treaty already quoted, the Japanese Government have bound themselves "for the period of one year after the opening of each port, to furnish British subjects with Japanese coin in exchange for theirs, equal weights being given, and no discount taken for recoinage." On the 1st of January, 1868, the Japanese have engaged to throw open the ports of Yeddo, Osaka, and Hiogo, to the Treaty Powers. They will thus be bound during the whole of the year 1868 to supply ichibus at those ports weight for weight against dollars,

that is, at the rate of 311 bus to the 100 dollars, the average price for some time having been about 300 bus; in other words the Government will pay a penalty of nearly 4 per cent. to foreign merchants on the excess of exports over imports. Now, according to the last published Returns, this excess at the port of Kanagawa-Yokohama alone amounted to about £1,000,000 sterling, and it is certain that no one will exchange his dollars at Yokohama at 300 when he can get 311 at Yeddo, only twenty miles off, it is evident that, supposing Trade Returns and exchange continue the same, a loss will be incurred by the Government of £40,000 on the trade of Kanagawa alone.

The Japanese Government took the first step in view of this difficulty when they concluded the Convention of June 25th, 1866, the Sixth Article of which reads thus:—

“In conformity with those Articles of the Treaties concluded between Japan and foreign Powers which stipulate for the circulation of foreign coin at its corresponding weight in native coin of the same description, dollars have, hitherto, been received at the Japanese Custom-house in payment of duties at their weight in boos (commonly called ichibus), that is to say at a rate of 311 bus per 100 dollars. The Japanese Government being, however, desirous to alter this practice, and to abstain from all interference in the exchange of native for foreign coin, and being also anxious to meet the wants both of native and foreign commerce by securing an adequate issue of native coin, have already determined to enlarge the Japanese Mint so as to admit of the Japanese Government exchanging into native coin of the same intrinsic value less only the cost of coinage, at the places named for this purpose, all foreign gold or bullion in gold or silver that may at any time be tendered to them by foreigners or Japanese. It being essential, however, to the execution of this measure that the various Powers with whom Japan has concluded Treaties should first consent to modify the stipulations in those Treaties which relate to the currency, the Japanese Government will at once propose to those Powers the adoption of the necessary modification in the said stipulations, and, on receiving their concurrence, will be prepared from the first of January, 1868, to carry the above measure into effect. The rates to be charged as the cost of coinage shall be determined hereafter by the common consent of the Contracting Parties.”

In accordance with this Article arrangements have already been made for obtaining from France the machinery required in a Mint on an European model. Immediately on its receipt, and on the arrival of persons fitted for the undertaking, a new Mint will be erected at Yeddo, and coins at once struck. It is understood that a new silver coin will be issued equal to 4 ichibus; its shape will be circular, and it will replace the gold *rio* or *kobang*, which has already almost disappeared. The immense superiority in every way of the coins struck by the new Mint will be so apparent that it will probably not be long before the rectangular *ichibus* will be replaced by others of a circular form.

Concurrently with these changes, it is not unlikely that the Japanese Government may adopt a measure which has been already brought before them of selecting a single coin for their standard of value. Hitherto the impracticable plan of a double standard has been attempted; gold and silver are both legal tenders; the result has been what it must ever be: the dearer coin has replaced the cheaper; the ichibu has driven out the rio from circulation, and silver is practically the only medium of exchange.

It is, perhaps, of little importance which metal be adopted for the standard. If it be silver, as it probably will, and the Government recommence the issue of gold coins, they will have to make them of such a weight that their intrinsic value is less than their nominal one, according to the relation which exists between silver and gold in the rest of the world, which is reckoned $15\frac{1}{2}$ to 1. By this means, and by limiting generally the supply of gold from their mines, they may hope gradually to assimilate the proportionate value of their metals to what it is elsewhere. A tendency has already manifested itself in this direction. In 1853 gold bullion was only $8\frac{1}{2}$ times as valuable as silver bullion; it is now about 10 times as valuable. This, at least, is the figure which was supplied by the Government; but the price which the little pure gold that there is in the market commands would point to a much higher one still. One momme weight of finest gold at this moment costs 6 ichibus 2 shus 300 mongsengs, or 6.66 ichibus, containing 15.33 momme weight of present coinage silver. Reckoning the touch at 88.523, which was that of some ichibus lately tested at Hong Kong, the momme of pure gold costs in the market 13.57 momme of pure silver. Its real value is, of course, somewhat less.

An application in the sense of the Article last quoted is almost daily expected by the Foreign Ministers; it will be for their Governments to consider whether, and if so on what terms, they will consent to a revision of the Monetary Article of the first Treaties. Japan will have much to urge—the unusual character of such stipulations and the entire absence of reciprocity; the losses she has already suffered in attempting to carry them out, and the unreasonableness of the provision which compels her to purchase in the dearest market a commodity for which she may have no need.

Whatever arrangement be ultimately agreed to, it will be important that adequate means be taken to insure an invariable standard for the coins which may be in future be put into circulation. It has been assumed in this Report that 311 ichibus are intrinsically worth 100 dollars, that having formerly been their value, and that being the rate at which they have generally been calculated, though, where both coins vary in weight and touch, it is evident that it can never have been more than a rough average. There is reason to fear that some of the late issues from the Japanese Mint have been of somewhat inferior silver. In converting, on a recent occasion, at the Hong Kong Mint a parcel of ichibus into dollars, it was found that their touch was only 88.523, and that it required 315.63 bus for the

coinage of 100 dollars; making a trifling allowance for waste of silver in the process of melting, it may be reckoned that 100 Hong Kong dollars contained as much pure silver at 315½ bus. Here is a deterioration of 4½ bus in 100 dollars, or about 1½ per cent. When Japan possesses a proper Mint, there will be no excuse if coins of uncertain weight or touch are allowed to be issued. Such a mistake would defeat the object of a free Mint. As to the standard of fineness which might be adopted, considering the important position held by the dollar in the far East, and the increased security there will be for its invariable weight and quality now that a Royal Mint exists at Hong Kong, it would seem that the Japanese Government could not do better than adopt the standard of the Hong Kong Mint, which is believed to be 89·79 fineness.

An impression seems often to have prevailed that by some cunning artifice, some inexplicable legerdmain, the Japanese Government will always be able to turn any new measure which may be agreed on regarding their currency to their own advantage. It is the opinion of the writer that an examination of the past hardly leads to such a conclusion. The Japanese would appear to have been more sinned against than sinning. When Japan first issued from her seclusion and opened her ports to foreign intercourse, her rulers were too ignorant of the value of their own metals and of the ways and dealings of foreigners to be capable of much mischief. They saw with dismay their gold flow from the country, but were either ignorant of the cause or impotent to deal with it. As was remarked a few days ago by an officer in the Finance Department: "If foreigners knew little in those days of Japanese currency, the Japanese knew less." There have been ignorances and errors on all sides: the past cannot be recovered, though it may serve as a beacon to guide the future.

The coins now in circulation in Japan may be enumerated as follows:—

1. The rio or kobang, a thin, oval, gold coin weighing ·88 momme (51·25 grains troy). According to assay made in the English Mint in December, 1862, a specimen of this coin weighed—

Gold	...	...	..	...	Oz.	or	Gr. troy.
Silver	...	...	...	...	·0618		29·664
Copper	...	...	...	...	·0445	"	21·36
					·0004	"	·192
Total	...	...	...	...	·1067		51·216

Its intrinsic worth was accordingly estimated at about 5s. 6d. sterling. The kobang is valued at 4 ichibus. It is now but rarely coined, and is fast disappearing from circulation, though under the name of rio it is still the nominal money of account.

2. The bu or ichibu, from "ichi," one, and "bu," a portion, is an oblong, silver coin, which should weigh, when new, exactly 2·3 momme (grains troy 133·95). Owing, however, to defective mintage, there is considerable variety in the actual weight of different coins all

equally new. A great many of them are made of Mexican dollar silver in the proportion of 311 to 100 dollars; their intrinsic value has accordingly been estimated at 1s. 4 $\frac{1}{2}$ $\frac{3}{4}$ d. sterling. Four ichibus are nominally equal to 1 rio.

3. The nibu, or 2-bu piece, a yellow oblong coin composed of gold and silver mixed. Its proper weight is 1·6 momme (93·184 grains), and it should contain ·35 momme (20·384 grains) of gold and 1·24 momme (72·217 grains) of silver. Its nominal value, as its name implies, is 2 ichibus, or half a rio.

4. The ishu, a small oblong silver coin, should weigh when it leaves the mint exactly half a momme (29·12 grains). Its nominal value is a quarter of an ichibu, but its intrinsic worth is rather nearer one-fifth of that coin. It is composed generally of Mexican dollar silver, or silver of very nearly the same standard.

5. The nishu, or 2-shu piece, is a silver-gilt coin of similar shape to the other rectangular coins. Its value is two of the last denomination, or a half-ichibu. Its weight, owing to the nature of its composition, is immaterial. It is, moreover, but little coined now, and will probably soon disappear.

6. The zeni, or mongseng, is now an almost purely iron coin of hardly any intrinsic worth. Its shape is circular, and, like the Chinese kas, it has a square hole in the centre for the purpose of stringing. Its nominal value varies from time to time. At present it is reckoned at one-1,700th of an ichibu. A few months ago it was reckoned at 1,600 to the ichibu. Though the coinage of the zeni has not been formally discontinued, none have for some time been struck at the Tycoon's Mint. The right of coining it is, however, allowed to certain of the Daimios. The iron coinage of the Prince of Sendai obtains currency in Yeddo. Prince Satsuma issues an iron coinage, but being especially intended for the Loochoo Islands, it is of another shape, and does not obtain currency in the Tycoon's territories.

7. The hachi-mongseng, or 8-mongseng piece, is a mixed iron and copper circular coin, with a square hole in the centre. It is the very same coin which formerly passed as a shimongseng, or 4-mongseng piece. It is now no longer issued.

8. The tempo, called also hiyaku-mongseng, or 100-mongseng piece, is the highest denomination of copper or bronze money, being a large oval coin, with a hole in the middle. It derives its name, "tempo," from the name of the reign in which it was introduced (A.D. 1830—1843), for the purpose, it is said, of enabling the Government to liquidate their debts at a cheap rate. According to an assay made in 1863 at the English Mint, it was found to weigh about 317 grains, and to be composed of copper, tin, and lead, in the proportions of 81, 9 and 10, which made its intrinsic value at that time to be ·446d., or about nine-tenths of a halfpenny. Its intrinsic value is less than ten of the old copper zeni or kas, but it passes for 12 hachi-mongsengs, or 96, or rather (for simplicity's sake) 100 of the new iron zenis. A few months back 16 tempos were reckoned to the ichibu, but now the number is 17, the value of the tempo being dependent on the price of

copper. The tempo is the only copper or bronze coin which is now struck. Its composition and its size are well adapted for casting, and it is decidedly the best made coin in Japan.

In addition to and alongside of the regular coined currency of Japan, there exists another uncoined and irregular currency. It has already been alluded to as having existed in former days. It consists of irregularly-shaped pieces of silver, of small fineness, and varying considerably in size; bearing, indeed, a small Government stamp, but passing according to weight. They are rarely seen in Yeddo, where the ichibu has obtained an extensive circulation, and is a more favourable medium of exchange. The existence of this currency, and the peculiar way in which it is reckoned, are calculated to give rise to some confusion in the mind of any one not well acquainted with it. At a somewhat remote period the gold rio, or kobang, was valued at 60 momme weight of this inferior silver. As the rio diminished in size and value, it still preserved its denomination of 60 momme, and when later the ichibu, or quarter-rio, was introduced, it at once passed as 15 momme, though in fact it only weighed about one-sixth.

But the anomaly does not end here. The metal lumps are so much more debased than they used to be that 100 momme weight of them are intrinsically worth only 60 of them as they used to exist, and accordingly pass current as sixty momme.

The following case will serve to explain the working of the system. A man enters a shop at Kioto, and enquires the price of a lump of standard silver bullion, which weighs exactly 10 momme. He is told, perhaps, 60 momme. He has two modes of paying this sum. The one will be to put down 4 silver ichibus, which at their nominal rate of 15 to the ichibu, is equal to momme, though in reality they only weigh 9.2 momme. The other will be to pay in metal lumps; but in this case, instead of putting down the number of mes or mommes which were demanded, he will have to weigh out 100 momme, that being the rate at which the metal lumps now pass current.

Accounts are kept on both systems of currency, varying according to place and occupation, as well as according to the subject to which the accounts refer. Thus, a horse-dealer or a carpenter will keep his books which have reference to his trade in rios, bus, and mongsengs, while a silk merchant or draper will keep his in currency momme. Government accounts are kept on both systems, though generally on the rio system.

TELEGRAPH PROJECT IN CHINA AND JAPAN.—NEW YORK, May 6th, 1867.—Dr. Macgowan, who left here last fall for China, to build a telegraph, failed to enlist Government sympathy or aid, though supported by the strongest recommendations from foreign representatives. It was said the Chinese would destroy the wires, and the government would not protect them. The enterprise was abandoned. The company purchased a cable in London to connect the coast cities. Macgowan is at Yokohama. The Japanese favour his plans, and a cable will be laid from Yokohama to Jeddo.

OUR MERCHANT SEAMEN.

IN the Police report of *The Times*, July 10th, we read that "the *Duke of Sutherland* from Adelaide arrived in the London Dock basin, Shadwell, on Saturday night, and was made fast temporarily until Monday morning, when a great many persons boarded her to solicit custom from the sailors, and among them were Jew clothiers, crimps, lodginghouse-keepers, touters, runners, and others. The prisoner, Joseph Walker, was among them, he went into the fore-castle to remove a mariner's chest and effects. A man, named George Gray, the butcher of the vessel, and now acting as shipkeeper, directed him to leave the vessel. He refused to do so and struck Gray. Daniel Anderson, the chief-mate who had the command of the ship in the absence of the Captain, went to the assistance of Gray, and he was violently assaulted by the prisoner, who struck him on the face and blackened his eye. A dock-constable, named Francis Andus, took the prisoner into custody. He was also assaulted and his coat was torn."

In the course of the enquiry, Police-sergeant Matthews of the Dock Company's own Police stated that, "the crimps, runners, Jews, touters, and lodginghouse-keepers invaded the Docks in overwhelming numbers when ships arrived, and they got on board by jumping from the swivel bridges at the risk of their lives. On Saturday night, Sunday, and Monday morning, seventeen ships entered the Shadwell-basin, and the Police officers were overpowered by two hundred and fifty or more persons."

This gives a vivid picture of what is constantly going on in the East end of London at the very time when the merchant and shipowner, whose valuable property has just been brought from every part of the world, are quietly attending Divine Service in the West, surrounded by their wives and children, enjoying the luxuries which these ships have produced.

We do not wish to rob them of one iota of this luxury which is the well earned fruit of intelligent enterprise, but we do wish that they would form a Society to consider the wants of our Merchant Seamen, and deal with them with that same intelligence which has produced so much wealth. Our seamen do not need charity but consideration. Would these gentlemen leave their own sons exposed to the temptations which came on the crews of these ships, even although their sons have the advantage of a superior education.

The very names crimp, runner, touter, are no doubt new to most of our readers, and for what were these two hundred and fifty men risking their lives in the struggle they were making to board these seventeen ships. Their number almost equals that of all the crews put together, and they only form a very small part of the many thousands who live as parasites on our seamen. Their aim was to be first to offer a glass of grog and a loan of money by which to claim their prey.

It is most common to hear sailors making good resolutions as they pace the deck during a night watch. How they will keep steady until

pay day, then go off to their friends and enjoy themselves rationally, many of the more intelligent determine to spend part of their money in the study of navigation, but too often the best of resolutions yield to the overpowering influence of three or four idle days waiting for pay day, apart from their relations and surrounded by the most overpowering temptations that can come upon a human being who has spent the last ten months in hard work with a very limited diet, and suddenly finds himself with no employment.

What parent would not rush to the rescue of a son so exposed ; but it seems impossible to get anybody to think and work for our seamen, although most of their wants are capable of being met by simple and inexpensive remedies, *when* their nation can find time to consider them.

When we heard of " A Bill to Amend the Merchant Shipping Act, 1856," we rejoiced in the hope that at last the country had awoke to the importance of doing something to improve the condition of Merchant Seamen. A society of practical men had been formed with the object of finding out what was best to be done, they have published an elaborate Report.

We read of a statesman who declared that if he died our seamen's grievances would be found engraven on his heart.

But " the mountain in labour has brought forth a mouse."

This Bill deals only with the questions of limejuice, forecastles, and medical inspection ; it is good so far as it goes, but it is a mere drop in the ocean, and will tend to irritate sooner than please our seamen, for those who do not understand the subject will suppose that all which is required has been done, and the difficulty of again bringing seamen's wants before the public will be increased tenfold, for it is wonderful how very few know anything about the trials of the two or three hundred thousand men who are at this very time manning our ships on every part of the globe.

Last year they showed signs of a strike, and we do hope that those who understand their wants will propose such additions to this Bill as will make striking quite unnecessary. Those who have spent a life amongst them, and know how simple and inexpensive most of the remedies are, feel that " out of sight out of mind " expresses their case when they experience such numerous difficulties in trying to get their wants considered comprehensively. For instance, why should seamen be kept from three to four days waiting for their pay, generally driven to borrow money, at an enormous disadvantage, from crimps, and remain under their and worse influences until pay day, before they can go home to their families or friends ?

The law as it now stands requires that they should have a quarter of their pay when their services are no more required, and the rest on pay day, but the first part of this law is very generally evaded, as if shipowners intentionally played into the hands of crimps. But this waiting until pay day (even if the shipowner does advance part of the pay) is too much for seamen whose wives and families are (as so commonly happens) at some distant port, for a ship is often consigned to another port than that she left.

Our shipowners and seamen pay heavy fees towards the support of Shipping Offices which we understand have a large balance. This should be devoted to support small Branch Offices through which the crew of every inward-bound ship should pass, and the shipping master or an assistant should see that each man gets that part of his pay which is legally due at once, take his address and promise to send him his pay and papers on pay day, if he wishes to go off to his family, so that it is not necessary for him to fall into the hands of crimps and remain idle three or four days surrounded by tempters who are too strong for human nature. Thousands of wives and mothers and children would bless those merchants and shipowners who with their mighty influence in Parliament could bring about this change in our law. And who with their own children were on that very Sunday sincerely praying, "Lead us not into temptation."

Again, married seamen have often the greatest difficulty to get shipowners to allow half-pay to their wives and families. Several will not give it. Of course this is the result of the misconduct of some married seamen who have run away. But it is hard that a whole class, who must suffer very great social privations, should have this preventable one superadded. If business men would consider the subject, a remedy might soon be found. Why should not the shipping master be authorized by Government to back the half-pay note of a seaman who has a V. G. character, charging, say five per cent., to cover risks, then the shipowner could not be a loser, and it would be infinitely better for the seamen than the present system of running up bills with shops, borrowing at ruinous interest, or letting their wives and families become workhouse paupers.

Again, shipping masters should be empowered to sell to seamen a Government annuity, they paying in lump sums whenever they like, or if they preferred it, in annual subscriptions. They should also be able to insure their lives for the benefit of their wives and families. It is very probable that many Royal Navy men would subscribe to this and so increase their pensions. The wages and effects of deceased seamen amount to a large sum each year, and might go to the benefit of subscribers.

We cannot forget that for one hundred and four years a shilling a month was stopped from the pay of every British seaman: half went to Greenwich Hospital, and the remainder was "for the relief and support of maimed and disabled seamen, and the widows and children of such as shall be killed, slain, or drowned in the Merchant Service." This was mismanaged and thousands who subscribed to it most of their sea lives are now in the workhouses of England.

Again, Sailors' Institutes or Clubs where they can get rational relaxation and refreshment are very much needed. In some ports such as Calcutta, there are always from two to three thousand British seamen belonging to ships in the port. If they go on shore, the only places open to them are dens of vice, such as Flag Street, Calcutta, where men, women, and *children* are employed to lead them astray. Here many a gentleman's son finds his ruin also, for want of a

respectable place open to the officers and crews of ships. Thanks to Sir John Lawrence, Calcutta has given a play-ground for seamen, on which we have good reason to hope it will build an Institute, and set the civilized world an example.

It is very easy to call sailors wild and reckless, but this is not fair until we have opened the way for them to escape their trammels. We have good reasons for saying, give them the opportunity and they will appreciate it, for in that very port of Calcutta, we have seen eight out of forty (who were not picked men) come clean to an Evening school after a hard day's work in all the discomforts of a tropical climate.

Again, our married seamen leave their families crowded in the single rooms of a house which was originally built for only one family. This has the most baneful effect. Now it is well known that married sailors' homes could be built to pay five per cent., and shipowners could always stop the rent from their pay. But although Social Science is making rapid strides amongst other working classes, the families of these most useful men who are left helpless through the peculiarities of a sea life, have not had any consideration from those thousands who are rolling in wealth, the result of their labour.

Such a state of things cannot last long. The rational way of dealing with the subject would be if the merchants and shipowners of England would form "a society to consider how they can improve the condition of merchant seamen;" and use their influence in Parliament to carry out those important changes which can be best made by legislation, in the shape of an Amendment to the Act now before Parliament.

NOTES DURING A VOYAGE BETWEEN ENGLAND AND THE BLACK SEA.

(Continued from page 554).

LEAVING Constantinople for the Crimea we had beautiful weather for our passage through the Bosphorus, and certainly there are few places in the world more interesting, whether we regard the scenery or recal the historical associations of the shores which are washed by the water of this famous Strait, dividing as it does the two continents, which chiefly figure in the world's history. When we were but a short distance from the entrance of the Bosphorus the wind drew northerly from the Black Sea, and compelled us to anchor until the following day, when one of H.M. Steamers towed us out about a league, and then left us just as it was getting dark with a heavy lowering sky, and the sea about the entrance of the Strait swarming with *birds*. Making all plain sail on the port tack to get an offing, we found as we cleared the land the sky became lighter, and by daylight next morning we found the *Black* Sea to be like all other seas in which we had sailed, a good marine blue, reflecting every tint and change in the sky above.

On the fourth night after leaving the Bosphorus, the officer of the watch reported "lightning" on the port bow, and what appeared to be

the loom of land in the same direction. The lightning turned out to be the flash of guns before Sebastopol, and the "loom of land," the high bluff between Karatch and Balaclava Bay. To those who had never seen a hostile gun fired, this intermittent light over the land like the gleams of a volcano, appeared a very strange kind of *pharos* for guiding the mariner, and no after impressions during the war were more lasting than this first night scene; although I afterwards saw heaps of slain men, and was in Sebastopol among the first after its capture.

The morning after making the land we entered Balaclava Bay, making a great noise with our guns in the hopes of getting a steamer to tow us into the harbour, and I also sent a boat in to report our arrival.

An order came out for us to be in readiness to go into harbour the next day, and as the weather was unsettled we stood out to sea until the following morning, having the flash of guns during the night again to determine our distance off shore. We returned to the bay at daylight, and anchored in thirty-nine fathoms to wait for a steamer to tow us in; and I mention the depth of water we anchored in because I know that most seamen have a dread of any depth over twenty fathoms. From my own experience, I should say, when the ground tackle is good, and the purchasing gear what it ought to be, there should be no hesitation in anchoring in forty fathoms when an occasion requires it.

The scenery around Balaclava Bay is striking. The entrance to the harbour, in its N.W. corner, is so narrow that it would escape observation if it were not known. On the shingly beach at the head of the bay, under high cliffs, we saw fragments of the wrecks which occurred in that disastrous gale in which the *Prince* was lost; and when I took a lonely stroll there a few days afterwards I saw two skeletons which had been washed ashore and had escaped observation. It took me some time to pile stones over them, and while so engaged I heard the boom of the heavy seige guns before Sebastopol, and thought of the two poor souls over whose remains a stranger was heaping shingle, that they had done with battle, whether on land or sea, and I was fain to hope that after the storm in which their life here was wrecked they had found a "haven of rest."

Should a ship be caught in a southerly gale in this bay before she has time to put to sea, no trouble should be spared to make her snug aloft, and after giving her the whole of one cable, if this does not hold her, drop the second anchor *backed with a heavy kedg*. This with the "backsend," or rebound of sea from the steep beach will enable a vessel to hold on to the last, unless she founders. The war steamer in which was H.R.H. the Duke of Cambridge, was saved in the gale in this manner, and well might the Duke say in that time of peril, when he saw ship after ship dashed to pieces, and expected every moment the same fate, that, "it was worse than three 'Almas,'" for there can be no doubt that in the excitement of a battle-field the thought of death, or the sense of danger, is light compared to what it is when anchored on an iron-bound lee shore with the spray from the rocks sweeping over the mast heads.

W. C. P.

THE UNITED STATES ADMIRAL.

WHOEVER originated the visit of the *Miantonomah* to our waters, there can be no doubt that such visits go far towards establishing that mutual respect and esteem between nations that is always desirable. And we are glad to find that now we have among us the senior Admiral of the American Navy. He is receiving that attention from our authorities to which he is in every respect entitled, and we are rejoiced to find him and his officers welcomed as they should be. The *Daily News* alludes thus to it. In every word we agree.

“The visit of Admiral Farragut to this country presents a valuable opportunity for the interchange of those international courtesies which have so material an influence on the policy of nations. Although the Admiral and the officers of the squadron under his command have arrived at a time when the ordinary gaieties of society are suspended, and nearly everybody is away from home, they have, of course, been made the object of such attentions as our officials are able to pay to friendly and distinguished visitors. As the head of the Navy of the United States, with a reputation second to that of no naval commander now living, Admiral Farragut has peculiar right to the attentions he is now receiving. The American Navy is the youngest but the most vigorous child of Anglo-Saxon love for the sea. It inherits with us the traditions of Blake and Anson, and represents an empire of the sea which has itself sprung from our own. Young as it necessarily is it can already point to a glorious past, and we may with certainty anticipate for it a worthy future. The English people feel no jealousy whatever at the vast naval development and progress which Admiral Farragut represents. So long as American rivalry with us at sea is limited to peaceful manifestations, we shall all rejoice at the lustre which attends the American flag. That the naval services of the two countries should fraternise, that the readiest and heartiest recognition should be accorded by the one to the merits of the other, is what on either side of the water all honest men desire. It is indeed to be particularly desired, at the present time, that all possible hospitality should be shown to our American visitors. We owe something to the American Navy, and to Admiral Farragut as its representative, for the injustice that was done both to it and to him by a large portion of our press and a small but influential portion of our people during the civil war. There can be no impropriety in reminding ourselves of this injustice, and in confessing our mistake, now that an opportunity of making amends for it seems to be offered us. It arose from our not being sufficiently known to each other. Englishmen never knew how little the slaveholding class really represented the American people, and Americans did not know how little the classes which sympathized with the rebellion here represented the great mass of the English people. But Admiral Farragut will not need to be assured of the friendliness with which America and Americans are regarded by the people of this country. He has found, and will find, nothing but the

warmest welcome, the most complete readiness to open our house to his inspection, and the most thorough appreciation of his own fame. Among the officials with whom he is brought into more immediate contact he finds neither concealment nor jealousy. They have shown him and his staff Chatham Dockyard and the Arsenal at Woolwich, and have made no secrets of any of their methods or processes, from the building of the newest ship still on the stocks to the new machinery for cutting iron, or shaping plugs, or making bricks. Accompanying the Lords of the Admiralty on their annual visit to the scenes of their extravagances, they have had the best possible opportunity of seeing how naval construction is managed on this side of the water, and probably have learned lessons which may be useful to them at home. Nor will the welcome which has been given to the Admiral and his staff in the south be grudged him in the north. In the visit he is about to pay to Liverpool, the quondam head-quarters of secession sympathies, he will find that a reaction has taken place in favour of the cause he so appropriately represents, and has so efficiently served. The wonderful prosperity of the great port of Lancashire is, in very great degree, based on the commercial intercourse between the two countries. So far as inter-communication is concerned, it is the port of England which stands directly over against the New World, and which is in most immediate sympathy and contact with it. There will be nothing in Liverpool to show that any hostility to the North still exists, so far as the Admiral is concerned. But wherever he may choose to go he will find a welcome. He needs no introduction to Englishmen. They will welcome him for his own sake, and for the sake of his country.

In Admiral Farragut the American Navy has given evidence of the possession of those sailor-like qualities which have made our own naval service so popular at home and so powerful on the sea. His pluck, and enterprise, and thoroughness were abundantly demonstrated in the naval actions of the civil war. His bold and successful attempt to force the entrance of the Mississippi in April, 1862, recalled some of the best naval enterprises of our own history. The passage and re-passage of his whole fleet past the formidable batteries of Vicksburg demonstrated not merely his personal courage, but his wonderful skill, and showed that he had not only the will to attempt great exploits, but the power to execute them. But, perhaps, the event which has most possessed the popular imagination was the bold dash past the impregnable batteries which commanded the entrance to the harbour of Mobile. The Admiral, tied amongst the rigging of his own vessel, so that not even a wound should cause him to lose his hold, and that the whole scene should be beneath his eye, leading the way through the storm of cannon shot, and running the gauntlet of probable destruction with dashing courage and brilliant success, is a picture which is as indelibly impressed on the minds of Englishmen as on those of Americans. From that time no one has ever desired to dispute the possession by the American Navy of the highest qualities of seamanship. The name of Farragut, associated with that bold and splendid

enterprise, is held in that esteem which Englishmen always give to courage, but which they still more give to the courage of a people whose qualities reflect their own. Admiral Farragut may represent American rivalry on the element which we have learned to consider our own, but it is a rivalry in qualities which Englishmen respect wherever they are found, and which, so far from leading to misunderstandings and conflicts, ought to lead to mutual admiration and esteem. It is greatly to the interest of both nations that they should more and more learn this mutual respect. They will learn it on nearer acquaintance with each other, and everything which promotes that acquaintance will promote their friendship and alliance. In the new times which are at hand we on our side shall shake ourselves more and more free from entanglements in the East, and cultivate our relations with the West. The continent of Europe may not perhaps be less to us than it has been, but the Western continent will be infinitely more. Such visitors as Admiral Farragut and his staff are therefore doubly welcome now. The era of misunderstandings is over, and that of enlarged friendly intercourse has begun, and every occasion of becoming better acquainted with each other, every exchange of international courtesies, and every opportunity for the expression of mutual goodwill and esteem, will serve to strengthen the personal ties and multiply the personal friendships, which, even more perhaps than the policy of governments, tie kindred nations to each other."

OVERLAND ROUTE TO CHINA.

To the Editor of the Nautical Magazine.

SIR,—In one of the public journals have appeared articles in favour of an overland route to China, from Rangoon to the frontier town of Kiang Hung.

Would it not be well to see if a *much easier* route is not to be found by going right up the Irrawaddy to Bamoo, and making a rough survey between that place and the Chinese frontier of Yunan. This northerly route has also the advantage of being nearer the north-eastern frontier of British India, with a view to any future connection or extension of the line in that direction.

In 1863 I went to Mandalay to see the King of Burmah about English steamers going up the river, and I had no trouble in getting his permission; the truth being that his Burmah Majesty would be glad to allow anything that promises to increase his revenue.

I may mention that I am acquainted with the navigation of the Ganges, Berhampooter, and the Irrawaddy, and that of these three great rivers, I consider the navigation of the Irrawaddy to be the least difficult.

Should this letter fall under the notice of a writer to the *Times* upon the above subject, who signs himself "G.," Isle of Wight, I shall have much pleasure in giving him some additional information.

Cedar Cottage, Abergavenny.

W. C. P.

ABYSSINIA.

THE following letter from Dr. Blanc one of the prisoners in Abyssinia gives so vivid a picture of one cause among others of our expedition to that country, that we are induced to preserve it as the first of our records of that very novel proceeding.

LETTER FROM ONE OF THE PRISONERS AT MAGDALLAH.

(From the *Bombay Gazette* of Sept. 26th.)

The following letter, received by a gentleman in Bombay, from Dr. Blanc, one of the prisoners at Magdallah, has been courteously placed at our disposal by the recipient, and will be read with interest, we doubt not, by the public :

“ Magdallah, July 23rd, 1867.

“ My dear —,—I really do not know whether I am writing to the living or the dead, to a confirmed bachelor, to a happy Benedict, or to a *faneur* at the Paris Exhibition. All your fault, dear friend, —since I left Aden not a line ! Well, I will not bully you too much, as you might retort the same argument on me, the only difference being that you *know* where I am, and I only *guess* where you are. Never mind—at the eve of a serious crisis we must not forget our friends, so that even should the worst happen, they might keep our memory as a pleasing thought. I suppose that from the papers you must from time to time have seen something about our adventurous mission, its rise and fall, and lastly all its elements being consigned to *Carcere duro* ! The summary of our career in this country is easily made. First period of sunshine, basking in the smiles of royalty, from January 28th, 1866, to 15th of May of the same year. On that day great *fiasco* ! From honoured guests we were turned into prisoners, insulted, seized by the executioner's myrmidons, belts, and caps violently wrenched from us, our uniforms torn ; we were dragged along the audience-hall in that humiliating position before all the officers of Theodorus' army.

“ From that the second period begins, all of darkness and of anxiety, always worse and worse. After a few days of respite and quiet, semi-prisoners at Gaze from the day of our seizure to the end of May ; for a couple of weeks we were pretty free at Gaffat. On the 25th of that month, second confiscation of our arms and property (the latter afterwards restored) ; trial and confinement in a black tent near the king's house at Debra Tabor. I was, however, allowed to return to Gaffat on account of typhus and cholera prevailing there. 3rd of July, Mr. Rosenthal and myself seized at Gaffat by the king, brought to Debra Tabor, tried, sent into a dark house where we were obliged to have candles lighted all day. 5th July, sent to Magdallah, arrived at the fortress on the 12th of the same month, travelling without bedding or change of clothes through the rainy season. Four days afterwards chained by the leg like rabid camels all in one small room.

Afterwards Rassam got a house, Pridieux and myself a small shed unfit for even an Irish pig, still better than the previous omnibus system. Since then more than a year ago, we have remained *in statu quo*, the irons gradually wearing away every muscle of our inferior extremities, and long confinement ruining our health and weakening our brain. However, left alone we managed to make ourselves more comfortable.

“ In November last Pridieux and myself built a better hut, Cameron also a small and modest one, it is true, Rassam as good a house as can be found in Abyssinia. Stern and Rosenthal live in the first house assigned to me, Pereus and Pietro (an Italian) have small huts for the daytime, at night in ‘the kitchen.’ All we wish is to be able to remain as we are until ‘Thomas Atkin’ comes. Our chains are no fun, however—heavy, disagreeable things. Rassam being, as the natives say, the ‘master of the dollars,’ managed to get some lighter ones put on, a kind of patent ring invented by our former head jailer; but what can poor fellows like Pridieux and myself expect? ‘Master of salts,’ a house in common, used also as a dispensary, heavy fetters. Contempt and impertinence are all the natives bestow upon the poor white men. Dull times, no books, seldom papers, nothing but our own selves to snarl at, but Theodore to curse. Bad food, horrid beds, tyranny and bullying from every one. Dear friend, pity the European captives of Theodoros.

“ But enough of ourselves—a few words about our ‘kind dear host,’ we have not brought him good luck—he is going down so fast that he must collapse shortly into a mere brigand—why he is one already! No country, no people, no friends, he lives by plunder, and passes the time by torturing or killing, not his enemies, he seldom can get hold of them now, but his friends and his soldiers. He seems to have adopted a new system of religion and medicine; he sacrifices daily some hundred victims, to what divinity I cannot say, unless it is something like the furies he worships; and to cure the excitement of his nervous system, the cries of those he burns alive are the only solace he can find. When we arrived he imposed upon us by his sweet tongue; we saw only the wild beast at rest, in its drowsy state, we thought him good, the rebels bad, and that virtue and goodness would at last prevail over rebellion and mutiny. But the mask soon fell, even at Gaze we saw the six feet long hippopotamus whip tearing to pieces the delicate skin of an Abyssinian lady, and her corpse removed on a small mat trickling with her blood. But this was nothing. Gondar disappeared in flames, kindled by the ‘father of his people;’ so that the rebels on the surrounding height might see far and distant the glare of the doomed city; priests, women, and a few wretches supposed to be rebels were added as fuel; so that the fire should not go out by want of materials. Chiefs after chiefs were chained, tortured, and crowded together in small huts; day after day new murders, new tortures, until one morning he enjoyed the sight of 670 of his soldiers butchered on a mere suspicion of their intention of desiring to run away. This was, however, too much; even the

greatest scoundrels around him got frightened, desertion of all the men from the few provinces until then still faithful to him took place the next morning, so that the *diner* that day off 670 corpses cost him the remainder of his kingdom—rather a heavy bill of fare.

“ In this country there is no rule, no more sovereign, anarchy alone rules supreme, peasants murder soldiers, soldiers peasants; and Theodorus both. The Galla are in the field, Wakshum Gobaze is knocking about, anxious to have a shy at Theodorus, but afraid of his own soldiers. This cannot last very long; the peasants kill their cows and leave the soil to take care of itself; they stand in arms and defend, in their way, their property. For us it is bad enough; little chance we have if our people do not come soon. Theodorus on his last legs does not stand on trifles. What cares he now about the Queen of England, or her friendship? He wants blood, nothing else; of black he ought to be satiated, next he will try what the white man’s is like. Indeed he has nearly begun, as a few days ago he killed the six remaining servants of the five Europeans, who last January tried to escape; one of these servants was a native of Massowah, so you see he is getting on. Our only hope is that, reduced as he is, he will not venture here, having to cross eighty miles of country, all in arms against him. Specially if Gobaze, his blood enemy, is in the neighbourhood; these two must come to a clash some day; for our sake the sooner the better; though as far as liberty is concerned, it matters little. We would not be allowed to leave the country, only an army can do that. No one in this country believes in the white man any more, and unless they get a practical lesson, diplomacy will be of no avail; still in Gobaze’s hands our lives are safe. If Theodorus comes here after the rains, I can only say, in that case ‘ora pro nobis.’ Good bye. Send me all the news and extracts of the Indian papers about our affairs. I should like to see their opinions.—Believe me, yours affectionately,
(Sd.) “ H. BLANC.”

NEW BOOKS.

THE NILE TRIBUTARIES OF ABYSSINIA AND THE SWORD HUNTERS OF THE HAMBAN ARABS. By Sir Samuel Baker, M.A., etc. London: Macmillan. October, 1867.

THE lovers of the chase will revel in this volume. Adventure of the most thrilling kind is its principal theme. Our already filled pages oblige us to reserve it for future discussion. But to the following letter we append an extract from it that will account to our correspondent for his *sand shower*.

On a voyage from the Black Sea to England in the Norwegian barque, *Hong Sverri*, I experienced, under the African coast, between Cap Bon and Algiers, a strange kind of weather. From the 20th of September to the 25th, the thermometer varying all the time between

88° and 80°, while the barometer was gradually falling from 30·13 to 30·08. The wind changed in this time continually round the compass with squalls, as were seen to come up in thick clouds from the S.E., and draw round the horizon over south and west, and sometimes turn back round to the northern. Thus the weather remained until the 23rd, when the squalls became very strong; the wind at the beginning blowing from several quarters, but at last settled down from the northward, and with each squall followed a tremendous heat and haze, carrying with it a "red brown" dust which covered the vessel. It was very fine dust, but seemed under the fingers to be a very minute sand. This dust continued to fall for almost eighteen to twenty hours. It seemed to me, as far as I could observe the course of the clouds, that this dust must have come from the African coast, where at the time, or before, I should think a *sirocco* has been blowing. The vessel's position was between 37° 52 and 38° 9 north latitude, and 6° 15 and 4° 53' longitude east, in sixty to eighty miles from the coast.

CARL F. HANSEN, *Master*.

On his way to the Abyssinian mountains, Sir Samuel thus speaks of the desert sandy wanderers:—

"The rains have commenced in the south and are extending towards the north; the cold and heavier air of the southern rain clouds sweeps down upon the over heated atmosphere of the desert, and produces sudden violent squalls and whirlwinds when least expected, as at that time the sky is cloudless.

"The effect of these desert whirlwinds is most curious, as their force is sufficient to raise dense columns of sand and dust several thousand feet high; these are not the evanescent of a changing wind, but they frequently exist for many hours, and travel forward, or more usually in circles resembling in the distance solid pillars of sand. The Arab superstition invests these appearances with the supernatural, and the mysterious sand column of the desert wandering in its burning solitude, is an evil spirit, 'a Gin' (genii plural, of the Arabian Nights). I have frequently seen many such columns at the same time in the boundless desert, all travelling or waltzing in various directions at the wilful choice of each whirlwind: this vagrancy of character is an undoubted proof to the Arab mind of their independent and diabolical origin.

"And thus the Norwegian barque seems to have got into bad company."

NOTES ON NOVELTIES.

WE little expected having ever to record the capture of a *Fenian privateer* in our pages, but the following is so much like it that we preserve the curiosity, whether it turn out true or untrue—

CAPTURE OF A SUPPOSED FENIAN PRIVATEER.—The *Glasgow Herald* publishes the following from its Greenock correspondent:—

“ Intelligence has been received in town from H.M.S. Lion, presently stationed at Lough Swilly, that a few days ago a suspicious-looking craft being observed in the offing, a boat from the war ship was promptly manned and went in chase. Coming up to the craft, a request was made by the officer in charge of the Lion's boat to the person in command of the unknown craft that she should produce her papers. The request was declined, and intimation was given that the first man who dared to set foot on board would be thrown into the sea. Upon this the stranger craft was promptly boarded by the blue jackets, and the crew, nine in number, of the craft being seized, they were put in irons and taken on board the war-ship, where they await orders from the Admiralty. The vessel has also been detained. Details are not given as to the cargo of the captured craft, but as she had no papers on board, and is suspected of being a Fenian privateer, considerable interest is attached to the result of the investigation now being made.” No confirmation of this story appears in the Dublin papers.

We leave the foregoing curiosity as it is, and can only find room for the following, a subject to which we shall have ample occasion to return in an early number, with the satisfaction of having lent our aid towards the establishment of that stringent law which comes in force in January next.

A medical contemporary furnishes a deplorable picture of the inefficiency of the existing laws for the protection of merchant seamen. Of the six poor fellows who were taken into the *Dreadnought* hospital ship, on the 26th of August, four were so reduced by scurvy that they had to be hoisted on to the medical deck. They are now improving, but their condition is a sad one, and the story of their wrongs, as told by one of their number, is exceedingly painful. It appears that they were four months out from Calcutta, having twice crossed the line, and during all that time the fore-castle was kept in a most foully unclean state. The sailors requested the mate to have it cleaned, lest it should “breed a plague,” but the request received no attention till the second time the ship crossed the line, and then something was done in the way of painting. As a rule, however, the condition of the fore-castle must have been loathsome in the extreme, for, in the language of the sailors, it “stunk.” The only provisions were salt beef, salt pork, and biscuit, and they were often compelled to eat beef which had been condemned on the voyage out as unfit for human food. Not a particle of vegetable was served out during the voyage, save a few preserved carrots to those men who were laid up by scurvy. The only drink was water, and this was the water of the Hooghly—not the most wholesome or refreshing beverage in the world. We have omitted to mention tea and coffee, both of which they had in addition. But how were these prepared? This is the recipe: The coffee having been placed in a vessel, three quarts of boiling water were poured upon it, and after standing for a few moments “a couple of buckets of cold water” were added. The farce of supplying lime-juice was, it seems, gone through, a bottle containing about twenty-six ounces

being given weekly to every five men; but it contained an ugly deposit, and before the ship had nearly completed her voyage it was "as black as your coat." The facts need little comment; they speak too strongly for themselves, and we trust that the owners of the *Riversdale* will afford us some explanation of them. Gross negligence and utter inhumanity have been shown by someone, and the question now arises, who is the responsible person? It is simply monstrous to suppose that so glaring a case of cruelty as that to which the crew of the *Riversdale* testify should be allowed to go unpunished. It is rumoured that a Board of Trade inquiry will be made into the matter, and we trust it may be so.

ROYAL NATIONAL LIFE-BOAT INSTITUTION.

ON the 3rd of October, a meeting of this institution was held at its house, John Street, Adelphi; Thomas Chapman, Esq., F.R.S., V.P., in the chair. There were also present, Sir E. Perrott, Bart., Admiral Sir William Hall, K.C.B., F.R.S., Admiral Gordon, Captain Arrow, deputy master of the Trinity House; J. Griffith, Esq., Admiral Ryder, Admiral M'Hardy, A. Boetseur, Esq., Captain De St. Croix, Captain Ward, R.N., inspector of life-boats to the institution; and Richard Lewis, Esq., the secretary.

The minutes of the previous meeting having been read the silver medal of the institution, and a copy of its vote on parchment, were ordered to be presented to Captain Edward Kearon, and a reward of £30 13s. 6d. to the other men of the crew of the institution's life-boat at Arklow, Ireland, for putting off on the night of the 11th September, during a fierce gale from the S.E., and in a very heavy sea, to the smack *Kate and Mary*, of Arklow, which was riding at anchor in that bay in a dangerous position, with only a boy on board. The master of the smack, who had been taken off in the life-boat, was placed on board his vessel, which subsequently got away in safety.

A reward of £16 10s. was also voted to pay the expenses of the institution's life-boat at Whitby, in putting off on September 30th in a gale of wind and heavy sea, and rescuing the crew of four men of the schooner *Commot*, of Whitby, which had stranded on Whitby sands.

The sum of £17 18s. was also granted to pay the expenses of the society's Scarborough life-boat in going out at midnight on September 29th, and saving four men from the brigantine *Sybel*, of Yarmouth, which had been in collision with another vessel in Scarborough Roads, and was in a disabled state. A coble had previously gone out to this vessel, but on account of the heavy sea that was running, she could not venture alongside to rescue the crew.

A reward of £5 15s. was likewise voted to pay the expenses of the society's life-boat at Howth, Dublin Bay, in putting off during a heavy gale on the 12th September, to the assistance of the schooner *Splendid*, of Dublin, which was seen making for the harbour in a disabled state, and had afterwards anchored near the Baldoyle sands. The life-boat took off the captain, and also brought the schooner safely into Howth harbour, and moored her alongside the pier.

A reward of £9 10s. was likewise voted to pay the expenses of the institution's life-boat at Orme's Head, in putting off on the 20th September, in a strong wind, and with the assistance of a steamer, taking the disabled smack *Jane*, of Carnarvon, and the four persons on board, safely into Beaumaris.

A reward was also granted to the crew of the institution's life-boat at Newbiggin, for putting off during a heavy gale, and bringing safely into harbour, seven fishing boats and their crews of thirty men, belonging to North Sunderland, Newton, and Caister, which were in imminent danger while making for the south.

Rewards, amounting to £40 13s., were also granted to the crews of the society's life-boats at Castletown, Dundalk, Margate, and New Brighton, for various services during the recent heavy gales.

A reward of £15 was voted to the crew of the yawl *Eclat*, of Caister, for putting off in a strong N.E. gale and heavy sea, and rescuing, on the 26th July, from a small boat ten persons belonging to the sloop *Favourite* and schooner *Unity*, of Goole, which had been in collision, and afterwards became total wrecks, on the Norfolk coast.

The committee expressed their condolence with the family of the late John Diston Powles, Esq., on the decease of that lamented gentleman. He had been an active member of the institution for upwards of forty years, and had been one of its best and warmest friends.

Payments, amounting to nearly £4000, were ordered to be made on various life-boat establishments, making a total of £23,290 which the institution had expended on its life-boat stations during the current year. It had also, during the same period, contributed to the rescue of seven hundred and sixty-two lives from various shipwrecks, and had been directly or indirectly instrumental in saving sixteen thousand six hundred and sixty-three lives since its first establishment.

It was stated that the pressure on the funds of the institution, in carrying on its great and national work was very heavy at the present time, and that some of the funded capital of the society would probably have to be sold out to meet these pressing demands.

It was reported that legacies had been left to the institution by the late Miss Maria Irlam, of Dibbinsdale, Chester, £1000 duty free; the late Mrs. Sarah D. Woodhouse, of London, £100 free of duty; and the late Robert Shopherd, Esq., of Rochdale, a reversionary legacy of £1000. The executors of the late Mrs. Morgan, of Cheltenham, had also placed at the disposal of the institution £650, from the residue of her estate. A contribution of £50 had also been received from the Ancient Order of Foresters, through their able secretary, Samuel Shawcross, Esq., in aid of the support of the life-boat *Forester*, at Newquay, Cardigan Bay. The order was also collecting funds in aid of an additional life-boat.

It was also reported that the institution had recently sent new life-boats to Mullion in Cornwall, Brighton, and Dundalk in Ireland.

Several of the railway and steam-packet companies had kindly given free conveyances to the boats. A grand demonstration had taken place with the Mullion boat at Penzance on the 10th September. Similar demonstrations had also taken place with the Brighton and Dundalk life-boats. These three boats were the gifts respectively of the Wesleyan Methodists, of the London Sunday Schools, and of the Stockport Sunday School, to the institution. It was reported that another of the large safety fishing boats of the institution had been built and launched. It had been taken charge of by some fishermen belonging to Anstruther, N.B.

It was decided to form a life-boat station at Almweh, on the Anglesey coast. A lady in Berkshire had also placed at the disposal of the institution £420, to pay for a new boat and carriage. She wished the boat to be named the *Florence*.

Reports were read from the inspector and the assistant inspector of life-boats of the society on their recent visit to the coasts.

The proceedings then terminated.

Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 31, Poultry.]

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 579.)

Name.	Place.	Position.	F. or Fl.	Ht. in Ft.	Dist. in Mls	Remarks, Bearings are by Compass.
53. Spitsand	Spithead	Buoy red, on outer Spit.	...	...	...	Spit (bell) buoy N. b. E. $\frac{3}{4}$ E. $5\frac{1}{2}$ Cab. See Note (a).
54. Waderobod	Sweden	58° 32' 7 N. 11° 2' 5 E.	R.	103	15	Est. 22nd Sept., 1867, once a minute, a Red and White Light
Heg Holm	Norway	...	...	...	...	Est. 15th August, 1867: <i>inwards</i> a Red Light.
55. Hooper Strait	S. Coast Chesapeake Bay	S.E. from Lt. Vessel	...	...	...	Est. 14th Sept., 1867. On shoal in $6\frac{1}{2}$ feet. 300 yards from Lt. House, and on piles. Alterations: See Note (b).
56. Pembroke Reach	Milford Haven	...	...	...	...	Est. 30th Sept., 1867.
57. Burriana	Gulf of Valencia	39° 53' 6 N. 0° 3' 8 W.	F.	...	...	Est. 1st Oct., 1867. White Light now Red.
I. Ponza Battery	Italy W. Coast	...	...	...	...	Light ceased temporarily.
Lefchimo Point	Corfu	...	...	...	...	Recent. See also p. 450. Chifu.
58. Chifu	Kung-kung I. largest	Yellow Sea	F.	240	18	Recent. See also p. 450. Chifu.
59. Kolaba	Bombay Har.	Entrance	R.	...	...	Est. 1st May, 1868. Light Vessel's light is now Red. R. every 20 seconds.
60. See Note (c).	Newfoundland	Cape Freels	...	...	...	Account of dangers off C. Fr.
61. Homlung	Christiana	59° 1' 4 N. 11° 2' 4 E.	F.	...	...	Est. 1st October, 1867.
Stabben	Norway W. Coast	61° 36' N. 4° 57' 5 E.	F.	...	...	" " Red towards Floro.
Kind Island	" "	61° 33' 5 4° 46' 7 E.	F.	...	...	" "
Stot. Sesquier Island	" N.W. Coast	66° 56' 5 13° 29' E.	F. fl.	...	...	" " Flash every two minutes.
62. Buoy on the	Rinana Shoal	R. Shannon	...	...	...	See Note (d).
63. Perseus rock	Japan In. Sea	...	...	...	...	See Note (e).
64. Sombrero I.	Antilles	18° 35' 6 N. 63° 27' 8 W.	R.	150	20	Est. Jan., 1868. Every minute.
Amelia I.	Florida	Fernandina	...	...	...	Movcable for Crossing the bar. In Front of Amelia Light.
65. Orfordness Low Light	England E. Coast	...	...	...	...	Delay in alteration. See Note (f).
Patterson rock	Scotland W. Coast	Firth of Clyde	...	...	...	Alteration. See Note (g).
66. Chipiona	Spain S.E. Coast	36° 44' N. 6° 26' 5 W.	R.	220	22	Est. 23th Nov., 1867, every minute. Note (h).
67. Jane Island	U. States Chesapeake	...	...	35	10	Est. 7th Oct., 1867. See Note (i).
68. Kish Bank Buoys	Ireland W. C.	...	...	...	...	See Note (k).
69. Tybee Island	U. States	32° 1' 3 N. 80° 50' 5 W.	F.	150	19	Est. 1st Oct., 1867. For crossing the bar 870 yards in Front of the main Light.
Tybee Beacon	"	Savana River Entr.	F.	...	...	" "
70. Blezeling-scham	South Beveland	Schelde River	F.	13	9	Visible as a guide for the Channel
Baerlandt Point	Ditto	Ditto	F.	13	9	Ditto ditto

F. Fixed. F. fl. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

(a) From this red buoy Gilkicker point is N.W. $\frac{1}{4}$ W. ; also Horse Fort, S.S.E. $\frac{1}{4}$ E., 1 mile, and the eastern side of No-mans-land Fort in a line with the Yarborough monument to the Isle of Wight.

DIRECTIONS.—There is about the same depth of water, viz., from twenty to twenty-three feet, over the bank between this buoy and the Spit (bell) buoy, but vessels of a heavy draught should, on entering or leaving Portsmouth harbour, unless near high water, pass to the southward and eastward of the Outer Spit buoy.

Variations 21° Westerly in 1867.

(b) The four buoys marking the north side of the Dockyard bank are painted red, the western, or turning buoy, marking Carr spit, having a Staff and Globe. The two buoys marking the shoal off Weare point and Neyland spit are painted black.

(c) *Rocks in the vicinity of Cape Freels.*—The following is a list of Rocks and their positions lately discovered on the West Coast of Newfoundland, by Lieutenant James H. Kerr, in charge of the Survey on that Coast.

Snap Rock, awash is in lat. $49^{\circ} 53' 30''$, long. $53^{\circ} 41'$, West of Greenwich, from it—Funk island bears S.E. $\frac{3}{4}$ S., $22\frac{1}{2}$ miles. Barrack rocks bear W. $\frac{3}{4}$ N., $12\frac{1}{2}$ miles. Offer Wadham light bears S.W. $\frac{1}{2}$ S., $17\frac{3}{4}$ miles.

Pigeon Rock has 2 fathoms on it, and from it—South Barrack rock bears North, 3 miles. Extreme of Cape Fogo bears S.W. by W. Joe Butts point bears N.W. $\frac{3}{4}$ W. Pigeon island bears W. $\frac{3}{4}$ N.

Lanes East Rock has 2 fathoms on it, and from it—The West End of Barracks bears N.E. by E. $\frac{1}{2}$ E. $1\frac{1}{2}$ miles. Round head bears W. by N. Extreme of Cape Fogo bears S.S.W. $\frac{1}{2}$ W.

Lanes West Rock has 3 fathoms on it, and from it—Round head bears W. by N. $\frac{1}{2}$ N., 2 miles. Lanes East rock bears E. by S. $\frac{1}{4}$ S., $1\frac{1}{2}$ miles.

Clam Rock has 9 fathoms on it, and from it—Offer Wadham light bears S. $\frac{3}{4}$ W., 7 miles. South extreme of Cape Fogo bears W. $\frac{3}{4}$ N.

Pinnacle Rock has 10 fathoms on it, and from it—Cape Fogo, in a line with Round head, bears N. $\frac{1}{4}$ W., 2 miles. Copper island summit bears S.W.

White Clam Rock has 9 fathoms on it, and from it—Cape Fogo, in a line with Round head, bears N. $\frac{1}{4}$ W., $4\frac{3}{4}$ miles. Copper island summit bears S.W. by W. $\frac{3}{4}$ W.

Frampton Rock has 4 fathoms on it, and from it Copper island summit bears S.E., $2\frac{1}{2}$ miles.

Fishing Rock has 9 fathoms on it, and from it Copper island summit bears S.E. $\frac{1}{2}$ S., $4\frac{1}{2}$ miles.

Western Head Rock has 3 fathoms on it, and from it—Western head bears North, 1 mile. South extreme of Cape Fogo bears E. $\frac{1}{2}$ N., $2\frac{1}{2}$ miles. Burnt point upon of Wild point bears W. by N. $\frac{3}{4}$ N., 4 miles. Copper island summit bears South, 5 miles.

East Rock has 10 fathoms on it, and from it Offer Wadham light bears W. $\frac{1}{2}$ N., $2\frac{1}{2}$ miles.

Outer East Rock has 12 fathoms on it, and from it Offer Wadham light bears W.N.W., $5\frac{1}{2}$ miles.

Brenton Rock has 5 fathoms on it, and from it Funk island centre bears E., 6 miles.

Rocks also exist, to which no names have been given, as follows:—

6 fathoms	Funk island centre bearing	S. by E. $\frac{1}{4}$ E.,	2 miles.
10	”	S.E. $\frac{1}{4}$ E.,	2 ”
15	”	E. $\frac{1}{4}$ S.,	1 $\frac{1}{2}$ ”
10	”	E. $\frac{3}{4}$ N.,	$\frac{2}{3}$ ”
3*	”	N.E. by E. $\frac{1}{4}$ E.,	2 ”
3	”	N.E. $\frac{1}{4}$ N.,	2 ”
9	”	N.W. $\frac{3}{4}$ W.,	2 ”
11*	”	N.W. by W.,	1 $\frac{1}{2}$ ”
15*	”	W. $\frac{1}{4}$ N.,	2 $\frac{1}{2}$ ”
6	”	S.W. by W.,	1 $\frac{1}{2}$ ”

* These rocks are parts of narrow banks, each upwards of half a mile long N.E. and S.W., with less than 30 fathoms on them, the others being small with from forty to sixty fathoms close round them.

The position of Funk island centre is in lat. 49° 45' 29" N., long. 53° 10' 49", West of Greenwich.

South Coast—Placentia Bay—Merchant Shoal.—While examining the course of the Telegraphic cable from Placentia to Sydney, in Cape Breton island, a patch with 5 fathoms was discovered, which is supposed to be the *Merchant Shoal*, from it—Verde point, Placentia, bears S.E. $\frac{3}{4}$ E., 15 miles. South-west point of Merasheen island bears N.E. $\frac{1}{4}$ N., 8 miles.

It is reported that from this point towards Merasheen island many shoal patches exist with deep water amongst them.

Variation at Funk Island 33° 20' Westerly in 1867.

at Cape Fogo	36°	”	”
at Placentia bay	30°	”	”

(d) The Office of Irish Lights, Dublin, has given Notice, that a red conical buoy, marked *Rinana shoal*, has been placed to mark the south-west edge of the Rinana shoal, off Scattery island, Shannon river.

It lies in six fathoms at low water springs, with the following marks and bearings:—

Ray peak a little south of the cliff of Kileraden head W. by N. $\frac{3}{4}$ N. The highest part of the battery on the south point of Scattery island, in a line with the round tower N.E. by N.

South Coast—Temporary Buoy on Barrels Rock.—Also, that the perch on the Barrels rock, Courtmaesherry bay, having been washed away, a black can buoy, marked *Barrels rock*, has been placed sixty fathoms S.W. $\frac{1}{2}$ W. of the rock, and will remain there until the perch is replaced, when it will be removed.

Variation 26° Westerly in 1867.

(e) A rock has been discovered (by H.M.S *Perseus* striking on it) in the Kúrusima strait, leading from the Misimi-nada to the Bingo-nada of the inland sea, and, as it lies in the fairway of ships, is of much importance.

It is named the *Perseus* rock, is about 20 feet in circumference, and has only 7 feet on it at low-water springs; it bears E. $\frac{1}{4}$ N., a third of a mile distant from the north point of Kosima, and from it—Kosima, north extreme, bears W. $\frac{1}{4}$ S. Kosima, south-east extreme, bears S.W. by S. Masima, west extreme, bears S. $\frac{1}{4}$ E. Masima, north extreme, bears S.E. $\frac{3}{4}$ S. Tsusima, west extreme, N. by E.

At a quarter of a cable from the rock there are from 5 to 7 fathoms

water, and between it and Kosima no soundings under 20 fathoms, thus leaving a clear passage of 2 cables.

Between half ebb and low-water the position of this danger is indicated by a strong ripple.

Variation 2° 50' Westerly in 1867.

(f) With reference to Notice to Mariners, No. 29 (see page 405), the Trinity House, London, has given Notice, that, owing to unavoidable circumstances, the *red* cuts intended to have been shown from the low lighthouse at Orfordness, on or about the 1st September, will not be ready for exhibition until the end of the year, and that further notice will be given as soon as a definite time for their exhibition can be fixed.

(g) The Commissioners of Northern Lights have given Notice that a *black* bell buoy, with an iron spar cage containing a bell, surmounted by a staff and ball, has been placed near to Patterson's rock, eastward of Sanda island, instead of the can buoy hitherto moored on the spot.

(h) Its position, as given is in lat. 36° 44' N., long. 6° 26½' West of Greenwich. From it San Sebastian light bears S. ½ E., Malandar point light E. by N. ¼ N., and the centre of the Salmedina rocks W. by N., nearly 1½ miles.

On the same night that this light is exhibited the light at present exhibited from the church of Chipiona will be discontinued.

Variation 20° Westerly in 1867.

(i) At the mouth of Annamessix river, on the shoal, which extends from the south-west point of Jane island towards the light-vessel, three quarters of a mile distant from each, in ½ feet water, mean tide; the light-vessel stationed there will be removed.

(k) ALTERATION OF BUOYS BETWEEN THE KISH AND TUSKAR LIGHTS.—With reference to Notice to Mariners, No. 23, issued from this Office, dated the 26th of April, 1867, relative to the alteration of buoys between the Kish and Tuskar lights, the Corporation of the Port of Dublin has given Notice, that the following alterations have now taken place.

KISH BANK.—*North Kish buoy* is now a conical *black* buoy with staff and ball and marked *Kish buoy, No. 1.*

Middle Kish buoy.—An additional *black* can buoy, marked *Kish buoy, No. 2,* lies midway between the North and South buoys, on the outer edge of the bank, in 15 fathoms water.

South Kish buoy is now a conical *black* buoy, marked *Kish bank, No. 3.*

CODLING BANK.—*Codling Bank buoy* moved 2 miles N. by W. ¼ W. of its late position, is now a can buoy, coloured *black and white* in vertical stripes.

INDIA BANK.—*India Bank buoy* is now a conical buoy, *black and white* in horizontal bands.

ARKLOW BANK.—*North Arklow buoy* is now *red* with staff and ball, and marked *Arklow bank, No. 1.*

Intermediate buoys.—There are three *red* can buoys on the outer edge of the bank equally distant from the North and South buoys, and each other, marked respectively *Arklow bank, No. 2, Arklow bank, No. 3, and Arklow bank, No. 4.*

South Arklow buoy is a *red* conical buoy, marked *Arklow bank, No. 5.*

BLACKWATER BANK.—*North Blackwater buoy* changed to a *black conical buoy*, has staff and ball and is marked *Blackwater, No. 1.*

Intermediate buoys.—The two intermediate buoys have been changed to *black can buoys*, and are marked *Blackwater, No. 2,* and *Blackwater, No. 3.*

South Blackwater buoy is a *conical black buoy*, marked *Blackwater, No. 4.*

LONG BANK.—*North long bank buoy* a *conical red buoy* has staff and ball, is marked *Long bank, No. 1.*

Middle buoy.—An additional *red can buoy* lies equi-distant from the North and South buoys and is marked *Long bank, No. 2.*

South Long bank buoy a *red conical buoy*, is marked *Long bank, No. 3.*

TO CORRESPONDENTS.

OUR friends in the book way will bear with us. We have not been so much pressed for space for a very long time.

Our correspondent "C. Renaut," shall be attended to in our next. Surely the proposal about the log-line is a mountain of a molehill!

Our Jamaica letter is received. What! another case of *scuttling*?

CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in October, 1867.—Sold by J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

729. DEm = 0·20 Nova Scotia, Sambro island to Cause Cape. Captains Bayfield and Orlebar, R.N. 1867. 2s. 6d.

730. DEm = 0·20 Nova Scotia, Sable Cape to Sambro island. Captains Bayfield and Shortland. 1867. 2s. 6d.

2083. DEm = 0·30 Africa South, Agulhas Cape to Mossel bay. Various authorities. 1867. 2s. 6d.

932. $\frac{DE}{2}m$ = various Java island, its Harbours and Anchorages. Dutch Survey. 1867. 1s. 6d.

16. $\frac{DE}{2}m$ = 1·0 China inland Sea, Hioga and Oösaka. Commander Bullock, R.N. 1867. 1s. 6d.

861. DEm = 1·7 Russian Tartary, Sheet 1, Amur river from entrance to Tehnurrak point. 1864. 2s. 6d.

862. DEm = 1·7, Russian Tartary, Sheet 2, Amur river from Tehnurrak point to Grand Duke Alexander islands. 1864. 2s. 6d.

EDWARD DUNSTERVILLE, *Commander, R.N.*

Hydrographic Office, Admiralty, 15th September, 1867.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

DECEMBER, 1867.

PORTSMOUTH AND ITS DEFENCES.

THE defences of Portsmouth in days gone by, were her wooden walls, but in days to come are to be those of iron; and whether afloat or on shore, seems not yet to be decided. Eternal, endless change, like fashion, rules the day; and experience tells us we must bow to the decrees of fate. There too is that busy, bustling element, called steam, almost making soldiers believe themselves sailors, and with smooth water in "the stilly night," hinting to us that we must be on the *qui vive*, lest in the event of sudden war, a dash be made at our vulnerable, or what we have been induced to believe are our invulnerable points, and the pride of John Bull in his old sea walls, the navy, be scattered to the winds. Therefore it is that the defences of Portsmouth must always concern us. Its very waters are sacred; every part of its shores remind us of former years—aye, when England was fighting for her very existence among the nations; and sacred they should be still, whether her sea walls (for those are they on which she has been most disposed to meet her foes) be composed of wood or iron. Nor should there be any trifling with their principal home; unchangeable, that has remained through centuries, when let alone. But amid the ever changing fashions of the day, Portsmouth has not been exempted, and it remains to be seen whether the harbour of our first naval arsenal, will come as harmless out of the hands of modern governments, as it did out of those of former days.

Yes, as time rolls on, so comes change—change which has at length revolutionized the fleet. Under the kindly influence of peace, our friends on the other side of the Atlantic have not been slow to tell us what they have done; and how, by means of as complete a transformation as was ever made within so short a period, in a ship of war,

they have come off victorious in the war of the rebellion. And if they have taken the pains to make no secret of their change, shall we not timely discern the formidable nature of the ships by which we too should be assailed, should unhappily a war arise on some future day. Their change has not been confined merely from wood to iron; it has been far more important even than that. The moderate sized gun of former days has been replaced by a monster, and that in a kind of ship, which, say what we may, will be hard to *see* above water. Let us hope however, that, nations are learning wisdom as well as warfare: the former profiteth, while the latter impoverisheth. Let us therefore, look at war as a necessity of the past; be earnest in our endeavours to keep it from our shores; not forgetting that on some future day it still might reach us, taking for our motto "*cura quietem*," in order that should it come we may not be found asleep.

One of our principal cares in such a case are the defences of Portsmouth. They form a serious item in our annual expenses, and well they may do so, when the efficiency of our first naval arsenal is at stake. And those defences extend over a huge area of flood and field, that is actually under the range of the monster guns of these days. Three miles has been considered about the effective range of our naval artillery; but, from the defences of Portsmouth six miles would be required to reach Spithead! So soon as these defences were pronounced necessary, their cost, however great, would vanish in comparison with their object. But by a statement which has recently appeared in *The Times*, a serious defect has been allowed to creep into them; and which the sooner it is rectified the better, for sooner or later rectified it must be.

Portsmouth as all the world knows stands on an island, formed on one side by the sea, and on the other by the waters of its own harbour and those of Langstone, connected together by a creek, of no further use as yet, but as admitting, at a certain time of tide, the waters of Langstone flowing through it into Portsmouth Harbour. But in the course of the construction of these fortifications, it seems to have been *intended* (and we purposely italicise the word) that there should be a *bona fide* channel made of this creek, for the passage of gun-vessels between the two harbours. The dimensions of this channel are referred to in the statement from the *Times*, so that we need not repeat it here; and its purpose was of course to contribute towards the defence of Portsmouth, as were the fortifications themselves.

It appears by the statement which we print *in extenso*, that the fortifications are drawing towards their completion, but of the enlargement of this creek for its *intended* purpose, nothing appears from which we can gather more than that it remains *in statu quo antes*, or perhaps in other words untouched.

There can be no doubt that to make such a channel as that which was required, implied a very considerable outlay—one which would make a large addition even to the work of constructing long lines of fortification. The enlarging and deepening this channel would, no doubt, require coffer dams at Langstone as well as at the Portsmouth

end of it, to keep the tidal water from the works. Still it appears by paragraph 9, in the statement from the *Times*, that, this work was to have been done, as well as that of the ramparts; and there is more than one reason why this is really as important as the fortifications themselves.

Portsmouth Harbour, quiet as it has been nearly ever since it owned the name, is at length to verify the principle of change, which has been growing every where! It has been condemned to contribute to the enlargement of its dockyard; an extension of ground is required for this, which must be taken from that. Now to take ground from Portsmouth Harbour, is virtually to rob that harbour of so much tidal water, which means that tidal water can no longer occupy it as it did. But tidal water has been held as essential to keeping down the bar of that harbour, and a high authority now passed away, has declared that every "cup" of water that flows with the tide into Portsmouth Harbour has its value. And in order to contribute as much tidal water as was thus to be taken away, by adding ground to the dockyard, Langstone Harbour was looked to for it, and hence the importance of a channel for it to flow through from Langstone to Portsmouth. Such a condition of affairs between the two harbours, perhaps, little concerned those who have been constructing the works of the fortifications, but it is a vital matter to the efficiency, and even to the existence itself of Portsmouth Harbour.

Recourse has been had to the dredge, for the purpose of keeping down the bar, which dredge has been freely used of late years. But there are high naval authorities in these matters whose opinions our pages contain, that are by no means favourable to the opinion of that bar ever remaining in the quiet condition which it shewed before it was invaded by this dredge. It has evidently been of late years and even now is in an unquiet condition, according to the hydrographic notices that have been issued concerning it. And if the mere disturbance of it has produced this effect, what will that be which robs the harbour-stream ebb of its only means of keeping down that bar?—when the amount of that tidal stream is diminished by the encroachment of the dockyard, and is even lessened still more by not getting its due amount of tidal water that was to have been replaced from Langstone.

Would it not have been far better to have let Portsmouth alone in its long rest and to have adopted the proposal of Admiral Sheringham, by transferring all our steam to the Hamble for the sake of room, instead of denying it tidal water to enlarge the dockyard, as he advised the Hydrographer to the Admiralty in 1861, in his letter, printed in our Volume for 1864. We are, at all events, not alone in believing so.

But we will now make room for the statement of the *Times*, and give it seriatim as so important a subject deserves.

1. If the opinions of the officers of our own Royal Engineers, from Sir John Burgoyne down to the youngest officer, were taken with regard to the triple lines of fortifications now rising up in bristling array around the dockyard and naval arsenal at Portsmouth, with their advance guards at the east and west ends of the Isle of Wight, it is

more than probable that the majority would pronounce all the works as perfect as human skill or foresight, under the circumstances of their design and construction, could possibly render them. Still many of our Engineer officers hold contrary opinions, and contend, in common with many military men and civil engineers, that scarcely a work can be inspected, finished or in the course of construction, that does not exhibit some fatal defect, either original in design, or arising out of the conditions of its construction.

2. No other nation has certainly in times of peace entered upon a work of such magnitude as in the great scheme for the "Defence of the Dockyards and Naval Arsenals." The work is vast if the failures have been pretty numerous. It is better for our strength, however, to discover and point out all such defects as may exist ourselves than to allow our foreign friends (who are constantly and wonderfully inquisitive in the matter) to point them out for our special edification, and thus lead them to suppose that the people of this country are content to repose in fancied security upon a false estimate of the country's defensive power in the shape of its coast and harbour fortifications.

3. It would also be as well to confess at once that even up to the present moment we have nothing as the fruits of military engineering of which we can very loudly boast, or that is likely to excite the admiration of our American brethren, or of our many friends from the Continent of Europe, unless, indeed, it is the magnificent way in which we spend our money on such matters, the "eccentricity" with which we make many of our greatest works look uncommonly like failures, and the incomparable coolness with which we do all these things. It is certainly impressive enough to take one's stand on the highest point of the crest of Portsdown-hill and look downwards to the south, the west, and the east, over scores of square miles of land and water which are being covered with forts of every size, description, colour, and material, red, white, green, brown, and grey; iron, granite, clay, chalk, and sand—a grand school for the education and practice of the Royal Engineers. In all this vast plan the Portsdown-hill forts and the marine forts at Spithead have naturally outweighed all others in general interest, and will continue to do so from their extent and peculiarities of position. Let the reader, in imagination, step with us on the highest elevation of Portsdown, in the centre of the line of the five gigantic forts which are ranged along the seven miles' length of the crest of Portsdown.

4. Now, if we can only give, for the time, unlimited faith to the professional skill and provisions of the great department in Pall Mall that designed those works, and in its subordinate officers who carried out the details of their construction, we should find Widley, Southwick, Nelson, Wallingford, and Purbrook assume an appearance of grandeur, strength, and efficiency that should last for ages, as they stand in their elevated solitude with their backs turned upon Portsmouth dockyard and arsenal, and their empty embrasures looking towards London. If, however, we lay down this faith on the glacis of these forts, and look

boldly down into their deep white ditches, their empty embrasures, or over their grass-covered ramparts, reminiscences will arise of main magazines collapsing 50 feet below the level of finished parade grounds, of escarp walls falling down into and filling up the ditch, of retaining walls giving way from excess of weight behind them, of arches and vaulted passages in brickwork split and gaping under superincumbent and miscalculated weights, and a thousand other "eccentricities" of the kind. But, as we have already observed, the work has been vast if the mistakes or failures have been pretty numerous. As a rule also, all the mistakes, or nearly all, which have occurred, have been due to circumstances under the control of the officer in local charge rather than to the heads of the Engineer department at the War-office; or, to the immense progress made in the manufacture and calibre of rifled artillery since these and all other works around Portsmouth were designed. There is also certainly nothing on the heights of Portsdown nor in any part of the triple bands of fortification that stretch out from its base which can be said to exhibit such a miserable fiasco as may be seen on the banks of the Medway.

5. "The Portsdown forts," Colonel Jervois remarks, in referring to objections that have been raised to their construction, "render it impossible for an enemy who may have landed on the coast of Sussex to seize the hill by any force detached from his main body without a regular siege." To this it may be replied that no enemy must ever be allowed to land in England. He must be met on the beach and driven back into the sea he has ventured to cross. Too much has been made of Portsdown-hill, but as the work is nearly done it is useless to grumble too persistently over the £600,000 it will have cost. Southwick, Widley, and Nelson, the three forts holding the central position of Portsdown, and which loom up so grandly in their elevated seat 600ft. above sea level, are complete so far as their construction by the contractor is concerned; but the Artillery Department have yet to lay the "racers" on the gun-platforms on the *terre-plein* and in the *caponnières*, and supply the guns and mortars for their armament. These three works may be generally described as earthworks of extraordinary size and horse-shoe form, with deep and wide ditches cut in the chalk, and flanked by weak *caponnières*.

6. The front of each work, or the toe of the horseshoe, faces north, the heel of the shoe, or gorge of the work, being on the south face of the hill, and toward Portsmouth. The gorge is closed by massively built barracks in brickwork, with stone dressings. From the edge of the huge chalk ditches down to the long and deep valley north of the position the entire face of the hill has been cleared of all timber or hedgerows, and all inequalities in the ground levelled, so that it now forms a vast glacis swept in all directions by the fire of the forts. From the valley below, in which lie embosomed in foliage the villages of Purbrook, Southwick, and Waterloo, the ground gradually rises in a succession of swells, mostly well covered with timber, until it culminates in the far distance in lofty spurs from the great range of downs which extends along the coast of Sussex.

7. So far we have seen the central strength of the great position of Portsdown. We have now only to glance at the east and west ends. On the eastern end of the hill stands Fort Purbrook, with its two extensive outworks—a lion couchant, keeping watch over the low-lying land below and the great eastern highway leading towards Chichester and Brighton. Purbrook is very similar in form to the three central forts, only differing in its two outworks, which embrace the north-east and east slopes of the hill. It is still in course of construction. Fort Wallington, on the west end of Portsdown, and overlooking the slope of the hill to the N.W., is partly built on clay, and has revetments of massive brickwork on the escarps and counterscarps. It is complete with the exception of its armament. Fareham Fort is separated by the village of Fareham from the west base of Portsdown, but it is part of the Portsdown line of defence, commanding as it does the approaches to the hill in the advance of any enemy from the westward or the Solent. It is an earthwork, with bomb-proof brick casemates under the ramparts. The armament of all the Portsdown forts is intended to comprise a total number of about 200 heavy guns and mortars, besides light pieces for the *caponnière*. These guns may possibly be all mounted in the forts in about two years' time—October, 1869—if the authorities bestir themselves in the matter with requisite energy.

8. Looking south from Portsdown, and in the direction of Portsmouth, may be seen at the very foot of the hill, with only the village of Cosham intervening, the northern section of the second circle of fortifications, as Portsdown is the northern section of its first or outer circle, which engirdles Portsmouth—the Hilsea lines, defending the only entrance to the island of Portsea by road from the mainland. The Hilsea lines have been uncommonly fruitful in their crop of "eccentricities." These lines are nearly 3,000 yards in length, and their right may be seen resting on the mudlands of Langstone harbour and their left on the mudlands of Portsmouth harbour. They consist of long earthwork curtains, with casemated batteries on the flanks of each curtain, the batteries intended to cross fire with each other, and sweep the whole front of the work. There are embrasures for 90 guns.

9. The channel between Portsmouth and Langstone harbours, connecting the two tidal waters, runs in front of the lines, and an inner moat separates this tidal channel, in which a certain depth of water is to be retained at all times of tide, from the base of the line of ramp. A new road has also been constructed for the use of the public entering or leaving the island from the mainland, which is to supersede the old highway, and the outer tidal water channel was to have been so designed, to use the exact words made use of in Colonel Jervois's report on the "progress made in the construction of the fortifications for the protection of the dockyard and the naval arsenals," dated February, 1867, "to give it sufficient dimensions to allow of the passage of floating batteries." The Hilsea lines have become a sand-covered ruin, with their casemates cracked and tottering over quaking bog and permeating chalk springs. The embrasures are choked with the falling earth intended to cover the brick face of the casemates on the flanks,

and the revetment walls throughout are kept in their places by an elaborate system of timber shoring.

10. The work of construction has been for years in hand, and successive contractors have been driven from it by ruin or despair; but still the locomotive with its long train of earth trucks may be seen toiling upwards and along the line of rampart depositing its earth coverings. The difficulties met with in the construction of this line of defence have been immense, but in time they will no doubt be finally overcome and the work finished. The embrasures have all been placed so closely together, however, that every alternate one must be built up, and thus the Hilsea lines will only mount one-half the number of guns for which they were designed. No one imagines it possible that Hilsea lines will ever be subjected to an attack by an enemy, and, therefore, in common with the huge forts on Portsdown, possibly, it can matter but very little whether guns are placed on them or not.

11. The eccentricities of the Hilsea lines, which appear to be of the greatest public importance at the present moment, relate to the construction of the new public highway, and the tidal channel connecting the waters of Portsmouth and Langstone harbours. The new highway has been carried by the Royal Engineers over the tidal channel referred to by a bridge, moving over central wheels by double rails, of such restricted dimensions that the local authorities—the Sheet Bridge Highway Trust—refuse to accept it, and a new bridge must therefore be constructed at the expense of the Government.

12. The tidal channel is a still more serious matter. When the Hilsea lines at present being constructed on the south bank of the tidal channel were first designed at the War-office, to supersede the old bit of fortification then standing there, the Admiralty communicated with the War-office, and desired that in any future alteration of the old tidal channel the width of the tidal water at high-water mark should not be less than 300 feet, that two openings for the passage of war vessels should be available in any new bridge, and that the tidal channel should be made of sufficient depth and width to admit of the passage through from Portsmouth to Langstone harbour, or *vice versa*, of floating batteries and gun vessels to assist in the defence of the island.

13. The Admiralty authorities also called special attention to the fact that in their taking a large amount of water space from Portsmouth harbour for the extension of the dockyard there would probably be a corresponding decrease in the total volume of tidal water in the harbour, which must be restored by other adopted means; that those means existed in the known flow of the tide from Langstone into Portsmouth harbour for two hours after the tide had made its ebb from the mouth of the latter; and that to secure the full benefit of this additional flood into Portsmouth harbour, it was imperative that the new tidal channel should be of sufficient width and depth, and that retaining gates should be fixed at the Langstone end of the channel to prevent any back-flow of the tide. It was also of the highest importance that the "scour" of the ebb tide should not be

lessened out of Portsmouth harbour under any circumstances, but rather increased, owing to the existence of two immense banks of shingle formed inside the harbour itself, and the known deposit of shingle on the Channel "bar" outside the harbour.

14. The very existence of Portsmouth as a naval port, therefore, seemed to depend upon the Royal Engineer Department constructing the new tidal channel in good faith with the expressed wishes of the Admiralty, but the work now stands on the verge of completion, with the important suggestions of the Admiralty ignored in every important particular. Instead of the channel giving a water way of 300 feet in width at high-water mark, with a depth sufficient for floating batteries and gun-vessels and a double passage under the bridge, it has now a breadth of water of only about 120 ft., has not a depth of water sufficient for the passage of such vessels, and only one available passage between the piers of the bridge, and will afford no material tidal addition to the ebb of Portsmouth harbour. Some correspondence has naturally ensued upon this matter between the Admiralty and the War Department, which has been so far closed by the latter, stating that the new tidal channel served all the purposes required of it for the strength and security of the fortifications, and that if the Admiralty desired a deeper or wider channel than the one made, the Admiralty could obtain a fresh estimate and do the work by its own officers! If we did not happen to know that the facts connected with the construction of this bit of water channel are just as we have related them, we should look upon them as far too absurd in their nature to deserve a moment's credit.

15. Leaving Hilsa lines at our feet, and looking out further to the southward, we can trace the sweep of the three lines of defence, until the eye rests upon the stagings and stone foundations for the marine forts at Spithead, or further still upon the great mound of earthworks on the summit of Bembridge-down, which forms the "keep" to the various forts on Sandown cliffs and sands, and commands the approaches to its beautiful bay with the anchorage inside the east end of the Wight at St. Helen's. The Spithead works, however, from their paramount importance and their present backward stage of progress, are of greater interest than any or all the others at the present moment. The "Horse" and "Noman" shoal forts will be the largest, and they will also be the most successful in their work of construction of the Spithead forts. The Horse fort has the base ring of its foundations standing on the shoal at 11ft. below low water of ordinary spring tides. The Noman has its base ring 20ft. below low water of ordinary spring tides. The foundations of each are formed of rings of granite, Portland, Runcorn, and concrete blocks, the rings decreasing in diameter as the foundation grows in height. The interior space of this layer of rings, in the centre of which an iron cylinder has been sunk from 50 to 60ft., and remains available for future borings for water, is filled in with concrete. The top of both the foundations for these two forts thus form a circular and solid base, on which the future fort must be built, 210ft.

in diameter. On this base all that is yet being done towards the construction of the forts themselves is building up their basement wall each 16ft. in height above the foundation summit, and 14ft. 6in. thick, of granite and Roach Portland stone. These walls are set back from the edge of the foundations 18in., to admit of a facing of armour-plating being given to it. The top of these walls will be level with the interior of the work on the floor of the lower gun battery. They will inclose the magazines, shell stores, provision stores, water tanks, etc.

16. The Spithead forts were at first intended to be of stone alone. Soon afterwards a granite structure faced with iron was adopted, but subsequent experiments at Shoebury demonstrating the inability of such a structure to receive the impact of heavy shots, without shaking its "heart" into fragments, the idea of a fort built up entirely of iron was entertained. This latter alternative, however, frightened every one by its evident excessive costliness, and the present adopted and somewhat composite plan was at length substituted. The forts are now to have an outer casing of 15in. of iron plating resting upon a simple system of longitudinal and transverse iron girders filled in with stone and concrete, and having an inner lining or skin of iron plating of about an inch in thickness. There will be two tiers of embrasures for 18-ton guns round the fort, and the latter will be capped by four turrets, each in the form of a truncated cone, constructed on plans proposed by Captain Steward, R.E., resting on brickwork piers, built up from the fort foundations and, therefore, independent of any support from the fort itself. Each turret is intended to carry two 23-ton guns. In the rear of each of the two circles of guns which are to look through the embrasures of the forts are the living rooms of the garrison. Traverses will be built up between each gun in masses of concrete, enclosed in iron-plate casings. Each fort will mount fifty-five 18-ton guns in the two circles or casemates, besides the eight in the four turrets.

17. The objectionable features in the plans for these forts appear to be an unavoidable weakness in their structure, owing to their composite character and the number of openings in their sides, the limited power of their armament, and their incapability for reconstruction or investing with greater strength, of either offence or defence, at any future time. Models of these forts are now lying at the War-office, but it is not improbable that even now great alterations may be made before the forts are built from them. It must always be allowed that if these forts are ever attacked by an enemy it will be with special craft, carrying not 18, but very probably 50 to 60-ton guns. To make the forts of real service in any possible wars to come upon us in the future, they should be so built that we could remove their armament and replace it with weapons of greater power as science progressed onwards in their manufacture. With bare room for mounting 18-ton guns, the Spithead forts become degenerated to torpedo stations, with their guns only of service to protect the nests of mines which may lie hidden in the waters of the deep channels which wash their base.

18. The Spithead plan of marine forts is made up with three others in conjunction with the Horse and Noman—the Spit Shoal, the Ryde Sand, and the St. Helen's Spit. The Spit fort foundations stand on firm gravel at 20 feet below low water and spring tides; the diameter of the base ring at high-water level will be 151 feet. It will carry 17 guns in casemates, 13 of which firing seawards will be protected by armour plating, and will be 18 tons each. Four firing in the rear of the fort are to have iron shields. Two turrets on Captain Steward's plan are to surmount the work and carry 23-ton guns. This work with Southsea Castle stands at the outer entrance to Portsmouth Harbour Channel. The fort to be erected on the Ryde Sand will be similar in character. The foundations of both are only as yet in process of construction. The fort at St. Helen's which is the outermost of all the marine works at and around Spithead, is intended to mount 15 guns in casemates, but a serious difficulty has been met with in constructing the foundations which delays the work. The site of the foundations lies in a very exposed position, and to make it as secure as possible a ring of iron caissons filled with concrete and brickwork in cement has been sunk 23ft. into the shoal outside the perimeter of the fort. The sand within this ring has been dredged out and filled with concrete. It is this ring of caissons which is now reported to be giving way to the action of the sea and the battering force of the shingle in heavy gales bursting on the point.

19. Southsea Castle is another of the works bordering upon the anchorage of Spithead, which the sea, in the fury of its south-east gales, is threatening to root up and destroy. It holds, with the marine fort on the Spit Sand, almost within speaking distance, a firm grip upon the throat of the entrance of the narrow channel under Southsea beach, which leads from Spithead to the entrance of Portsmouth harbour, and no ship or floating battery ought ever to swim past and between the fire of their guns. Southsea is massive open earthworks, with the embrasures prepared for iron shields. The old stone built castle in the centre is to be fitted with guns behind iron shields, and 13-inch mortars will throw their shells to Spithead from the rear of the earthworks. Twenty-two of the heaviest rifled guns will be mounted on the earthworks. The other supporting defensive works around Spithead anchorage are Lumps and Eastney batteries, the Puckpool mortar battery on the island shore, about a mile east of Ryde, and the granite fronted semicircular fort (for iron shields) building on the Gilkicker Point. The former is built, and is now receiving thirty-eight sea-service 13-inch mortars.

20. The value of a vertical fire in any defence of Spithead can scarcely be over estimated, but the Puckpool battery must be armed with a more scientific, reliable, and farther reaching weapon than the "obsolete" 13-inch iron pot, before it can be hoped to inflict any certain damage upon steam war ships rushing to and fro at Spithead, and all out of present mortar range. Gilkicker Fort is an imposing enough looking structure, with its grand outline of massive granite arches, although it has yet to be fitted with its iron shields. It will

mount twenty-seven heavy guns in its iron shields, and 16 13-inch sea service mortars in the rear. As a composite work of granite and iron it would offer but a poor defence against such floating iron citadels as would inevitably be brought against it by such an antagonist as France in time of war. It is also very contracted in its dimensions, the utmost amount of training for the 22-ton gun being 20 degrees.

21. There were other works to be seen by the Duke of Cambridge during his inspection of the troops and fortifications in the South-West District and around Portsmouth, including the heavy iron shielded works at Hurst Castle, the Cliffend, Warden, Hatherwood, and other batteries at the Needles passage, with the Golden-hill fortress and general keep for the western end of the Isle of Wight, and the works on other parts of the island, all designed for the defence of the great dockyard and arsenal at Portsmouth from the incendiary schemes of any possible future enemy. A large amount of these provisions for the insurance of our chief naval establishment has already been effected, although very much, as we have endeavoured to show, yet remains to be done. Vast sums of money have been and are being expended, and with the commission of a goodly number of "eccentricities," we have, at all events, the satisfaction of knowing that, with even the excessive stupidity displayed in some of them, they form but a certain amount of percentage on the gross amount of work done.

A WORD ABOUT THE AURORA BOREALIS.

How often on a fine, clear night in the broad Atlantic, as well as in North America, have I been delighted with the fanciful corruscations of the Aurora, while wondering at the interesting display of its phenomena, and speculating on their cause. Similar feelings to my own, and perhaps similar ideas concerning its origin have been shared by many a navigator, in ancient as well as modern times; and yet up to the present day, the origin, or cause, of this beautiful phenomenon is unknown. It is said that observations are not yet sufficient to enable the man of science to trace it to its source, and perhaps the following addition to the store may be worthy of record in the *Nautical*.

During the last four years my pursuits have placed me in very favourable positions for observing its fantastic appearances, having been constantly crossing the Atlantic in winter and summer, and I have been thus enabled to witness the Aurora as far south as the 40th parallel of north latitude.

It is perhaps owing to the foggy nature of the atmosphere in England that it is seldom seen in all its brilliancy in that country; but on the north coast of Scotland, and beyond it to the northward, its

corruscations in all their beauty are observed. About as far south as the above parallel, the corruscations are seldom perceptible, the centre of the main body of light alone expanding and contracting at irregular intervals. In August, 1867, the phenomenon was observed by me under singular circumstances. The ship in which I was employed was anchored in a deep estuary of Nova Scotia, one evening; its pine covered hills reached down to the shore on either side of the ship, within a few hundred yards of her. About a mile from her the estuary opened out into a large basin five miles in length. The weather during the day had been fine and clear, but about an hour after sunset, one of those dense fogs, so frequent on that coast, settled over the hills, leaving the water as clear as before, along with a few feet of the base of the hills.

At nine o'clock in the evening the whole surface of the estuary was imperceptibly lighted up, until it shone with a brilliancy as considerable as that of the moon. Indeed had our satellite been rolled out (to speak metaphorically) and as a sheet of thin bright metal been spread over the water, the effect could not have been more beautiful than that which was really produced. Far in the distance, were distinctly visible, the sails of the small country boats glistening, as they would have done under moonlight. The dark green foliage of the firs formed no inapt frame for such a glorious picture; and only a few among those who were present could believe that the beautiful scene before them was the effect of the reflected light of the Aurora. Fortunately however for them, in about half an hour the fog lifted as suddenly as it had come, and the sky in the northern quarter was seen brilliantly illuminated.

Let me now add my own speculations and the conclusions at which I have arrived, from this as well as other appearances of the mysterious Aurora. The first is, that about thirty-six hours after it appears the wind invariably blows hard from the south or south-west. Mariners should therefore be on their guard for this effect of its appearance. Secondly, it is evident that the Aurora must be caused by some disturbance in the atmosphere in the vicinity of the pole, and that a rush is made by a column of it from the *south*, to fill up the gap caused by combustion or otherwise. A fact which I have noticed elsewhere, in the course of my voyages, strongly confirms this theory—viz., that of the southerly wind following in about thirty-six hours after the Aurora has been observed in the 45th parallel of latitude.

I have traced the wind for six hundred miles after the last gale of the beginning of August, and found it everywhere S.S.W. to S.W., or nearly true south; hence it would appear to me that these Auroras perform an important part in regulating our winds. Nothing in this globe of ours is created without design, and it is not reasonable to suppose, that this beautiful phenomenon was called into existence solely to light up the snow-clad wilderness of the north. Again, who shall say how far the system of aerolites is connected with the Aurora? It seems more reasonable to suppose that they owe their origin to causes in connection with our planet, than that they should break away

from the laws of gravity in another. If the latter theory be correct we ought to expect bodies expelled from mountains to fall to the earth occasionally.

W. W. KIDDLE, *Navigating Lieutenant.*

We reprint the following from one of our former volumes, 1848, from a meeting of the British Association, as it will interest our correspondent:—

As the trade winds are caused by the denser air from the polar regions to the tropics, the superior trade winds in the higher regions of the air must be from the tropical to the coldest parts of the earth, to keep up the equilibrium of the air. Then, as it is proved by Forckhammer, that more vapour rises from tropical seas than falls there, and that more falls in polar regions than rises in those parts; and as it is proved by the experiments of Volta and others, that whenever evaporation takes place positive electricity is carried off—it follows that there are electrical currents similar to the currents of the air, the vapour with its electricity rising in the tropics (thus rendering those parts negatively charged) is carried thence by the *superior* trade winds to the colder parts of the earth, where the vapour falls; and its electricity escaping to the earth, renders those parts positively charged, whence the electricity rushed off along the earth's surface towards the more negative parts of the earth, and is again carried off by the rising vapour. Mr. Rowell ascribes the direction of the needle, to those currents of electricity from the positive to the negative parts of the earth, and the Aurora to the interruption of those currents of electricity, by the dry and non-conducting state of the air in the *frigid regions* during *severe frosts* insulating the electricity of the clouds, where it accumulates till it flashes back through the higher and rarer air towards the more temperate regions thus exhibiting the aurora, and at the same time causing a disturbance of the magnetic needle. The author thinks that many writers have fallen into error in supposing the height of the Aurora to be far above the limits of our atmosphere, which error may have arisen from some mistake in their observations or from some other luminous meteor being mistaken for the Aurora, for as the observations of Parry, Franklin, Richardson, and others distinctly prove that the Aurora does take place near the surface of the earth, and is in some way connected with the formation of clouds, the arches which are sometimes seen at such great altitudes may arise from totally different causes. He considers that the diurnal variation of the needle tells in favour of the opinion that the direction of the needle is dependent on evaporation; as very early in the morning, when to the eastward of our meridian, evaporation must be at a minimum, the declination is least: the declination then *increases* till about the time when the evaporation must be most rapid, and then decreases, till in the evening it reaches its medium position; and the fact that the diurnal variation is more than double in summer what it is in winter, tells in favour of this view.

The cause of magnetic poles in this hemisphere he ascribes to the

quantities of ice blocked up both in winter and summer in the high latitudes above the two continents, thus causing those parts to be the coldest in this hemisphere, and therefore the negative poles, for, as the density of the air from the frigid regions is the cause of the trade winds, and as the density of the air intervenes with the degree of cold, it follows that more air must flow from the coldest parts of the earth towards the warmer regions than from any other parts, and consequently, there must be the greater flow of the *superior currents* of air from the warmer to those colder parts, thus bringing more vapour and electricity there than to any other parts in this hemisphere. Now if the greatest degree of cold be at the pole of the earth, and evaporation increased regularly thence to the equator, there would then be no declination of the needle, as the electricity would pass off from the coldest or positive parts towards the more negative parts of the earth in the direct lines of longitude; but as the magnetic poles are at a distance from the terrestrial pole, and as those parts are more positively charged with electricity than other parts in the same latitude, the electricity must diverge eastward and westward of the direct lines of longitude in passing off to the more negative parts of the earth, and thus cause the declination of the needle.

The author contends that the fact that the Aurora did not affect the needle at Port Bowen in 73° N. lat., while it had great effect at Port Franklin in 65° N., tells in favour of his views, that the direction of the needle is owing to the currents of electricity from the magnetic pole to the more negative parts of the earth, as the American magnetic pole is in 70° N.

Mr. Rowell exhibited a large diagram of the earth, from the north pole to 40° N. lat., shewing at one view the situation of the American magnetic pole according to Sir James Ross, and the Siberian pole according to Hansteen, the lines of equal intensity from Col. Labine's maps, the lines of equal temperature from Humboldt, the directions of the needle shewn by arrows, etc. By the diagram he showed that in the meridian of the American pole, the lines of equal temperature to be much lower latitude than in any part of this hemisphere, which he ascribed to the polar seas there being land locked, and causing a great accumulation of ice in those regions, both winter and summer, whilst the magnetic force, also, is the greatest in that meridian.

In the meridian of the Siberian pole, the polar sea is far more open, the temperature is higher, and the magnetic intensity less. In the neighbourhood of Behring's Straits where the Polar Sea is open to the Pacific Ocean the intensity is still less, but in the meridian of London, or rather to the east of it, the line of equal temperature rises to a much higher latitude than in any other part of this hemisphere, the intensity of magnetism is the least, and the Polar Sea is there open from Greenland to Nova Zembla, and the ice formed in those regions is liable at all times to be broken up and dispersed by the storms of the Atlantic Ocean. He considers the magnetic poles not to be mere points in the earth, but extensive districts in the coldest parts, and that even mountains, which from their elevation, are continually con-

ducting electricity from the highest regions of the air, must have some local effect on the needle. He contends that the opinion is erroneous which ascribes the changes of declination to a rotation of the magnetic poles round the pole of the earth, as we have no proof that the magnetic poles in this hemisphere were ever situated otherwise than in the high latitudes above the two continents, and that the change of declination may be fairly explained on the supposition that the American pole has *increased* in strength, or the Siberian pole has *decreased* in strength, and that the line of no variation where the influences of the two poles are equal, has receded during the last two centuries from some point west of England to its present position eastward of St. Petersburg, thus bringing parts which formerly had an eastward variation to be under the influence of the American pole. He suggests that any geological change which has made the Siberian Polar Sea more open would tend to weaken that magnetic pole, or any change that may have blocked up the American Polar Sea would increase the strength of that pole. He concludes by again suggesting the experiment of raising electrical conductors, to the height of the clouds in the frigid regions during severe frosts, which he believes would cause the Aurora, and also throw some light on terrestrial magnetism.

CONSIDERATIONS of the winds, currents, and tides of the Gulf of Cadiz, and the Western Shore of the Spanish Peninsula, with the best points for making the coast from sea, and how it should be navigated.

(Continued from page 609.)

Currents on the Western Coast of the Peninsula.—On the Western shore of the Peninsula the currents are strong, and in its immediate neighbourhood run from South to North, and North to South according to the prevailing wind. But in the offing they incline to the N.E. or S.E. according as the wind may be S.W. or N.W. Against these on-shore winds vessels must therefore take precaution, for if the S.W. wind is blowing, or even the N.W. also, the vessel will drift to the shore. Experience has shewn that allowance must be made for drift by steering more westerly courses than the lay of the coast would require to keep clear of it especially when it is blowing hard.

Currents previous to the wind. It is observed on the coast of Galicia, and the same would naturally occur on the coast of Portugal that, on one or even two days previous to a gale, the current sets towards that point of the horizon from which it will eventually come; that is when the current sets to the South without any apparent cause the Vendaval will come in a gale, and a similar result follows when the current sets to the North. So that the fishermen who have most to do with

allowing for currents know very well by them when a N.E. or S.W. wind is about to set in.

Strength of Currents on the Western Coast of the Peninsula.—The current generally produced by the wind, sets to the N.E. and North, when that is from any point between South and West, and it sets to the South when the wind is any where between West and East from the northward. In winter the current sets mostly from some point between North and East, and in summer from some one between North and West, and its hourly rate is about two miles, and even more with a strong Vendaval.

The navigator who finds himself off Cape Finisterre with a Vendaval to beat against must be careful of the shore in bad weather, for he will be drifted insensibly to leeward until he has passed Cape Prior.

With respect to ships off Cape St. Vincent, bound towards Cape Finisterre with fresh N.E. winds they will find enough to do, to overcome the current they will meet with along the coast. And with fresh N.W. or S.W. winds there is also a rise in the level of the sea, in all the Estuaries and ports of the Peninsula, the reverse of what takes place at Cadiz and in the Bay of Biscay with N.E. winds.

Tides.—This phenomenon preserves all its regularity on the shores of which we are treating, and a supplement of waters as the pilots call it, can only be observed when N.W. winds prevail. That is when the said winds prevail, a large mass of waters is accumulated in Cadiz Bay, and every high water rises above the usual level, and makes the time of high water later. The same occurs on the Coast of Portugal and Galicia, and this delay in the time of high water and increase in the rise of the tide becomes greater the further it is to the northward.

Propagation of the Tidal Wave.—The tidal wave of flood, as it flows from South to North in the Atlantic Ocean, naturally enters the Bay of Cadiz before it reaches the Portuguese Coast as well as that of Galicia. This progress of the waters originates a current called tide, which on the African coast spreads itself according to its configuration, that is from S.W. to N.E. ; in that of Cadiz from South to North, inclining to the N.W. according to the trend of the coast, and finishes by running to the West on the Coast of Algarve, doubling Cape St. Vincent, from whence it takes a northerly direction along the Coast of the Peninsula. All this takes place on the flood, for on the ebb the water retraces the above course in the opposite direction, and the various currents it forms also assume the opposite directions.

The current of tide runs only at a short distance from the shore, and only surpasses this distance at the heads of the tides.

The general currents above described in no way interfere with this singular phenomenon and only tend to increase or diminish its current when favourable or unfavourable.

Equinoctial Tides.—When the high water of sizigy happens near the vernal equinox (March) and a heavy Vendaval is blowing, so considerable a rise of tide takes place in the bays and ports, that the jetties and the low lands about the shore are inundated, and sometimes considerable damage is done. At Cadiz not only are the highest parts of

the sides of the jetties whitened by the foam, but the sea also threatens the very walls of the city. The current of the flood is more or less increased in such cases and the tidal establishment of the port is delayed.

Tides in the Mediterranean and Gibraltar Strait.—With respect to tides of the Strait we have already noted what takes place, and we will record here some facts in corroboration of it. It is generally considered that the Mediterranean has its peculiar tides. But this conclusion is not altogether sufficient. A portion of its waters, particularly that between the meridians of Capes de Gat and Trafalgar, is entirely obedient to the luni-solar influence, following the prescribed course, and is lost in the West by becoming mingled with the great tidal wave of the ocean in its course from South to North. This portion increases until it attains the height of twelve feet at the times of the sizigies, and this difference of level remains established as we have already observed.

When this takes place, two currents are produced on both the shores of the Mediterranean towards the West, or rather perhaps against the general current to the eastward. The coasting vessels which avail themselves of this current to get through the Straits against westerly winds, trip their anchors when the moon appears in the horizon, for then it is that the tide begins to raise the level of the waters.

During the ebb the tidal wave follows the reverse order, taking its course in the ocean from North to South, and in the Strait and part of the Mediterranean from West to East, but gradually decreasing in this sea and vanishing after passing the meridian of Malaga, and these phenomena are reproduced off the middle of that headland.

The failure of the Mediterranean tides is attributed to the extreme narrowness of the Strait, the conclusion being that the great mass of the ocean tidal wave is thus prevented from entering it. But we consider that a more logical reason may be advanced to account for it. If we consider the general features of this sea, we find it divided into numerous compartments, many of which appear to constitute small lakes, nearly all of them being insensible to the luni-solar attraction, and only in its central portion which is the most important part and free from islands do we see the waters uniformly obeying the law of luni-solar influence and attaining at springs the height of six feet.*

We may, therefore, deduce from the foregoing that the cause of there being no uniformity of tides in the Mediterranean must be attributed to its special formation, that is, to the subdivision into small,

* Captain Smyth in the course of his exploration of the Mediterranean coasts took an opportunity of observing the tides in the channels of Karkenna and Jerba within the gulf of Kabes and he found a rise at springs of 1·7 in 5·6 feet, and also that the tide rose eight feet in a fresh *Levanter*. The losses which Count Pedro Navarro experienced in the island of Jerba (*Geloes*) on the 30th of August, 1510, were augmented by the impossibility of the people embarking to save themselves in his galleys, from his boats having remained aground at low water when the tide ebbing out exposed so much of the shore of the island.

portions by the receding and projecting of its line of coast, and by the islands which are off its northern and southern shores. Laying aside the reason of this singular condition of the case, it is certain that the tides of the Strait of Gibraltar are a powerful auxiliary in passing it from East to West with westerly winds, and the coasters, which are sailing vessels, know how to profit by it, and do so without any great difficulty.

Strength of the Tidal Stream.—One mile an hour may be accepted as the mean velocity of the tide at spring tides on the coasts of which we have been treating, but in the channels it reaches to three and even four miles an hour according to their direction. And the same takes place on the ebb.

In the vicinity of the western entrance of the Strait of Gibraltar, the ebb is always stronger than the flood, and its strength increases in proportion as it has passed Cape Trafalgar.

Establishment of the Port.—Such is the name assigned to the hour of the first high water immediately after the noon of the day on which the sizigies occur, or rather perhaps the days of conjunction and opposition of the moon. This hour is nearly constant for the same place in normal conditions of weather, etc., and the observations for its determination are confirmed at the anchorage, and also at the bars over which the tide passes.

Variation of Tide time.—However small the difference from the normal character of the weather, the actual period of high water varies a good deal, being affected according to atmospheric pressure, and the effect of the wind. In consequence of these variations, the hour of high water is later, because there is a larger collection of waters; while at other times it is earlier because there is less, a consideration which should be allowed in foretelling the time of high water when a vessel intends entering a port of small depth, and where it is indispensable to go in precisely at high water, as well as when leaving it.

The establishment of the ports are drawn up in tables for the use of navigators. The times stated in them are always the means of a multitude of observations made under favourable circumstances at every place; and the navigator must make allowance for the earlier or later period of high water according to the actual condition of the weather.

In bays and harbours of considerable depth such differences may be neglected; but they require special attention at places of small depth or when passing over bars or rocks of scanty depth of water.

Establishment of the Bay of Cadiz.—With respect to the bay of Cadiz, 1h. 30m. may be considered the establishment on all parts of the coast. But as the tidal wave progresses through all its channels, bays, and harbours, it alters, being later at each place, so much so that while at the entrance of the bay of Cadiz it is 1h. 24m. in the channel of Caraccas it is 2h. 30m.; at Chipiona it is 1h. 34m. and at Bonanza it is 2h.; at the bar of Huelva it is 1h. 54m. and at its mole it is 2h.

On the coasts of Portugal and Galicia the establishment is somewhat later, for while at Cascaes it is 1h. 40m. and at Lisbon it is 2h.; in

the mouth of the Douro at Oporto it is 2h. 30m.; at Finisterre it is 3h., at the Sisargas it is 3h. and at Corunna 3h. 30m.

Range of the Tide.—Such is the name given to the whole rise of the tide, or the difference of level between high and low water at the time of the sizigies. The height of the level of high water is more subject to change than the establishment of the port.

In the tables abovementioned the mean of a multitude of observations under normal conditions at the ordinary sizigies is called the range of the tide.

Range of the Tide in the Bay of Cadiz and on the Coast of Portugal.—The greatest height which the tidal waters attain in the Bay of Cadiz is from twelve to thirteen feet as a mean result at ordinary springs, and fourteen to fifteen feet on the coast of Portugal and Galicia. At equinoctial springs three to four feet high must be added to that height unless any atmospheric change takes place.

But it is very well known that the maximum height of the tide never coincides with the time of high water at the sizigies, but that it is from thirty-six to forty-eight hours later; consequently the navigator bound to a port having a shallow bar, must bear in mind that the highest tide will always be that corresponding to the second or third day after new or full moon.

Streams of the Tide.—Certain threads of the tidal stream appear always to take place as the consequence of the general current continuing until they disappear entirely. This phenomenon, constantly occurring in the Strait of Gibraltar, is scarcely perceptible at its western entrance. They are found more especially off the salient points of the coast, and with more intensity off those which project at right angles to it. Hence, off Cape Trafalgar the stream which bears its name is perpetual.

Cause of the Streams.—To all appearance these errant streams of tide are produced by the encounter of two opposite currents: and from what has been observed in the Strait, that the strength of it increases with the tidal stream attaining its greatest strength at half-tide when the streams of flood and ebb are at their maximum velocity.

The Cape Trafalgar Stream.—The errant stream off Cape Trafalgar is most violent, without failing its utmost strength in either tide whether it be ordinary springs or neaps. It extends off to the S.W., beyond and passing over the Aceitero rock until it becomes lost in the general current.

When the swell or sea runs in the same direction as the errant stream the waves rise so much as nearly to break, which leads to the suspicion that there are rocks in localities where they are unknown. It is advisable therefore for vessels to avoid them and to keep further even from Cape Trafalgar when there is a high sea running.

Errant Streams outside of the Straits.—Although these errant streams are common enough to the eastward of the Strait they are not to be found to the westward of it. From this it is natural to infer it should be so, because the general easterly current carries them into the Mediterranean until they subside, while in the western entrance of the

Strait they only begin to form themselves off Capes Trafalgar and Espartel.

Errant Streams off Cape St. Vincent.—In the Gulf of Cadiz to the West of those Capes these errant streams are unknown, and only outside Cape St. Vincent, and about three miles from it, now and then one is found which on account of the scarcity of them, has been taken for a rock. But this may be entirely attributed to the shock of the general current which runs on the Coast of Portugal with the stream of flood which sweeps out of the Gulf of Cadiz.

Similar threads of errant currents are formed on the Coast of Galicia, which sometimes alarm navigators as they occasion appearances as if formed by rocks. These threads may be the effect of the tidal stream as it leaves the estuaries, meeting the general current along the coast.

Rollers.—Such is the name given by the Spanish navigators, and *vaga de Mar* among the Cantabrians and Galician seamen to the swell which collects on coasts occasioned by the on-shore wind, but which does not itself reach the place where it is observed.

In the Gulf of Cadiz it is often observed, particularly in winter. A swell comes from the S.W., attracting attention by the noise which it makes by breaking on reefs. These noisy waves are the forerunners of the *Vendaval* which prevails beyond the horizon, and which sometimes is not long in coming, bringing along with them dense and heavy clouds which darken the atmosphere, while the waves inundate the coasts.

This swell is the precursor of the wind which produces it, and sometimes this wind does not reach the place where the swell is observed, being opposed by another more powerful current of air. But by the magnitude of the waves and the direction of their course, an opinion may be formed of the kind of weather which prevails in the district from whence they come, in the same manner as we can form an opinion of the wind which prevails in the loftier tracts of the atmosphere by the direction and swiftness of the clouds* which it carries along with it.

* Clouds are the surest indications of the direction the wind is following in the upper and lower regions of the atmosphere, for they show the direction in which the upper aerial currents are moving over that which we experience on the surface of the globe. The higher and lighter clouds are seen to move frequently in a direction contrary to that of the wind that is blowing below, and when this is observed we may prepare, before long, for the wind which is (as it were) thus promised, which is initiated in lofty regions, for it is certain that atmospheric currents are formed gradually from the higher to the lower parts, and in a manner more or less oblique.

From these small woolly but higher clouds, which are seen to move from S.W. to N.E., seamen know that the S.W. wind will soon follow whatever other wind may be blowing at the time with its corresponding weather.

A still higher stratum of clouds will enable the seamen to prognosticate the wind which will follow in a district more or less extensive, particularly evident on clear nights. We allude to what are called shooting stars. From time immemorial it has been believed by navigators that the wind will come from the point of the horizon indicated by them as from whence they came, and careful observations of Mr. Coulier Gravier, and which he is still following, partly confirm this assertion.

On the Coasts of the Gulf of Cadiz this swell is the certain indicator of the *Vendaval*, and sometimes it will foretell the wind even for two days. On those of Portugal and Galicia, whether it comes from S.W., West, or N.W., it is always a sign of the same weather prevailing in those directions, and its presence prognosticates the coming of the wind which sends it.

There are occasions when it delays much its arrival on the coast of the peninsula, and at other times the wind which produces the swell does not come at all for reasons already stated. But in general it is the signal of the wind which is about to prevail.

N.W. Swell.—A N.W. swell is very common in winter on the western coast of the peninsula, and in March and April is almost incessant on the African Coast. It is very well known to those navigators who make the voyage from the Straits to the Antilles, who begin to experience it as soon as they reach the meridian of the Canaries. They consider it to result from those heavy N.W. gales which come from Davis' Straits, and they are confirmed in this opinion by the fact that when they reach the meridian of Newfoundland the swell disappears, owing they consider to the impediment presented by the great bank.

This swell makes terrible havoc on the Coast of Africa, rendering it unapproachable for long intervals of time, and vessels which unhappily get on shore on that coast while it prevails, soon go to pieces and the crews are drowned. Vessels which are accustomed to lie in Jeremias bay and the coast about Laraiche as far as Cape Blanco for shelter from the Levanters, have good opportunity of observing this swell, which produces a mass of breakers on the rocks and distant banks which lie off the coast. Such heavy swell being observed by a vessel, she should on no account approach the shore under sail, for she might get becalmed and then thrown on the reefs, or might, in order to prevent it, be obliged to drop an anchor that might never be recovered.

The N.W. swell attains colossal dimensions on the West shore of the peninsula, and on the Coast of Spain. It shows itself in mountains of water of so wide a base that they attain a height of sixty to seventy feet, and acquire a force that would destroy the strongest vessels,*

This philosopher has observed that those meteors move in the higher regions of the atmosphere, and that they reveal the direction of these aerial currents in which they move, a revelation which coincides with barometrical indications. These currents on approaching the earth's surface disturb the most dense vapours, as well shewn by the barometer which indicates the approaching aerial currents, and foretells the direction of those luminous displays which leave behind them the exhalations called shooting stars.—*Researches on Meteors by M. Coulier Gravier.*

* Admiral Fitz-Roy in the *Thetis* frigate, observed sixty-six feet as the height of the wave in a gale in the Bay of Biscay.

The following are quoted by the "Annuario." The heights of waves in wide and deep seas in a gale of wind may be estimated as between thirty-five and forty-five feet from the summit to the base. There are authorities which assign forty-seven feet as the height with a distance between them of six hundred feet, and a rate of travelling of thirty miles an hour.—*N.M.* 1854, p. 49.

Sailing vessels finding themselves hampered by such seas near the coast have narrowly escaped a horrible wreck by a merciful interposition of Providence, in a favourable off-shore wind, by which only they have been saved from destruction.

Barometric Oscillations. When the barometer merely shews the weight of the atmosphere, it is even then useful to consult for the sake of knowing the changes which take place in it as the vast laboratory wherein the most destructive tempests and the most astounding meteoric phenomena are produced.

We know that the rising and falling of the mercury in the barometer are the result of the actual pressure of the atmosphere on the surface of the mercury contained in its cistern. A rising of the mercury shews an increase of atmospheric pressure on the surface in the cistern. This occurs with winds from the northern quarter, and consequently a rising in the mercury will always indicate a tendency of the wind to come from that quarter which is also always the coldest. Again, on the contrary, with a fall of the mercury in the tube it rises in the cistern, shewing a lesser pressure on its surface, and this is the case when winds from the southern quarter prevail, which again are also the warmest, and therefore a falling in the mercurial column is a prelude to winds from that quarter of the horizon.

Between these two extremes there is room for a multitude of gradations according to the density or lightness of the atmosphere, and hence the study of the oscillations in the tube of the barometer enlightens the navigator in the subject of atmospheric changes and enables him to foretell what will occur. Still it must be remembered that if for the most part the warnings of the barometer coincide with atmospheric changes they do not always accompany each other.

Notice of Southerly Winds. A fall in the barometer that precedes rain on our coasts generally indicates southerly winds, which are warm, and crossing the ocean come loaded with vapour. Consequently the barometer falling will always indicate an expansion of the atmosphere occasioned by warm winds from intertropical regions, but gives no indication whether from east or west of south, or whether it will be accompanied by heavy or light rain.

Notice of Northerly Winds. Again, the rising of the mercury reveals a condition of the atmosphere entirely opposite to the foregoing, because it is owing to northerly and north-easterly winds which are always the coldest and most dense, and because they pass over large continents they come to our shores in general dry and clear.

The atmospheric pressure indicated by the barometer also shews us different heights above the surface of the sea. A rise in the mercurial column or a depression of the surface in the cistern always accompanies a depression in the level of the sea and this is detected in the harbours where the high waters do not attain their usual level, and

In seas not very deep, waves attain an immense height, and have been observed more than one hundred feet high near the Eddystone in the mouth of this Channel.—*N.M.* 1835, p. 609.

the time of high water is earlier. The contrary takes place when the mercury rises in the cistern, for then, the least pressure raises the level of the water and the time of high water is later. Thus it is that the pilots of the ports, fishermen, and others acquainted with the sea, foretell by means of these differences of height the probability of northerly or southerly winds.

In fine weather the level of the water is much lower than ordinarily with northerly winds and a low thermometer, and the contrary takes place when the wind is southerly and the temperature high. All this is observed most satisfactorily in the ports of the Mediterranean which are not subject to tides.

When the barometer rises or falls slowly for two or three consecutive days its indication may be most assuredly depended on; but rapid changes indicate wind or bad weather.

The thermometer generally follows its movements in a manner contrary to those of the barometer; that is, it rises when the barometer falls and vice versa. A high barometer and a low thermometer always foretell northerly winds, and barometer low with thermometer high southerly winds.

The changes of the barometer off Cadiz are very remarkable. In the course of five years' observations in the Tower of Tavira it never varied above an inch. In January, 1858, it attained its highest reading with a northerly wind and clear sky; and it was at its minimum in November of the same year, with a heavy south-wester and torrents of rain.

Other observations before us at the Astronomical Observatory of San Fernando at Eight every morning from the First of January to the end of July, 1865, shew that the whole range of the barometer was 1.024 inches, the highest which was 30.6 occurred in February, 1864, with an E.N.E. wind light, thermometer 38°. The lowest was 29.5 in March of the same year with strong southerly winds and rain, thermometer at 54°.

In the Gulf of Cadiz the changes of the thermometer are very small. The small variation of its climate is its best praise. Situated in a temperate part of the world, and far from the snowy peaks of mountains it is not subject to much change of temperature. The sky is mostly clear and but little rain falls there. Nor is it much visited by thunderstorm. But it has a reminder of the Levanter of which we have already spoken.

Coast of Portugal. How different from this is the weather of the coast of Portugal and also Galicia, where it rains during a great part of the year; because here it is that those watery winds which come across the Atlantic from S.W. and N.W. discharge the showers with which they are loaded.

For the same reason the barometer changes are greater on these coasts than in the Gulf of Cadiz, and this is proved to us by the observations extending through a period of two years at Lisbon.

From these observations it appears that the range of barometer was small; that the highest reading of the barometer was 30.5 with the

wind at N.E. light and clear in February, 1865; the thermometer being at 54°.

Fog. This vapoury condition of the atmosphere is another of the enemies which the navigator has to contend with, very often to his loss, for they not only blind him to external objects but at the same time allow him to be driven along with the surface current of the ocean.

According to scientific men fogs are occasioned by the difference of temperatures between adjoining regions of the ocean: and their occurrence is, at the mouths of estuaries, the land in the vicinity of which sends forth a vapoury atmosphere which is condensed with the cold atmosphere of the low capes.

Fogs on the coast of Spain. The coasts of Galicia and Portugal are much visited by fog, and principally at the mouths of the estuaries. But they are most frequent in moderate and wet winters.

Fogs in the Strait. In the Gulf of Cadiz they are occasionally very enduring especially at its western entrance. At the termination of the easterly wind they usually occur there appearing like a barrier to it, gradually advancing to the eastward until they completely cover it, and clearing away as soon as the westerly wind is fairly established.

The fogs which collect about daylight at the mouths of the estuaries of the Portugal and Galicia coast generally clear away about noon.

Fogs on the African coast. On the coast of Africa there are also in the early morning or later these same fogs and generally with N.E. winds. Sometimes they will extend over the entire Strait, forming in the western part of it like a wide curtain, and as night approaches completely cover the whole coast.

Sometimes they are so close down to the surface of the sea that it is common to see the masts and rigging of vessels above these fog-banks, while their hulls are entirely concealed by them. Fortunately this occurs in quiet weather, when vessels under sail make little or no progress, which adds to the chance of bells, foghorns, or any such noisy instruments being heard, and thereby keeping clear of each other, numerous as they may be as in the Strait of Gibraltar.

Nevertheless these precautions are not always sufficient to prevent collision between vessels, for the streams of the currents will drift several at once, occasioning their fouling in spite of their attempts to prevent it, and if on these occasions there should be added a strong tide, the consequences become still more serious.

Steamers under such circumstances slow their speed, making their positions known by the steam whistle; and generally suffer least as they always have the means of keeping out of each other's way.

Haze. A hazy state of the atmosphere is almost as bad as fog if happily it is not so dense. This occurs in times of great heat, and on the coasts of Portugal and Galicia is most frequent with N.E. winds.

In the summer time in the Gulf of Cadiz, especially with light southerly winds, the haze on the horizon is considerable, and the effect of it on vessels and buildings near the sea is so great as to alter their form in appearance, and throw out the points of the shore as if they were lifted above the water. A considerable amount of haze generally

indicates humid and wet weather, and easterly winds with a tendency to the south.

During a dry winter in these localities, thick fogs will occur and not admit the shore to be seen except at a very short distance.

A general fog more tepid still will occur at this season with the *Vendaval*. These become so extensive as to cover the whole coast under our consideration.

Navigators who may be making the land under these unfavourable circumstances, are frequently at a loss to determine what land it is they may have in sight, for notwithstanding their reckoning may be good, the heights of the interior are still concealed from them. Even the objects on the shore are so distorted that white towers and such like buildings are often mistaken for vessels under sail. And if the coasts they are on have outlying reefs and are shoal to approach, they are in the risk of getting aground unless some break indicates their presence.

THE QUEEN ADELAIDE NAVAL FUND.

For the benefit of the Orphan Daughters of Officers of the Royal Navy and Royal Marines.

THE readers and friends of this work will admit that it is an important part of its duty to bring before them occasionally, not only the condition and progress of the little auxiliary institution which bears the above name, but also to shew how much it is in need of their assistance and that of the British public in general. Appeals which from time to time have appeared in these pages, as well as in those of our contemporaries, have been successful, in making known the existence of that Institution; and it would have been still more satisfactory could it be said, that, those appeals had been equally successful in bringing to its resources the means of meeting more liberally the numerous applications made to it for assistance.

Those applications, to which the Society has been compelled to reply with refusal, are in fact so many proofs of the great amount of privation existing in that class, the relief of which is the object of this Society. And indeed the full extent of that privation can only be known to those who would accompany the Committee in their duty of investigation with a view to relief.

During the seventeen years of its past existence the operations of the Queen Adelaide Naval Fund have been actively but quietly conducted. Perhaps it might be said to have been feeling its way, silently and steadily with what sympathy it could obtain; but it is too true, that each year as it passed by, has added conclusive proof of the accumulating want there was for its assistance,—in fact, of the abundance of work there was for it to do!

Founded in 1850, by the widow of an accomplished naval officer, who lost his life while in command of his ship in the cause of duty, its

operations up to the present year have been carried on by the untiring efforts of that self-denying lady, Mrs. Skyring, aided by her devoted son, who, as Archdeacon Robinson most justly observed at a public meeting, held in April last, was "eminently fitted for the work, not only by his abilities, not only by his zeal in the service of this useful charity, but by his great affection to his mother, which prompted him to continue in the good work, and to assist the Society in every way that he could." That amiable gentleman, esteemed by all who knew him, has been removed by the hand of death, and the Society, while mourning for his loss, has also the additional sorrow of seeing that enfeebled health has necessitated the withdrawal of Mrs. Skyring's able and active assistance. She whose noble mind originated this Society, by whose well directed efforts it has reached its present useful condition, under the weakened energies of advancing years, feels the necessity of rest; she lays aside the burthen of its cares, and as a Christian would say to her Christian successors, in all the fervency of her warm and charitable heart, yet, in faltering accents at seeing the grateful task, where adversity has called, slipping away from her, she resigns it to them, and might add were it necessary—"Go, and do thou likewise!"

And shall we not do so? Shall the good work not go on? Shall so useful a Society,—one though small at present yet so much needed,—one that has proved its valuable assistance and imparted joy where sorrow and suffering reigned!—Shall such a society be permitted to languish and droop in distress at its loss? We think not. Such is not the way of our countrymen. This little Society has passed its youthful trials, and great they have been. Yet it looks with confidence to future years of increased usefulness, and that confidence is founded on the benevolent Christian feelings of those who know the gallant hearts of which our Navy is formed,—those who can feel for them in their rough and perilous duties throughout the world, and not only feel for them but can say, "Yes, go on, we will help you, we will assist you."

The Adelaide Naval Fund, encouraged to take its part in the field of benevolence under the fostering care of such names as those of Sir Francis Beaufort, Sir Charles Adam, Sir Edward Parry, and many more too numerous to recite (names dear to the Naval Service at large), has succeeded in doing much good. And shall it be said of their successors, that the Naval Service is unmindful of the example left to them,—that they are indifferent towards the good work, and that they can withhold from this valuable little institution (thus bequeathed to them) that small support essential to the performance of its task of love? We do not believe it; we are confident that it is only necessary to bring before that Service the claims of this *now little* Fund, to ensure not only their support, but the support indeed of every officer in that Service! Who is there in it, even to the lowest rank, that could not contribute *annually* some small fraction of his pay in support of labours so excellent, so useful as theirs? And readily would any post office of this country *add wings to a money order*, by which the

Hon. Secretary could receive its amount in London from those who *must be* disposed to assist the widows and orphans of their less fortunate brother officers.

An income of three hundred pounds a year is scanty enough as composing that of the Adelaide Naval Fund. But of this, only about seventy pounds derived from an invested capital of two thousand four hundred and twenty pounds, can be regarded as permanent income. Great need there is indeed of donations to increase this capital. Great need there is of a larger list of annual subscribers to meet the many wants which its small permanent income cannot relieve.

To the public at large the Society appeals on the score of the risks of all kinds to which the Navy is exposed, and the hardships endured by every branch of that profession,—their constant trials of separation from all that is dear to them,—the difficulties they meet in making provision for their maintenance,—the additional expenses they incur on account thereof, owing, irrespective of service risks, to their frequent exposure in bad and unhealthy climates,—the increased cost of life insurance being itself a serious impediment to their making an adequate provision in that way. These are indeed difficulties unknown to those who “live at home at ease.”

To those of the Naval and Marine Services it appeals, with all the earnestness of parental care. A day's pay or even part of one by way of *annual* subscription would go far, very far, in assisting the exertions of the Committee, whose duty it is to enquire into and relieve, as far as it can, the distress which comes before it. And we would commend for imitation, the example of the officers and crew of H.M.S. *Princess Royal*, in China, who, twice by means of amateur theatrical performances were enabled to send donations respectively of eighteen pounds and eleven pounds. Such sympathy with the families of their deceased brother officers is especially valuable, as becoming the character of Christians towards the suffering relicts of their late Christian brethren. To the generously disposed the power of helping those who with every desire to assist themselves, are borne down by circumstances, difficult if not impossible to control, is ever a strong incentive. We ask them to emulate the example already set by those, who in anticipation of their final summons, appropriate some portion of the wealth they leave behind them, not to forget the interests of this Society. And it is with pleasure we can tell them that the Report of the present year speaks of one hundred and fifty pounds *thus* added to the permanent stock of the Queen Adelaide Naval Fund.

To the mercantile community at large we also appeal with confidence; themselves not unaccustomed in many instances to a sea-faring life, they can well appreciate the risks and hardships involved in naval duties. They too know what separation from home is—though there is generally speaking for a much more limited period, and less dangerous service than that of their brethren in the Royal Navy. Unlike these however, they possess greater opportunities of adding to their “provident fund,” and laying up a competency for old age and for those they leave behind. May we not therefore appeal to their

sympathies in behalf of the orphan daughters of deceased Naval and Marine Officers? We cannot help doing so, and anticipating a response in accordance with our confidence.

But our readers may ask, How is relief afforded? The answer to this question is simply this: The income of this Society is derived partly from donations, and partly from annual subscriptions. The former of which (after payment of the small working expenses) is devoted to the increase of the permanent capital, by investment in the three per cent. consols. The dividends on that capital are appropriated to the educational wants of the orphans assisted, and from this source three girls are at present maintained in the Royal Naval Female School at Isleworth. The annual subscriptions are expended in furtherance of the other objects of the Society, viz., the maintenance of the aged, or the casual assistance of those who are in temporary difficulty.

Would that all or even a tithe of such cases could be relieved. Yet, alas! the more enquiry is pursued, the more is realized the fearful extent of the destitution which this Fund is *designed* to relieve. Certainly three hundred pounds a year is but a small sum to cope with the sad necessities which are daily revealed. We fully agree with the Rev. Edward Parry, the Rector of Acton, when he says, "that this Adelaide Fund, small and unpretending as it is, is doing a really good and useful work," and we cordially re-echo the hope he expressed, that at the end of another year, its annual income might be "increased to twice or even three times" its present amount. In this view it is, that we have ventured to urge on the benevolent friends in general of the Naval Service, the claims of the Queen Adelaide Naval Fund—believing as we do, that the good already effected by its means is sterling promise and guarantee of what it might accomplish were ample funds at the disposal of its Committee. It is a Society which is being worked *con amore*, in the true spirit of benevolence. It has no paid staff,—it has no office whatever,—its working expenses are limited to postage and stationery,—every case which comes before it is thoroughly investigated, and where possible visited by a Member of the Ladies' Committee;—in fact all is done that can be done to ensure a just appropriation of the sums entrusted to its care.

Many are the cases brought before the Committee of this Society that are most deserving of relief, but which it is found perfectly impossible to assist owing to the very limited means at its disposal; and they receive the all but stereotyped reply of regret that want of funds precludes a grant.

Instances such as those stated in our pages of August last could be multiplied were it necessary to do so. We think, however, that enough is now said to set forth in strong light the great claims which this Society really has to kind and considerate attention; and we shall be glad indeed to learn hereafter, that any of our readers have been induced by these remarks to contribute in aid of its funds. We have said that it has no office, and therefore they should be informed that any communication addressed to its Honorary Secretary, Frederic

J. Bowden, Esq., Admiralty, Somerset House, will be immediately most gratefully acknowledged.

In conclusion, we cannot do better than repeat what a contemporary (Colburn's United Service Magazine) has so well said in one of its recent articles respecting this little Fund. Referring to the distress which exists in the families of deceased officers it says, "Most heartily ought any Society to be welcomed which with right good will endeavours to alleviate their miseries and assist in their difficulties. The Queen Adelaide Naval Fund requires no more persuasion to assure Naval Officers or civilians of its use, and of the necessity of supporting it, than any of the other important and valuable societies connected with the two services. But it has been kept too much in the background; for having been successful to a limited extent hitherto in carrying out the objects for which it was founded, it only requires now to enlarge its field of work, and appeal boldly, not only to Naval Officers, but to the public for support. It has been successful; we hope, that in future, it will not only be successful but flourishing."

Our own exertions in aid of the Queen Adelaide Naval Fund date from a very early period in its life, for in the pages of this work it was that its first announcement appeared.* Here its very birth was recorded, and herein we trust yet to report from time to time that success which it so well deserves. We regard it as the offspring of well directed benevolence, as the humble instrument by which much good has already been effected, and we trust that much more will still be produced by it. In this light we most heartily desire to see it prosper, and we do look forward to its growing year by year in the estimation of a discerning and generous body of friends and supporters, both in and about the Naval society of this great country.

THE WRECK REGISTER AND CHART † FOR 1866.

WE have for many years past been in the habit of making a few remarks on the Wreck Register, prepared by the Board of Trade, and presented to Parliament; and we have done so principally with the view of directing attention to the loss of life from shipwreck on our coasts, and to the means employed in rescuing shipwrecked sailors.

We find, on examining this carefully-compiled register, that the number of wrecks and casualties from all causes on the coasts of the United Kingdom, and in the surrounding seas reported in 1866, was 1,860. The number reported in 1864 was 1,390, and in 1865 it was 1,656. The annual average number of casualties during the five years-ending 1866 was 1,611; and during the five years ending 1865,

* In our volume for 1850, the proposal first appeared of this Society in page 117, where a curious misprint occurs of 1853 for 1850.—ED. N. M.

† The Chart relating to this Article was inserted in the November Number.

1,538. The average number of shipwrecks on our coasts during the past ten years has been 1,466.

A recent statement by the Bishop of London shows that the population of the Metropolis increases at the rate of 40,000 a year, and that 10,000 houses have annually to be built to accommodate this increase. A similar progression is observable in our commercial and shipping interest. Seventy millions sterling often pass in one week through the bankers' clearing-house in London. Of course this enormous transfer of money representing commercial transactions necessarily indicates the countless number of ships from all parts of the world that frequent our numerous ports, in addition to the thousands of British vessels engaged in our Foreign and Home trade. Thus it is that the aggregate number of vessels entering inwards and clearing outwards from all our ports in 1866 was 403,598, the number in 1865 being 402,255. It is not surprising, therefore, that considering the enormous number of voyages thus performed, the number of shipwrecks every year on our coast is necessarily proportionately large; although of course, their number will depend very much on the violence of the gales of the year.

Thus, in October, 1859, there was the "Royal Charter" gale, and a loss of 343 ships. In January, February, and November, 1861, there were north-east and south-easterly gales, which added 460 to the number of that year's casualties. In January, October, and December, 1862, there were westerly gales, with upwards of 540 casualties; and in January, March, September, October, November, and December, 1863, there were westerly gales, with 930 casualties. In November, 1864, there were 264 casualties, with the wind chiefly in the south-south-east and south-west; but owing to the absence of any special gales of remarkable duration and violence in 1864, the total number of casualties in that year was 274 below the number in 1863. In 1865 the gales of January, February, and March, and October, November, and December, gave 766 casualties.

During the gales of 1866, that is, when the wind was blowing at force 9 and upwards, 855 disasters occurred. The gales of that year were usually from the following quarters, viz.—January, from east-north-east, south-west, and south-south-west; February, south-west, west-south-west, and south-south-west; March, south, and south-south-west; October had no serious gales; November, west-south-west, south-west, north-west, and west; and December, south-west, west-south-west, and south-south-west.

The number of ships lost or damaged in the 1860 casualties reported in 1866 is 2,289, representing a registered tonnage of 427,000 tons. The number of ships in 1866 is in excess of the number in 1865 by 277. The number of ships reported as lost or damaged is, as has been formerly stated, in excess of the number of casualties reported, because in cases of collision two or more ships are involved in one casualty. Of the 2,289 ships, 1,961 are known to have been ships belonging to Great Britain and its dependencies, with British certificates of registry, and 294 to have been foreign ships. Of the

remaining 34 ships the country and employment are unknown. Of the British ships, 1,409 were employed in the British coasting-trade, and 549 were employed in the (over sea) Foreign and Home trades; and of the foreign ships 15 were employed in the British coasting trade.

Of the total number of casualties reported in 1866, 422 were collisions, and 1,438 were casualties other than collisions. Of these 1,438 casualties other than collisions, 562 resulted in total losses, and 876 in partial damage more or less serious. The whole number of casualties other than collisions reported in 1865 was 1,302, which is far in excess of all other years, excepting 1863, when the number was 1,333; but in 1864 the number was 1,039, which was less than the number reported in any year since 1858.

The annual average for ten years, including 1866, is for total losses 463, and for partial losses 668; as against this the numbers for 1866 are, for total losses 562, and for partial losses 876.

Of the 562 total losses from causes other than collisions, we are unable to find in the Register the details of the precise cause of the same; but we observe that in 1865, 245 of the total losses happened when the wind was at force 9 (a strong gale) or upwards, and are chiefly included in the following returns as having been caused by stress of weather, 38 arose from defects in the ship, or in her equipment (and of the 38 no less than 30 appear to have foundered from unseaworthiness); 99 appear, from the reports made by the officers on the coasts, to have been caused by inattention, carelessness, or neglect, and the remainder from various other causes.

Of the 832 partial losses other than by collision, we can find no details of the causes of the same in the Register—but we notice that in 1865, 501 happened when the wind was at force 9 (a strong gale) or upwards, and are included as having been caused by stress of weather; 137 arose from carelessness, 48 from defects in the ship or her equipments, and the remainder from various causes.

Surely a large number of these casualties are preventible ones. It is true that within late years the standard of qualification for masters and mates of our merchant-vessels has been considerably raised. We think it might with advantage be more generally extended, as of these disasters a large proportion can be clearly traced to the ignorance as well as carelessness of man rather than to the elements over which he has no control. It should, however, be remembered that good seamen cannot save a bad craft; and we certainly think that something ought to be done with the wretched rotten colliers that crawl along the coast at the instance of mercenary men who care more for money than for human life. Many of these vessels are so decayed and unseaworthy that Shipping Insurance Associations will not even admit them on their books. There is no law in existence to prevent them putting to sea, and so they are navigated at such cost as the Wreck Chart which accompanies the Register too plainly indicates.

Again, let us remember that the total number of ships which, according to the facts reported to the Board of Trade, appear to have

foundered or to have been otherwise totally lost on the coasts of the British Isles, from unseaworthiness alone, in ten years, is 423; and the number of casualties caused through unseaworthy ships, unsound gear, etc., and resulting in partial damage, in the same time, is 586.

In 1866 there were 116 casualties to fishing-smacks alone. Excluding these 116, the number of vessels employed in the regular carrying-trade that have suffered from wreck or casualties during the year is 2,173. On this number being subdivided we find that about half of it is represented by the unseaworthy, overladen, or ill-found vessels of the collier class chiefly employed in the coasting trade.

Thus, then, amidst this dreadful havoc arising from rotten ships, and when the storm has shouted and raged in the bitter night, the wild despairing cry

“Of the strong swimmer in his agony”

has been borne on the fierce cold winds to straining ears in the life-boat, or at the rocket-station on the shore; many a cheek has been whitened, never to bloom again; many an eye has faded, never more to shine; and many a home has been made desolate for ever. Would it not be something, then, to save even one life, with all its hopes, and to keep the home of one poor woman and her children unclouded by the pangs of desolation? There is plenty of room here for those who wish to do good, for its own sake, through the National Life-boat Institution.

We find that the number of wrecks amongst colliers, laden and in ballast, was 854. In addition to colliers laden and in ballast, 141 vessels were laden with metallic ores, and 154 with stone. We all know, from long experience, that the colliers of the north-east coast have an established reputation as the rottenest and worst-found vessels that leave our ports. Year after year we learn that the casualties which might be expected have overtaken them; but still the mischief goes on, neither the provisions of the common law nor the special acts which relate to shipping being sufficient to control it. There is only one thing that will remedy the evil: if the men who navigate these wretched craft had received the education that brings intelligence and self-respect, and which, in some other countries, is the birthright of the poorest citizen, they would be less disposed to permit themselves to be sent to sea in what are no better than floating coffins.

In the eight years ending in 1866, casualties to comparatively new ships bear a very high proportion to the whole number of casualties. We find that 1,135 happened to nearly new ships, and 1,981 to ships from 3 to 7 years of age. Then there are casualties to 2,506 ships from 7 to 14 years old, and to 4,185 from 15 to 30 years old. Then follow 1,528 old ships from 30 to 50 years old. Having passed the service of half a century, we come to the very old ships, viz., 283 between 50 and 60 years old, 127 from 60 to 70, 61 from 70 to 80, 19 from 80 to 90, 8 from 90 to 100, and 4, 101 years and upwards. The age of 3,298 is unknown. The state of rottenness and want of repair of some of the coasting-ships above 20 years old, often calls for remark.

Even at the age of 25 to 30, it occasionally happens that a ship is so rotten as to fall to pieces immediately on touching the ground, without giving the crew the slightest chance of getting out their boats.

Of the 2,289 vessels lost or damaged in 1866, 86 were rigged as ships, 150 were steam-ships, 631 schooners, 426 brigs, 249 barques, 257 brigantines, and 167 smacks; the remainder were small vessels rigged in various ways. Of the 2,289 vessels referred to, 977 did not exceed 100 tons burden, 939 were from 100 to 300 tons, 274 were from 300 to 600 tons, and 99 only were above 600 tons burden.

As usual, the greatest number of casualties have occurred on the East coast. The numbers are as follow :—

East coast	..	..	..	..	..	953
South coast	..	..	..	..	..	274
West coast	..	..	..	..	..	412
North-west coast of Scotland	..	..	..	..	..	47
Irish coast	..	..	..	..	..	144
Isle of Man	..	..	..	..	..	18
Lundy Island	..	..	..	..	..	9
Scilly Isles	..	..	..	..	..	3

As regards the loss of life, the returns show that the number of lives lost from shipwreck on or near the coast of the United Kingdom, from all causes, in 1866, is 896.

When it is remembered that the lives thus lost are taken from amongst probably half a million of persons who have visited our ports during the last year alone, the number may appear to the casual observer a comparatively small one. We are, however, of opinion that it is a very large number, and when we bear in mind the inestimable value of one life we are convinced that no effort should be left untried which can in any way lessen the annual loss of life from shipwreck on our coasts. And here we may remark on the noble and great efforts that are being made to save life from shipwreck. During the last year and a half the National Life-boat Institution has, by its life-boats and other means, contributed to the saving of upwards of 1,600 lives, in addition to bringing to ports of safety some 40 vessels from threatened destruction. Again, this large number of 1,600 lives is entirely independent of the lives saved during the same period by the rocket-apparatus, which is worked by that valuable class of men the Coastguard, and which is provided for by the Board of Trade out of the Mercantile Marine Fund.

It is gratifying to observe how that Department continues to work cordially with the National Life-boat Institution in carrying out the great and important work which it has undertaken to promote, and which has proved so completely successful on our coasts; when we take into account the fact that the Society has now a noble fleet of 183 life-boats on our shores, requiring a large permanent annual income to maintain them in a state of thorough efficiency, no one can doubt that the Institution is deserving not only the continual co-operation of the Board of Trade, but of the sympathy and support of the British public at large.

On further analysing this Wreck Register we find that the lives lost in 1866 were in 199 ships; 147 of them were laden vessels, 40 were vessels in ballast, and in 12 cases it is not known whether the vessels were laden or light. 161 of these ships were entirely lost, and 38 sustained partial damage. Of the 896 lives lost, the very great number of 324 were in vessels that foundered, 127 lives were lost on board vessels in collision, 393 in vessels stranded or cast ashore, and 52 in vessels lost or damaged from other causes.

While the greatest number of casualties happened on the east coast of England, it is clearly shown that the greatest loss of life during the seven years ending 1866 occurred in the Irish Sea. The number of lives lost in that sea during the seven years is more than double the number lost on any other part of the coasts. During the winter months hardly a week passes in which the life-boats of the National Life-boat Institution stationed on the Irish coast are not called out to render assistance to ships in distress on the Blackwater and other dangerous sandbanks on that coast.

The most fatal winds during the year were as follows:—N., 37; N.N.E., 38; N.E., 97; E.N.E., 92; E., 69; E.S.E., 41; S.E., 90; S.S.E., 69; S., 129; S.S.W., 157; S.W., 206; W.S.W., 174; W., 105; W.N.W., 101; N.W., 115; and N.N.W., 45.

It is thus shown that westerly gales are far more fatal than easterly gales, the most fatal being from south-west. Seven hundred and thirty-three casualties happened when the wind was at force 6 or under, that is to say, when it did not exceed a strong breeze, in which the ship could carry single-reefs and top-gallant sails; 122 happened with the wind at forces 7 and 8, or a moderate to fresh gale, when a ship, if properly manned and navigated, can keep the sea with safety; and 954 happened with the wind at force 9 and upwards, that is to say, from a strong gale to a hurricane.

The large aggregate of 1,860 casualties in 1866 leading to the loss or damage of 2,289 vessels has, as a matter of course, thrown a vast amount of labour on the Wreck Department of the Board of Trade, which is most efficiently administered. Their officers at the outports, and the officers and men of the Coastguard service, have also discharged their duties in this important work in the most exemplary and zealous manner.

We should also state that the Statistical Committee of Lloyd's have issued a tabulated analysis of the wrecks and casualties reported in "Lloyd's List" for the year 1866. This is the first publication of the kind, and is intended to be repeated annually. It cannot fail to aid materially in concentrating public attention on Wreck disasters, and in leading to a thorough comprehension of their causes and their remedies.

The aggregate loss of life is enormous, and so is the aggregate destruction of property. The former is a species of woe inflicted on humanity; the latter is practically a tax upon commerce. While the art of saving life on the coast is understood (thanks to the progress of science and to the stout hearts of our coast population), the art of

preserving property is as yet but imperfectly known amongst us, and still more imperfectly practised.

On reviewing this dismal record, we are bound to take courage from the many gratifying facts it reveals in regard to saving life which, after all, is our principal object in commenting on this doleful Register. Noble work has been done, and is doing, for that purpose, which has not only elicited the admiration of the British public, but also that of many foreign nations. This fact was strikingly illustrated last July, by the international Jury of the Paris Universal Exhibition awarding to the National Life-boat Institution one out of their nineteen great gold medals in acknowledgment of the important services it had rendered to shipwrecked sailors of all nations,—thousands of whom it had rescued from a premature grave, and many homes from the desolation of widowhood and orphanage.

COLLISIONS BY STEAM VESSELS.

SIR,—Amongst the many recorded opinions on the subject of Collisions by Steam Vessels it is more or less admitted that they are owing to the difficulty experienced in knowing their relative positions on meeting, and it must be simply absurd, and a mere waste of words to argue otherwise, or there would be no apprehension of danger from causes, which produce the terrible disasters that are so frequently recorded by the press. Nevertheless no one appears bold enough to directly state that it is principally owing to the lights themselves as now placed, and not to those in charge of the vessels that the real cause of collision, and the too frequent loss of life is to be attributed. But as I have written on this subject before, and well weighed every argument that can be brought to bear on the present system of carrying side lights in steam vessels, and not having to bolster up a patent, or serve other private purposes for the sake of pecuniary advantage, I again take up the question solely on public grounds, as I consider it would be evading a duty I owe to my fellow-man, did I allow a subject of such vital importance to remain in abeyance.

Referring to Lloyd's Annual Summary of Wrecks and Casualties from January to December, 1866. I find under the head of Collisions that *three hundred and twenty ships, and one hundred and seventy-two steam vessels, were not damaged, or results unknown, that one thousand one hundred and twenty-five ships, and one hundred and forty-three steam vessels were damaged, and that ONE HUNDRED AND SIXTY-NINE SHIPS, AND TWENTY-NINE STEAM VESSELS, WERE SUNK FROM THIS ONE CAUSE.* And although the values of the hulls, machinery, and cargoes, are not stated, or the number of lives lost registered, with the absence of other details of lesser note, still the mere outline of such recorded facts is in itself appalling, and frightful to contemplate.

Compare this with the sacrifice of even one life on shore where a

supposed assassin has been the perpetrator or when lives are destroyed through more remote causes. In the one case the law does not rest satisfied until the offender has paid the penalty of his crime, and in the other case a more effectual check against further casualties is at once suggested and adopted. But collisions after collisions take place between vessels;—lives and property are sacrificed wholesale, with an almost daily increase, still no remedy is given for the safety of those, whose business is on the greatest highway of nations. If it be simply because it becomes an almost universal question as regards the alteration of lights for steam vessels, owing to the very general use they have obtained, then I say the greater necessity there is for an effectual remedy, if it can be found, and safely applied, and which I submit my plan will fully accomplish. That the first introduction of side lights was considered a boon by the many, I readily concede, but the proofs of their defectiveness have been so numerous, so various, and so convincing that the mind sickens at the thought of the sacrifice of life they have engendered.

In a former letter I endeavoured to some extent to point out the benefit of carrying lights on board of steam vessels *in a direct fore and aft line with the keel*, and to which letter I might have expected a reply. But it is not every practical man who can afford to give an independent written opinion on such a subject. Nevertheless they must silently admit that my plan is the only correct one to protect life and property at sea, and that *my arguments are unanswerable*; for without being considered egotistical, I think I can fairly lay claim to a very large share of practical maritime experience, and am fully competent to form an accurate judgment on a point of so much importance to the shipping interest of this country. And I emphatically state, that lives and property will be jeopardized so long as side lights are used on board steam vessels.

In support of this assertion, I feel assured, that no more conclusive illustration can be adduced than the collision of the screw steamers *Bhima* and *Nada* on the 11th September, 1866, and belonging to the same company, when meeting in the Red Sea from nearly opposite points, with plenty of sea-room, on a clear night without any sail set, and no other light or vessel near, whereby the *Bhima* with a valuable cargo of cotton, etc., and seventy-nine lives were lost, including the commander of the steamer, and some of the cabin passengers. And if this single, but dreadful case, was the only one on record, it is sufficient to justify their wholesale condemnation.

Further, I submit that life and property must always be imperilled until the relative positions of steam vessels when meeting, can be instantaneously ascertained, and clearly defined, and *this is an utter impossibility with side lights*. For where two steam vessels are approaching each other from opposite points of the compass and can alter their respective courses at least eight points without either being aware of the fact, such a state of things must unquestionably, severely put to the test, all the experience of their commanders to prevent a collision.

But much stress is always laid on the masthead light as being capable of materially assisting their judgment, far more so in my opinion than is warranted by facts. For it is so likely to be obstructed from such a variety of causes, by its position under the top, as the head sails when set must interfere with its being seen (*and this fact I do not think has ever been referred to at any court of enquiry on collisions, I certainly do not remember having seen it*), besides the possibility of its being rendered useless when the foresail is hauled up. These with many others all tending to destroy its efficiency, and when combined, create very grave doubts on the ability of this particular light at all on which so much is made to depend, whilst all that can be said in favour of side lights, is, that they show the starboard, or port sides of the vessel as the case may be. But as the side lights do not point out the relative courses of steamers, excepting to a very indefinite extent, they can only be looked upon as ordinary signals, and not positive indicators of real danger. Independent of this, they are so liable to be obscured from local causes, or totally extinguished in heavy weather, with the improbability of their being relit (under such circumstances).

These objections combined with the impossibility of seeing them from the bridge or quarterdeck by the officer of the watch, who is thus left in entire ignorance as to their effectiveness, proves them to be totally unsuited to the grand object for which they were intended. It is scarcely necessary for me to state that it would be next to impossible for a collision to take place such as is herein recorded, with lights, or danger signals fixed in the positions suggested by me, and that little evidence would be wanting to prove who was in error should a collision ever occur; as each vessel's lights *would instantaneously show the extent of the hull or limit of the danger*; the two lights forward forming an unerring guide (would when seen even slightly open) with the stern or after light exhibited, prevent the possibility of a collision unless brought about by the most gross dereliction of duty.

In conclusion, I have only to add (that independently of the head sails and square foresails, and which principally applies to the present system), there is no real foundation from which an objection to my plan can be raised, and that it combines all that is requisite to make it the most perfect safeguard against collisions by steam vessels, ever brought under public notice.

I am, Sir, yours faithfully,

N. HECKFORD,
Late Surveyor of Shipping,
Port of Calcutta.

Forest Gate, Essex,
7th November, 1867.

[In our April number (p. 180) will be found Captain Heckford's proposal, and his experience of about thirty years of a sea-life in command of many vessels entitles that proposal to consideration. He writes strongly and earnestly, and we trust that his plan will receive attention.—ED. N. M.]

THE MERCANTILE MARINE.

AMONG the subjects alluded to in the Speech from the Throne at the opening of Parliament, on the 19th of November, it was stated that "Measures will be submitted during the present Session for amending and consolidating the various Acts relating to the Mercantile Marine." There can be no doubt that the single measure of the supplying of Limejuice, which was passed into a Law at the end of the last Session, there was attached to it several others which were struck out, perhaps owing to the want of time for their due discussion. And the obligation to supply limejuice to the crews of an adulterated kind, instead of the wretched compound which was substituted for it by unprincipled owners, was made tolerably binding, and such that it will be difficult for those persons to contravene. But let us see what subjects remain still to be dealt with in the forthcoming amendment of "the various Acts relating to the Mercantile Marine."

One most important step affecting the treatment of our mercantile seamen, and we place it first, is to let them have the residue of their pay directly their services are dispensed with according to the law at present; so that there be nothing in the way to prevent them from at once joining their several families. There can be no good reason why their papers might not be sent to them by Post. But what is the case at present? That they are kept waiting for it for days together; loitering about, losing their time, and exposed to all kinds of temptation and expenses, and all this for no pay whatever. This should be remedied as it is in Her Majesty's Navy.

Then again Sailors' Homes are not yet what they should be; they are just large enough to provide for those seamen who actually belong to ships, a few merely who are living on shore, and even these, how far do they go towards supplying amusement and recreation for their inmates. They amount to nothing, and how are married seamen with families, how are all these provided for on shore. A good system of management is indeed required here. Our merchant seamen have yet to be considered in all their social relations, and those homes are required for married seamen as well as for the unmarried. It is hard enough to keep the young unmarried seamen on the *pavé* dangling about for his pay, but it is outrageous to keep the married man from his wife and family. And then again it would appear that sometimes Jack is lucky if he gets his wages without a piece of litigation to obtain them, such as the following reported from Liverpool.

"SEAMEN'S WAGES.—A case of considerable interest came before the Liverpool magistrates yesterday. The first officer of the ship *Plover*, Nathmoore by name, summoned the commander, Captain Doody, for payment of £19 3s. 6d., which sum he alleged to be due to him. The defendant shipped at Philadelphia last June for a voyage thence to Stettin, and thence to a final port of discharge either in the United States or British provinces. The *Plover*, however, put into Liverpool, and in that port Captain Doody, who it was alleged,

wished to get rid of the plaintiff, tendered him wages at the rate of 2s. 11½d. the dollar. The plaintiff refused to accept payment except at the rate of 4s. 2d. to the dollar, and with the consideration that the tendering of a wages account terminated the contract. After lengthy legal discussions, the magistrates awarded the plaintiff the amount claimed, the dollar to be valued at the rate of 4s. 2d., and the tendering of the wages to be considered as an end of the contract."

It is hard enough to have to wait for his wages but more so still to be brought to law for demanding them. But one of the most important subjects, and one of the first, which might well occupy the serious attention of a paternal government, is the forlorn condition of the laws on the subject of deep or overloading our merchant shipping. We have actually had proof, and that attended by a huge loss of life, of the utter neglect in which this subject has been allowed to remain. Is this deep loading system to be continued, or will the Legislature put a stop to it. Merchants have a right to do what they please with their own, but have they a right to its almost intentional loss which they know how to recover, have they a right to sacrifice seamen and passengers wholesale?

Was not the *London* allowed to go to sea in an overloaded condition, which no one could lawfully prevent that saw her sail from Plymouth. Was not the *Utopia** taken to sea from Liverpool by a captain who had taken her from another who would not sail her (knowing well the condition she was in), almost on purpose to be lost. Are not these glaring instances of the defects of our laws sufficient—both ships were lost, and in the case of the latter with no loss of life, but in that of the former some 150 persons perished. Are not these losses of life sufficient to secure the attention of the government to this dark subject, or must we still go on and see the same occurrences year after year till we are pointed at among the nations as the most reckless of the lives of seamen, because we find those of all nations sailing our ships, and because our merchants can recover their property from the Insurance Office—for as long as there are bad laws there are plenty of bad men who will profit by them.

Surely the safety of our own seamen is worthy the attention of the Legislature, notwithstanding our trading propensities have allowed two-thirds of our British crews to be substituted by foreigners. But our passenger ships—surely there is enough of English subjects in them to prevent them from being sent to sea as the *London* was. Bad enough she was in point of lading, but not too bad to be insured; or, is the game still to go on, and the shipowner to be left to speculate between his unworthy craft and the Insurance Office, by sending her to certain perdition at sea, and being enabled to produce another from her loss by that most considerate of all offices, the Insurance Office!

But we hope not; we trust that these things, among others, will be rectified in the measures which we are promised, shall be made to consolidate the laws relating to the Mercantile Marine before this

* See p. 380 of our July Number.

Session of Parliament shall have passed away. And we will conclude these remarks with the following extract from the *Hampshire Telegraph* on the part of our subject relating to seamen's wives and families.

The *Daily News* having, in an article on the Abyssinian expedition, asked, "What is to be done with the wives of our soldiers who are about to proceed on the expedition," and expressed the opinion—in which all will agree—"that it is a great and crying evil which calls aloud for redress, that we treat our soldiers' wives and children so perversely, so cruelly, and so wickedly as we do now."—Mr. Edward Palk, of Southampton, writes as follows, to the Editor:—"To show that your suggestion is capable of being carried out I may instance the Peninsular and Oriental Company of this town, who, instead of putting out much of their work to contract, engage the widows of those men who have died in their service in making many of those articles which are needed for their ships' furniture, and paying them 10s. a week for their labour. Through the liberality of one of the directors, Mr. Anderson, there is one of the best appointed schools established, at which the children of their men are educated in all that is necessary to make them useful members of society in after life; so that if a company can thus inaugurate a system so good and so useful, surely a great nation like this may well be expected to do somewhat to mitigate the anxieties of those who go forth to fight our battles in foreign climes, by caring for their wives and children that they leave behind.

"The Queen, in her speech delivered on the opening of the last parliament, adverted to the condition of the Mercantile Marine, and said that 'complaints had been made that the supply of seamen is deficient, and the provisions for their health and discipline on board ship are imperfect. Measures will be submitted to you with a view to increase the efficiency of this important service.' As a magistrate of this mercantile town I have had constantly brought before me cases of seamen who have been left sick in our colonies or in some hospital on some foreign station. On their recovery they are sent home by our consuls, and landed here without money or friends.

"According to the present state of our laws there is no mode of sending these poor fellows to their homes except by pauperising them, and this to a great portion of them is so repulsive that they will do anything rather than submit. But as there is no other mode they are eventually brought to this degradation. Feeling that this may be one of the many causes which hindered men from entering the mercantile navy, I addressed a letter to our mayor, who was presiding at a meeting at our Sailors' Home, and I sent a copy to those whom I supposed would have been engaged in drawing up the bill for the better providing for the men, and to render the service more acceptable. But nothing has been done in the matter, and we have lately had the same sad scenes taking place with the sick seamen landed here which formerly prevailed, so that if you do not press the subject of the soldiers' wives upon those in authority to carry it out I am afraid that there will be no attention paid to the earnest appeal you have made in their behalf."

If such things be allowed to continue we shall find our merchant seamen forsaking their ships in earnest. They will see clearly enough that they are not cared for: their property is nothing, and their lives looked on as nothing likewise. Our merchants may get their foreign seamen, as they can, to sail their ill-found, rotten, leaky craft, and they may go to the bottom. But the English seaman will be found elsewhere. He can find out as well as anyone else where he and his services are appreciated as they should be, he will be serving other masters, and his old ones, when the time comes, when they want him will not find him. Our only seamen will be our men-of-war's-men! Then let England keep up her trade as she can!

THE VIRGIN ISLANDS AND THEIR HURRICANE.

So the absurd report that the Island of Tortola had sunk to depths unknown has vanished before the light of truth. There was an amount of vagueness about it which, in our estimation, at once stamped it as "very like a whale."—It was first fairly gone; then it had only a temporary submergence of about eight hours, this was perhaps twisted from its eight thousand inhabitants; then the report had come from Havana *via* New York, enough in itself to set doubting at work; then the British consul at Cuba "has declared his belief that the news of the submersion of Tortola is much exaggerated;" and then it appears that all that is known of Tortola is that a great fire has occurred there, and that a family named "Sinclair Briart has been drowned." How like the story of the three black crows! Tortola was in the path of the hurricane, and so was Isle St. Thomas, and which has suffered most. The town of the latter is in ruins,—of the West Indian mail steamer *Rhone*, of one hundred and forty-five passengers twenty-five only are saved, five steamers, and sixty vessels are wrecked, including a French steamer; and the loss of life is estimated at five hundred persons.—At Tortola, a single family! So much for reports.

But under this rumour of the disappearance of the principal island of the Virgin Group the appearance of an American island has been realized,—a fact which will hereafter have no small influence in that part of the world. We have not lost Tortola by an earthquake or a hurricane, but the United States government has acquired, for a consideration, from the Danish, the possession of St. Thomas. This is conveyed in the following extract from the *Daily News*:

"The Danish islands of the Virgin Group have hitherto been of little political consequence in the hands of a distant and feeble government, but in those of a great maritime Power they must immediately assume importance. Lying at the very gate of the Caribbean Sea, the Power which holds them will bestride the highway from the Isthmus of Panama, and command its communications with Mexico, Central

America, and the whole West Indies. The policy of the government of the United States since the great civil war has led it to seek territorial aggrandisement for the purpose of strengthening its political position. It can hardly be doubted that the unexpected manifestation of the desire of Europeans for the dismemberment of the Union has done much to stimulate this decision. The purchase of Russian America had its precedent in that of Louisiana, but did little more than remove the flag of a European Power from the American continent. It has been understood on both sides of the Atlantic as denoting the intention of the government to take measures gradually, and as opportunities offered, to obtain complete control of North America, but its material value was very small. On the other hand, the islands just acquired give the United States an admirable naval position, besides enabling the enterprising citizens of the Republic to compete with Europeans for the valuable and increasing carrying trade between the island of St. Thomas and the islands and countries west of that purchase. The acquisition of an outlying territory not capable of physical incorporation with the Union, is a new thing in the history of the Republic, which has no colonial system, and the islands will probably form a new State. The negotiations for the purchase of the Bay of Samana, which have from time to time been mentioned as in progress, have probably been abandoned, as being rendered unnecessary by this transaction with Denmark, which, moreover renders less improbable the report that the United States government is seeking to obtain a naval station in the Pacific."

A naval station in the Pacific! We thought the Americans had one at San Francisco long ago; and still have it! Are they looking out for the Sandwich Islands, or Vancouver's? Which? The latter is directly between their States and the late purchase from the Russians. We find the following account of the St. Thomas affair in the *Daily News*, under the head of Denmark:

"Copenhagen, Nov. 3.—It is stated that a treaty has been signed by the Danish Minister for Foreign affairs and the American Minister at this court, for the sale of the Danish West Indian Islands to the United States for 14,000,000 rigsdalers, provided that such treaty be approved by the Rigsdag. The transfer of the islands to America will shortly take place, for which reason the president of the West Indian Islands, Herr Rothe, has received orders to return. It is not yet known whether a plebiscitum of the islands is also a condition of their transfer."

Perhaps after all the rumoured disappearance of Tortola may have originated in the above transaction to be approved by the "Rigsdag."

Let us now turn to the hurricane itself.

By the accounts of the hurricane, brought home by the *Douro*, it appears that the centre of it travelling in the usual W.S.W. direction, passed immediately over the Virgin Group. On the 29th of October, at eleven a.m., at St. Thomas, the wind is reported as blowing a fearful hurricane from N.N.W. $\frac{1}{2}$ W., the wind all the morning having been from the northward. By eleven a.m., the wind at N.N.W. $\frac{1}{2}$ W., the

barometer was down 27·95. At 12h. 15m. the wind had lulled, and at 12h. 30m. it was almost calm, and at 12h. 40m. it was almost dark. Shortly after a most fearful rush of wind from S.S.E. $\frac{1}{2}$ E. set in, and it continued to blow (how, not said), but with gradually diminishing force till four p.m. During this interval a great deal of mischief appears to have been done. But it thus appears to have been travelling on an E.N.E. and W.S.W. line, the focus passing over Tortola and the harbour of St. Thomas with the usual lull. The mention of two hurricanes is evidently by an inexperienced person, who seems to be quite uninformed on the principle of the rotatory gales. In point of duration it is a mere transient gale (a day and a half or two days being not unusual with these hurricanes, while this has not lasted half-a-day). However the violence of it seems to have made up for its brevity.

The *Douro*, which was to arrive at St. Thomas about the 29th, the day of the hurricane, is stated to have been two hundred and fifty miles from the island when it took place, and arrived out at St. Thomas just as the hurricane had ceased. The first notice she had of it was in seeing the funnel and mast of the *Rhone*. The Royal Mail Company's steamship *Wye* was totally wrecked on Buck Island while attempting to put out to sea. Out of seventy men only thirteen of her crew were saved—among them were five whites, including the captain, the chief officer, and the boiler maker—all the rest were drowned. The captain was on board the *Tyne* at the time.

The *Rhone* was wrecked off Salt Island, twenty-five miles from St. Thomas, while endeavouring also to get out to sea. She was driven on to a reef and broke up. The captain and all the officers were lost, and only one passenger and twenty-three of the crew were saved. The passenger saved from the *Rhone* was an Italian gentleman. He was six hours in the water. His name is not known.

When the gale commenced, the *Rhone* was lying at Peter Island, with the *Conway* alongside, transferring cargo. Circular blasts of wind struck the vessels with such force that the *Conway* was immediately blown ashore, and lost her funnel, etc. The chief steward, her cargo, and her specie were saved.

The *Conway* was blown ashore at Tortola, where she lost her funnels and masts, but was otherwise uninjured, and may be got off. After the *Conway* was on shore, it continued to blow, but with gradually diminished force, till four p.m. The Italian gentleman saved was from Pennsylvania. Mr. Hodgson, chief officer of the *Wye*, who was one of the saved, has had an arm broken in two places. The *Derwent* was blown ashore from her moorings in St. Thomas harbour, and much damaged. The *Tyne* and *Solent* rode out the gale at Paper (Query Water) Island, at anchor with their engines working a-head. The *Tyne* lost her foremast, and the *Solent* all three masts. None of the crews of the *Conway*, *Derwent*, *Tyne*, and *Solent* perished.

During the hurricane the *Vasco Nunez de Balboa*, a Spanish war vessel, was dismasted in St. Thomas harbour and otherwise damaged, but was able to steam about the harbour, saving as many lives from the other damaged vessels as possible.

The loss of the *Rhone* is thus described—The *Rhone* tried to ride out the storm at anchor, but her cable broke. She then tried to proceed to sea under full steam. In going out a terrible blast of wind struck her and carried her on to Salt Island, her stern first taking the rocks. Shortly after an explosion occurred in her engine-room, which it is supposed blew out her bottom. (This seems to have been the principal cause of her great loss itself.) She directly parted amidships, doubled up, and went down in deep water so suddenly that all below went down with her. The last seen of Mr. Morrish, the purser, was at the wheel with Captain Woolley, endeavouring to bring the ship up to wind. There were about twenty-two passengers on board the *Rhone*; two only of this number were saved.

It is estimated that upwards of six hundred persons were drowned at St. Thomas during the hurricane, which commenced at eleven in the morning and calmed by three in the afternoon. Within forty-eight hours three hundred bodies were washed ashore, recovered and buried. They presented a fearful spectacle, from the fact that they had been partially devoured by sharks and other fish. The smell in the harbour was most offensive. The bodies of Dr. White and Chief Officer Topper were picked up and buried, and Mr. Cameron, the company's agent, offered a large reward for the body of Captain Woolley, which had not been recovered. It was thought that on board the *Rhone* more were killed than drowned through the explosion and breaking up of the ship. Captain Taylor, of the *Wye*, was on shore on leave of absence at the time of the hurricane. The damage to property ashore was great, and the loss of life is estimated at from one hundred and fifty to two hundred persons.

It was the second part of the hurricane that drove the *Rhone* on the reef, which she took about midships.

The first striking shivered almost everything fore and aft. The second striking broke her in two, and everybody was thrown among the *débris*. The persons saved were washed ashore on masts, hencoops, etc. The *Rhone's* mails that had not been put on board are brought by the *Douro*.

The leading features of this calamity appear to be confined to the great loss of shipping, and the destruction of houses in the islands of St. Thomas and Tortola. The loss of life has mainly occurred among the crews and passengers of the vessels. On shore many people have been killed by the falling of the houses. At St. Thomas and Tortola considerable damage was done along the shores of the harbours by the high seas that prevailed during the hurricane, but the loss of life through the waves among the people on shore was very small. On the sailing of the *Douro* the islands had scarcely begun to recover from the disasters; so much damage had been done in connection with all the ordinary channels of business, that its usual course was effectually stopped. The merchants' offices, official offices, and printing offices, were so wrecked that anything like an attempt at a clear description of the loss sustained in life and property, and damage done, had as yet been but very roughly carried out. The loss of life at St. Thomas, in

the harbour and on shore, and among the shipping at sea, on the day of the hurricane, near the island, was considered not to exceed five hundred, while that at Tortola was believed not to have exceeded one hundred. Of about eighty vessels known to have suffered more or less from the hurricane in the harbour, every effort had been made to ascertain their names, and the list brought by the *Douro* was considered to be generally correct, and to embrace all that could possibly be discovered up to the day of her sailing. Some of the vessels that were believed to have foundered there was but slight hopes of identifying, either from their not having been reported at the islands, or being known when seen off. Amid the confusion of wrecks, when a panic prevailed also on shore, the assistance to the wrecked vessels unfortunately could be but very limited, and the loss of life was consequently very heavy among their crews and passengers. On the subsiding of the gale everything was done that could be carried out with the means left to ameliorate the disasters. The Royal Mail Company's wharves, coal sheds, etc., suffered badly, but the *Douro* was able to coal.

After the hurricane had lasted some time there was a lull for about half an hour. It then recommenced with redoubled fury, and lasted altogether three hours. The *Rhone* parted amidships, and the waves ripped the gigantic steamer up just as if she were made of brown paper. A gentleman who has come home in the *Douro*, saw two hundred and ninety-two persons buried at one time at St. Thomas, and soon afterwards there were fifty more ready for interment. One small bay he saw crammed with dead bodies which had been washed ashore. At Buck Island, where the *Wye* was lost, the shore was strewn with the remains of ships broken into such small pieces that all identity was destroyed. Captain Taylor, of the *Wye*, was providentially saved through not being on board his ship at the time of the hurricane. He is left behind at St. Thomas. TORTOLA HAS NOT BEEN SUBMERGED, but everything has been destroyed on the island by the fury of the hurricane, and the people were likely to suffer from starvation. Her Majesty's ship *Doris* has accordingly conveyed provisions to the island. The *Derwent* is not wrecked, but seriously damaged. The *Tamar*, which will bring the next West India mail, will be late home. All the Royal Mail Company's property at St. Thomas is destroyed. The damage they will sustain will amount to half a million sterling. No such tornado has ever been known. *Lighthouses are blown down*, the damage to property at St. Thomas is immense.

The *Wye* was blown right round by the hurricane, and went down. The *Douro* was two hundred and fifty miles from St. Thomas during the hurricanes. She felt the swell occasioned by them, and the horizon was very dark. The *Vasco Nunez de Balboa*, a Spanish war steamer, had fifteen of her crew blown off her decks. During the time the *Douro* was at St. Thomas daily communication was kept up with Tortola. In consequence of the inconvenience of having so many bodies to inter at St. Thomas, some of them had been burned.

Since the foregoing extracts were made further and fuller accounts of this very disastrous hurricane have been received. Our limits preclude the possibility of going into the sad particulars of all the loss of life that it has occasioned, authenticated lists of which will be made known hereafter, for they have spread distress and want far and near, but especially about Southampton. To the relief of this we have no doubt our readers will contribute as we do ourselves. But we have selected some of the accounts, especially the following letter of Captain Vesey, of Her Majesty's ship *Doris*, and the extracts of a letter from an officer of the *Douro* who seems to have known St. Thomas well, and contrasts its appearance on his arrival after the hurricane with what he remembered it to have been previously. It is a remarkable fact, but one that is peculiar to the hurricane, that notwithstanding St. Thomas suffered so severely, the Island of Santa Cruz not more than twenty-five miles to the southward knew nothing about it!

St. Thomas, Nov. 5th.

I arrived at this place at two p.m. on the 3rd instant, and regret to have to confirm nearly all the statements already made in this report, respecting the damage done.

Seventy-five vessels have been wrecked or seriously damaged; property to the amount of about a million and a half or two millions has been lost, and about five hundred lives have been lost, including those wrecked in the mail steamers.

All the islands appeared as if fire had passed over them—the town of St. Thomas looks exactly as if an explosion had taken place; roofs, doors and windows having been blown away, and the streets are filled with tiles, trees, and rubbish. The harbour is full of wrecks, and the dock, which some time ago went down suddenly, has had nine vessels against it, and several are sunk at one end of it at the present moment. The West India and Pacific Mail Company's steamer *Columbian* is one of them, with £400,000 of cargo on board. The great ship *British Empire* (formerly the *Demerara* steamer) is one, and outside her are, I believe, several other vessels. The Royal Mail steamer *Derwent* is in eight feet of water, with an American ship alongside her. Inside them are the *Robert Todd* steamer (*La Guayra* packet) and a Spanish steamer, the latter quite destroyed; another Spanish steamer is near wrecked I think, and a third, a man-of-war, lost her masts and went to sea. The French steamer *Caravel* has lost masts and funnel; all tug boats and the dredging machines are on shore, and vessels' masts are sticking out of the water in all directions. The *Douro*, which brought the mails out, is coaling to take them home; 1,600 dollars were offered for a gang of a hundred men for one day's work, but not one could be obtained, as the blacks have struck work.

The *Solent* takes the mails west: she was off Flanagan Island, and had her foremast blown away. I transmit herewith a copy of her log, which I have obtained. The Royal Mail steamer *Tyne* was there also, and cut away her foremast. She is running the windward mails; I have offered the service of the *Niobe*, but if the commodore at

Jamaica can send up the next home-bound mail, she will not be required.

I called upon the governor of St. Thomas on the 3rd instant, when he expressed a wish for a diving apparatus, as all the dresses and hoses have been lost. I granted to her Majesty's acting consul the use of the one at Antigua yard, for public service, provided the West India and Pacific Mail Company engaged to replace it in two months, which they have promised. There is sufficient hose to work two dresses, and it is an object to get the bodies out of the wrecks.

The United States steamer *Monongabela* was at Santa Cruz (twenty-five miles off) during the hurricane, and did not feel its effect:—Commodore Bissell has rendered every assistance in his power to British interests, and towed a dismasted English vessel in here.

I have seen one of the survivors from the *Rhone*—John Metcalf, able seaman—Royal Naval Reserve, who was an invalid from a merchant vessel at Trinidad. From his and other accounts, I learn that the *Rhone* tried to weigh, that the shackle of the cable caught in the hawse pipe and parted; that she then tried to steam to sea; that steaming full power head to wind, she went astern on to the rocks at Salt Island, heeled over, and then broke in two, the passengers (one hundred and thirty), who were lashed on deck, being swallowed up in the chasm. Amongst them I regret to say were Dr. Henry Arnot, late surgeon of this ship; Isaac German, late able-bodied and leading seaman; Charles Peek, able-bodied; and Benjamin Hough, private Royal Marines, eighty-eighth company of Woolwich division, who were invalided from us, and left Barbados on the 26th October.

The survivor (Metcalf) swam to the foremast, and was taken off the fore topsail yard next day at about eight a.m. The *Rhone* went on shore about two p.m. I think about one hundred and thirty were lost in her (all passengers); there was one Italian saved, and a Mr. and Mrs. Gibson; and Mr. and Mrs. King, of Barbados, are included amongst the lost—the body of the latter is supposed to have been picked up. All the officers of the *Rhone* were lost, and only about twenty-five people (crew) saved, including the boatswain.

The *Wye* left St. Thomas in charge of her chief officer, the captain being on shore; she steamed about fifteen miles to the westward, when her compasses became useless from the amount of electricity in the atmosphere. The darkness was so intense, although it was mid-day, that at last she ran on Buck Island, to the eastward, and in fourteen minutes had disappeared. About sixty-five were drowned, and about eleven saved, including the chief officer who had his arm badly broken. I have since heard that nearly fifty bodies are in a small bay on Buck Island, which cannot be approached for sanitary reasons.

I have written this letter in a very hurried and disjointed manner, as the mail steamer *Douro* sails this evening. I have much to do, and am obliged to get information as I can.

I start to-morrow (Nov. 6) with a piece of temporary funnel for the *Conway* at Tortola, and I shall carry a quantity of planks, etc., which

I have bought at the public expense, for the purpose of housing the inhabitants of Tortola and the Virgin Islands, who are British subjects.

I feel confident that I shall be borne out in incurring any fair expenses, but nothing can ever be repaired by them. The consul here has also sent up provisions, and if proper care has been taken to send assistance to the outlying islands as I pointed out, and the boats picked up on the reefs have been used, no case of starvation need occur. I shall visit every place myself where I can, and punish wreckers and plunderers without ceremony.

With reference to the hurricane, I can only say now that it occurred after the season was supposed to be over, as the first full moon in October was on the 13th. It was the fourth hurricane or indication of one which we have had during this peculiar season.

After the storm experienced by the *Doris*, at St. Kitts, on the 28th July, reported to their lordships through the hydrographer, I informed the Commander-in-Chief that I considered we could not be sufficiently careful as the hurricane appeared to be increasing in intensity. The season has been wet, and very sickly. Seven inches of rain fell during the night of the 7th October at Barbados, and on another night five inches fell.

On the 29th October, the *Douro*, outward bound, experienced a heavy swell, and a southerly set. We, also at sea, off Guadaloupe, had a heavy northerly swell, but nothing more.

When the hurricane passed, the barometer gave no warning, though the weather did, and all thought it was to be a norther.

The barometer fell and rose during the breeze, and the vortex passed directly over these places. It seemed to be travelling slowly to the westward; the thunder was terrific; shocks of earthquakes were felt, and the electricity was so intense that compasses were useless; darkness set in, and vegetation was destroyed. The sea water was caught up—the particles, here called “hail,” have injured people, but this perhaps may be thought improbable. It will be observed that vessels’ masts were literally blown out of them, and that a fourteen-knot steamer was blown astern and wrecked, when steaming full speed ahead.

I need not cite further instances of the power of the gale; all the vessels that tried to go to sea were lost, with nearly all hands; and an American ship (blown out of this harbour) has foundered. The whole of this ruin and devastation occurred in the space of two hours.

I earnestly submit for their lordships’ consideration whether the system lately adopted of keeping her Majesty’s ships at sea during the hurricane season is a good one, and can only say that my own opinion, after fourteen years’ experience in the West Indies, is that no man-of-war could have weathered such a blow if caught at sea, and that these islands, for the next two years, will be liable to similar visitations. As far as I can learn, this hurricane has caught Anguilla, Virgin Islands, Tortola, St. Thomas, Culebra, and the north-west end of Porto Rico. It was going direct for Turk’s Island and the Bahamas.

I transmit herewith a list of ships lost or damaged, as near as can be ascertained at present. The lighthouse at the battery has been blown down, as reported by the consul (copy of letter enclosed). I have already sent a copy of this report to the hydrographer, and to the commodore at Jamaica.

I have just heard a rumour that Beigne or Crab Island has been struck, and that part of the hurricane passed south of Porto Rico. I believe that yellow fever is still very bad here, but I cannot obtain any accurate information at present. Those men left on board, who had fever some time since, are suffering much from debility, but I cannot invalid any by this mail.

Commanders Parry and Smythet have gone to Jamaica by the *Solent* this morning. I wish to call attention to the enclosed list of vessels lost, etc., which is as correct as possible.—I have, etc.

C. VESEY, Captain and Senior officer, Barbados Division,
North America and West Indies.

The following extracts are taken from a letter from an officer of the *Douro*, dated St. Thomas, November 5th: "Very peaceful and very beautiful looked the town of St. Thomas when first sighted at about 4 o'clock in the afternoon of the 30th of October from the deck of the *Douro*, the steamer from Southampton on the 17th of that month. Delightful had been the run during the morning, as with all sails up to royals set we had steamed by the low rocky beach of Sombrero, an island without a tree, and inhabited only by a few miners—then bold bluffs and the reefs of Virgin Gorda, and having coasted the chain of islands which includes St. John's, Tortola, and Peter Island, at last we let go our anchor in the outer roads of St. Thomas, at a distance of about two miles from the town. First impressions underwent a sad change when we got sufficiently near to see the harbour strewn with wrecks, the lighthouse gone, and many houses roofless.

A confused mass, near the middle of the harbour, built up of crushed hulls, broken spars, and loose cordage, was formed by the ship *British Empire*, lately out from England with 3,800 tons of coal for the use of the steamers of the Royal Mail Company; alongside her was the steamer *Colombian*, belonging to the West Indian and Pacific Steam Navigation Company, in from Liverpool but half an hour before the awful crash came, with a cargo valued at more than £200,000, and now shewing nothing but funnel, masts, and rigging above water; right underneath these two were a French bark and a brig. Nearer to the shore lay the Spanish war steamer *Nunez de Velasco*, and a French mail steamer. These two alone out of the many vessels lying in the harbour lived through the hurricane, having cut away their masts, and trusted for safety to the strength of their cables, chains, and anchors.

Against the floating dock was the American brigantine *Nellie Gay*—a pitiable object, every mast and spar either carried overboard or lying on her deck. The floating dock itself, just approaching completion, would in a few weeks have been available for docking and repairing, but in common with everything else belonging to this ill-

fated town, it has met with accidents, the *Nellie Gay* and the *Colombian* having been driven against it. Dotted over the harbour were masts showing a few feet above water, marking the spots where the various schooners and other craft had gone down; and on the beach all round lay other vessels, hurled by the force of wind and wave far upon the land, some positively in the streets of the town. A further survey showed more accidents and equally terrible casualties. Round the island, to the left of the town, looking from the sea, lay in one cluster five very large steamers, including the *Derwent*, belonging to the Royal Mail Company, so crushed together that to distinguish masts and funnels proper to each was impossible. At a distance of a quarter of a mile lay one funnel thrown across and resting on the deck of a large ship, some feet of whose stern had been cut away sharp and square, showing her decks in section. But cases like these appeared everywhere.

No sooner was the *Douro* moored than anxious inquiries rose on every side as to the fate of the *Rhone*; also of the *Conway*, the *Wye*, the *Tyne*, and the *Solent*, steamers of the Royal Mail Company. The *Rhone*, appointed to carry the homeward mail of the 30th, had, it appeared, gone to Peter Island, about 20 miles away, in consequence of fever having made its appearance at St. Thomas, leaving the branch steamers to join her there and effect the transfer of passengers, mails, and cargo. Strong fears for her safety were felt, and the *Conway* was believed to have run on shore at Tortola. About eight o'clock the same evening news came. The *Tyne* sadly crippled, her foremast and its rigging lying on its deck, steamed into the harbour; the *Rhone* lost, and with her one hundred and fifty poor souls hurried into eternity; the *Wye* lying in splinters on Buck Island, out of her ship's company of nearly sixty but six survivors. Such were the horrors of which the *Tyne* brought word. Eager were the questions asked of the seamen rescued from the *Rhone* who sadly paced the deck, walking like men in a dream, so awful had been the shock of what they had gone through. Their fate was short. During the lull which occurred at all places over which the hurricane passed, at about one o'clock, the *Rhone* put out, she had safely passed through a rocky channel leading to the open sea, but one more point to round and she was safe, when in a moment from the S.E.—whereas previously it had blown from the N.W.—the cyclone came down upon her with even more dreadful energy than ever. Twice she struck, and boats and spars and sheep-pens flew across the deck, then she parted amidships, the stern portion swung round, and, the waves rushing in between her decks, ripped them up as though with an explosion of gunpowder.

At the time the hurricane commenced the *Conway* lay alongside the *Rhone*, engaged in transferring passengers. Seven or eight had passed over, and one was heard to say to his wife, 'Thank God, we are safe here.' The large ship now lies a wreck upon the shore. The smaller one, there is reason to hope, will to-morrow drop anchor in St. Thomas harbour, not a life having been lost in her! Of the scenes of desolation and destruction which met the eye on landing it would be impossible to give more than a very faint idea. The wharves which used to line

the shore were gone, and every street blocked up with broken rafters, zinc roofs, bricks, boughs of cocoanut palms, household furniture, and *débris* of every conceivable kind. Houses even were to be seen standing erect which had been lifted from their foundations many yards distant and dropped into some of the lanes running seaward out of the main street.

In one lane were to be seen, among tons of broken wood, an anchor, several cart wheels, a pianoforte, and several slabs of marble, which, when the storm was at its height, had been seen whirling round in the air like sheets of paper. A bombarded town could never have presented a worse picture of ruin and desolation. Plantations of whitened sticks covering the hills alone indicated that trees had at one time grown there, and of the palms which had graced Cocoanut-square and the approach to the Lutheran Church but few torn fronds still clung to their native stems. At various points along the beach crowds of people were collected, and from each was carried away with dreadful regularity strings of rough coffins containing the dead which the sea gave up. By four o'clock on the 30th two hundred and ninety-two bodies had been washed ashore and buried, and the systematic way in which the people worked under the guidance of the police was a sad proof of the practice they had had by that time at this mournful occupation.

At St. Thomas, the hurricane appears to have commenced at ten minutes past twelve, and to have lasted with one break—at one o'clock, lasting thirteen minutes—till half-past three. The barometric indications of its coming were feeble until it had absolutely broken; then the downward progress of the mercury could be distinctly seen. One or more shocks of earthquake were experienced, and in a moment the awful conflict had begun. So dense was the body of the rain and spray which rushed through the streets, that objects twenty yards away were rendered invisible by it, and persons seeking their homes and families held on to lamp-posts, door-handles, or whatever promised temporary security, uncertain which way to turn in the darkness. At one o'clock the storm blowing from the north-west ceased, and the thirteen minutes' lull took place. Again it broke forth with more dreadful energy from the opposite quarter, and tore away many vessels which had till then ridden securely. The harbour master and an officer of the *Nunez de Velasco* vied with each other in their heroic efforts to save life. Sad to say, the former perished; the latter only escaped in an almost miraculous manner, for his boat being capsized he himself was thrown upon the beach, and there lay till the day following before being found."

Mr. Holdeman, a warrant officer, living in Melbourne-street, Southampton, has given the following personal narrative:—We were in a N.W. gale, blowing fresh, when we parted our cable with sixty fathoms in the hawse, and steamed away to sea. After steaming for perhaps an hour it became clear, and in fifteen minutes we found ourselves close to the shore. The captain then gave orders to turn *astern*, which we did immediately, and cleared the point. We proceeded steaming through the gut, and met a south-cast wind

blowing fearfully heavy. It then became very thick indeed, so that we could not see anything scarcely—not a ship's length. We had been steaming about two hours, when I reported to the captain that there was land very close indeed, nearly abreast of us, midships on the port hand. With that the ship went ashore immediately. The captain said to me, "Good Lord, is it ever possible?" and I replied, "Yes, sir, the ship's ashore." The captain never spoke to me again, and shortly after a sea struck him in the side and washed him over to the top of a skylight. The next sea took him between the ship's side and the rocks, and I saw no more of him. A sea struck me, and finding I was getting exhausted, and could hold on no longer I loosed my hold.

The chief officer, Mr. Darby Topper, was killed by a spar, about an hour before this, and I saw no more of anyone, for I was washed overboard myself. I and five other men were saved by clinging to a hammock bin, which contained seamen's hammocks and floated. About eleven o'clock at night, as near as I can suppose from the darkness, I was washed ashore; all my clothes were washed clean off me, and I had nothing but a pair of drawers and a shirt on when I landed on Beef Island. We remained there all night. I went and saw the governor next morning, and he provided me with a boat. We got assistance from Tortola by a man named Smith, who took us on board the *Tyne*, in Tortola Bay. From there we went to St. Thomas, and got on board the *Douro*. It may be of interest to know that a boy named Bailey floated ashore on a life-buoy, which he has kept. He was on a coral reef there all the night, and the next morning joined us on the island where we were, and he has brought home the buoy with him. Four boys were saved: one the engineer's, one the chief officer's, and the others ship's boys. I never saw one person drowned.

Henry Buckell, a fireman of the *Rhone*, living in Crown-terrace, Bevois Valley, said, "We struck on the rocks at Salt Island. I should think we were there for seven or eight minutes, when the chief engineer called us up from below, when the ship broke in halves, and I went up the skylight. I saw the sea break right through her side, and when I got on deck I saw the sea come right over her. I saw many persons rushing to the fore companion, and up through the skylight on to the spar deck, when I was washed overboard. I can give no further account until I found myself on Beef Island, where I got about half-past ten at night, I should think, and we were brought off from there to the *Tyne*. We had taken a few passengers out of the *Conway*, I believe, but I cannot speak positively. Dr. White joined the ship the day before, and his body we picked up and buried at Tortola, and all that could be found of Captain Wcolley was merely the sleeves of his coat.

Rees, a fireman of the *Rhone*, residing at Freemantle, said, I went down when we commenced to light up the fires about half-past eight, when we were lying at Peter Island. Three fires were ordered in each boiler, and we had not been down half-an-hour when we were ordered

to light up another fire in each, making all the fires now lighted, and reaching fifteen pounds of steam. The gale freshened, and we were told to get up as much steam as we could. We got up twenty pounds—all that we could possibly give her, and she was going at full speed at the time she went down. What I fancy is, that when she struck first she “kind of scurged” a rock on the port side; the second time it seemed to lift her, and she went down “bump,” and bumped three or four times. Of course it drove her sides in, and I believe the rocks went up at the bottom into her boilers. Seeing the water coming into the stoke-hole, I got up through the engine room-ladder; all that I saw was a boiler maker in the engine-room, and he went up the ladder before me. When I got on the top, the steam-pipe burst, and everything being covered with steam, I lost sight of all that was going on. As I knew the way out as well in the dark as in the light, I got hold of the handrail, and crawled under the steam out of the door. When I got out, I found the forward companion covered with people. The main deck people were clinging to everything they saw. I rushed right through them on to the spar deck, where I was washed off, and overboard, and the bows of the vessel came round to me. I clung to the foretopsail yard, where I stopped from one o'clock in the day until half-past eight next morning, when I was took off by a little punt, which picked up four besides me. It could take only two at a time. I was washed naked. I saw the chief engineer, Mr. Hooper, clinging to a skylight, and was washed by him. He looked at me, and I looked at him, just as men will do at such times. My opinion is that more were killed by the knocking about of the wreck than being drowned. The men in the stoke-hole had no chance to come up. Two came up but they were fearfully scalded; their names were Lane and Arthur Cull. The things in the gale were flying about like birds. I saw one lady clinging to her husband by the after companion, and I believe she was picked up next morning by the doctor of the *Solent*. The gale seemed to come on gradually, and continued getting worse. I did not apprehend danger before it happened, because I've often been out in roughish weather. I hadn't been on deck in the wind, but below, this did not appear worse than I've been out in before. I am a good swimmer, but the next morning the sharks were lying around us like little fish, and therefore 'twas useless to think of swimming in order to get relieved and picked up.

NEW BOOKS.

THE SAILOR'S WORD-BOOK: *an Alphabetical Dictionary of Nautical Terms, etc.* By the late Admiral W. H. Smyth, K.S.F., D.C.L., etc.

That change is the order of the day, every day confirms. The world itself is never still, always moving, and why should we mortals be exempt from the law? What an emblem of change is presented by

the navy of England ! By Byron himself when he spoke of the ship as :
 "Walking the waters like a thing of life."

little thought that she would ever become what she is ; from perfection of symmetry in wood to a shapeless mass of iron ! Our veteran naval artist, Schetky, has snatched from the rude and swift current of time, the pictures of those models that have been condemned to the shades of oblivion, and he has preserved what he has well called the "Veterans of the sea," for our historic pictures ;—models never again to be realized, and here before us is the "Word-Book" of the language employed by those who manned them. Will this too pass away ? Doubtless it will ; step by step its vocabulary will gradually disappear from the surface of life, and leave but a few shreds of "words" behind.

However, for the day here is an account of things as they are, as full and complete as it should be turned out of the hands of even three veteran seamen ! We little expected to have met with the name of our old respected and esteemed chief mentioned in its pages. Yet he too had in view the formation of a nautical "word-book :"—the author of this has himself passed away, and the task of giving it to the world has been necessarily performed by another hand. In our former remarks, when we allowed a nautical expression to run away with all our space, we omitted to mention that the friendly assistance of Vice-Admiral Sir Edward Belcher has completed the labours of his late brother officer, Admiral William Henry Smyth. As the completest work of its kind, it has the first claims to the attention of the class for whom it is intended ;—inasmuch as it contains expressions employed by those who follow the profession of the sea, not only in regard to all the paraphernalia of the ship, but also as relating to astronomical and other technical matters with which the sailor has much to do. Is a term even obsolete, or out of use, though familiar with the veteran seaman of former days,—here it is, laid up in ordinary and carefully explained.

Admiral Smyth was a seaman of the old school, and being besides a scientific one as well, he was well aware of the importance of preserving these idioms of every kind ; and he therefore made room for them ; although he did not descend to the slang of the galley, as seems to have been required by a shore-going print, that has sadly floundered in muddy shoal-water, owing to its sublime ignorance of nautical parlance ; learned as it may be among its literary composers ! But, perhaps, by this time it is enlightened, and knows something more of the "marine" whose history it complains of the Admiral for omitting ! But the Admiral knew well how to grace his pages with useful and desirable information, without disgracing them by slang ; and so we heartily commend his book to our readers.

TIDE TABLES. We congratulate those whom these concern, and they are "legion," on the appearance of this Admiralty work, the annual labour of Staff-Commander J. Burdwood, R.N. They are published by Potter, 31, Poultry.

Nautical Notices.

PARTICULARS OF LIGHTS RECENTLY ESTABLISHED. (Continued from page 636.)

Name.	Place.	Position.	F. or Fl.	Ht. in Ft.	Dist seen Mls	Remarks, Bearings are by Compass.
71. Homlung	Norway on the South and West Coasts	... ..	F.	24	8	Visible from W.N.W. round by South to E. by S. $\frac{1}{2}$ S. Lighted all the year round.
Stabben		... ..	F.	54	12	Bearing W. $\frac{1}{2}$ N. the light will shew <i>red</i> . Lighted from the 1st August, to 15th May.
Kind Island		On S.E. end of Island	F.	33	10	Visible from S. by W. round by West to N. by E. Lighted from the 1st Aug., to 15th May.
Stot		... ..	F.fl.	24	10	A Guide to Stot from N. visible from East round by S. and W. to N.
Mandals Ryvingen		On S.W. end	F.fl.	135	18	The flash is <i>red</i> every half minute. To be Lighted 20th Oct., 1867.
Hatholm		... ..	F.	64	10	Visible from N. by E. $\frac{1}{2}$ E. round by W. and S to S.S.E. To be Lighted 20th October, 1867.
Ohna Calf		... ..	F.fl.	143	18	Will be shewn from 20th October, 1867, a red flash every half minute, to denote vessels in the ice.
72 Skaw Light-house	Signals from	... ..	...	...	...	See Note (a).
73. Faludden	Gothland	56° 59' N. 18° 25' E.	F.	35	8	Est. October, 1867, S.E. end of Island.
74. Trieux R. on La Croix Rock	France N. Coast	48° 50'.3 N. 3° 3' 3 W.	Fl.	45	10	Est. 15th October, 1867. An eclipse and a flash will succeed each other alternately every four seconds.
Bodic	Ditto	... ..	Fl.	176	12	Est. 15th October, 1867. See Note (b).
75. Lian River Entrance	China E. Coast	Yellow Sea	F.	...	8	Light Vessel on N. Coast. See Note (c).
76. Bulk	S. Holstein Coast	54° 27'.5 N. 10° 12' E.	F.	96	14	Light improved.
Friedrichsort	Ditto	54° 23'.5 N. 10° 11'.7 E.	F.	37	8	For Entering Kiel. See Note (d).
Flensburg	Ditto	... ..	F.	15	2	A fixed green light, also an additional fixed red light. See Note (e).
Sonderburg Sli	Ditto Sli Flord	... ..	F.	...	10	Two fixed green lights. See Note (f.) At North Point of Entrance.
77. Shell Cays	Marsh I. Louisiana	... ..	...	...	...	Destroyed in a hurricane, 3rd and 4th October, 1867.
San Juan H.	Porto Rico	W. Indies	...	...	...	Buoys laid down. See Note (g).
78. Brindisi H. Naples Mole	Italy	Adriatic Mediterranean	F.fl.	35	10	A Mole constructing. See Note (h). Est. 15th Oct., 1867. Transferred from Military Mole to Naples Mole, 280 yards from former position. See Note (i).
Lefchimo Point	Corfu	Ditto	...	...	...	Light Vessel replaced, temporarily extinguished, see No. 57, p. 636
Kill Karabournou	... ..	Black Sea	...	...	...	Lighthouse painted red | Note (k)
79. Nerva I.	Gulf Finland	60° 14'.7 N. 27° 58'.6 E.	F.	118	16	Est. " " green] Viborg Bay.
Isle Talaftons	Boko Sund	58° 51'.2 N. 17° 36'.5 E.	F.	...	...	To guide through Boko Sund. Visible from S. by W. to W. by S.
Isle Ledskar	Orsbaken	58° 42'.2 N. 17° 14' E.	F.	...	...	To guide through the Orsbaken for Nykoping. Seen from N.W. by W. round by North to S.E. by E.
Femero	On S. side of a house	58° 39' N. 17° 7' E.	F.	...	...	To guide Vessels across Brawiken.
80. York Spit, York River	Chesapeake Bay	United States	F.	30	8	A Floating Light re-established See Note (l) for position.

F. Fixed. F.fl. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

(a) The Danish Government has given Notice, that from the 1st day of January, 1868, the following signals will be hoisted on a mast with a yard, on the top of the old lighthouse on the Scaw, distant about 1700 yards W. by S. (by compass) from the new lighthouse, to denote that one or more of the light vessels in the Kattegat have been compelled to leave their station on account of ice or other causes, and the signals will be continued until the vessel or vessels are replaced.

No. 1. One ball on the masthead signifies that the *Trindelen* light vessel has left her station.

No. 2. Two balls below the eastern yard-arm signify that the *Kobber-ground* light vessel has left her station.

No. 3. One ball below the quarter of the yard on the east side of the mast signifies that the *Anholt* light vessel had left her station.

No. 4. Two balls below the western yard-arm signify that the *Læsø channel* light vessel has left her station.

The balls will be painted *red*.

The signals hitherto shown from the old lighthouse on the Scaw, as well as from the lighthouse on the Hirtsholm when the *Læsø channel* light vessel has left her station, will, from the same date, be discontinued.

(b) It is visible through an arc of 18 degrees, or 9 degrees on each side of the centre of the channel.

DIRECTIONS.—In entering the Trieux bring the two lights in one, and when the Bodic is hidden by La Croix tower, to an eye 8 feet above the level of the sea, open out the Bodic to the West and pass the La Croix on that side.

It is intended to place two red lights on the left side of the river, as a guide from the La Croix to the interior anchorage. The West coast of the channel is now marked by a bell buoy on the Plateau des Sirlots and by five stone towers painted *red*.

(c) The light vessel has three masts, and is moored in 5½ fathoms, with Tower hill bearing S. by E. $\frac{3}{4}$ E., ruined tower on Kæe-chu point S.E. $\frac{3}{4}$ E., and the mouth of the river N.E. by E. $\frac{1}{4}$ E. Baskets are placed on the top of two of the masts; the Mizzen yard is always crossed, and from this mast signals are made. From the light vessel the two buoys in the river can be seen, one with the eye, the other with the assistance of a telescope.

All Bearings are Magnetic. Variation 3° 30' Westerly in 1867.

(d) The tower is round, 32 feet high, and is placed on the reef on the West coast of Kiel fiord, S.E. 50 yards from its extreme.

In foggy weather a signal from the mail steamer will be answered by sounding a bell.

Ships entering Kiel fiord should not pass within 50 yards of the light.

When the fiord is frozen over the light will not be exhibited.

(e) This light is exhibited from a pole, and is intended to indicate the position of the port of Flensburg, and when the mail steamer is expected, a *fixed red* light is exhibited in addition, which, being kept in a line with the green one, indicates the position of the channel.

(f) These lights are *fixed green* lights, bearing North and South from each other; the North light is elevated 19 feet, and the South light 15 feet, above the level of the sea, and in clear weather both should be visible from a distance of 3 miles. They are exhibited from poles placed

in the Castle square, and when kept in line lead between the East and West points at the entrance of the port.

(g) The Spanish Government has given Notice, that the following buoys have been placed at the entrance of San Juan Harbour, island of Puerto Rico.

A *Bell and Safety Buoy* has been moored in $3\frac{1}{2}$ fathoms, at low water springs at the mouth of the port, close to the breakers of Cabras island, the lower part is painted *black* and the upper part *white*; above the bell is a glass reflector.

The body of the buoy is surrounded by an iron frame work to facilitate the preservation of life from shipwreck.

The buoy lies W. $\frac{1}{2}$ S. distant 3 cables from Morro point.

Western Bank Buoys.—Three smaller buoys, painted *black and white* alternately, have been placed on the western edge of the channel, near the entrance, in 14 feet water.

Morro Point Buoy is a large *red* buoy with a ball, in 15 feet water, on the edge of the shoal off Morro point, and lying S. W. $1\frac{1}{2}$ cables from that point.

Beacons.—Three beacons have been placed on the eastern side of the channel; they are surmounted by glass reflectors.

Warping Buoys.—Nine iron barrel shaped *black* warping buoys have been placed in the channel, rather nearer the eastern side than the western. These buoys are moored in from 6 to 8 fathoms, low water springs, and range from the entrance to abreast Puntilla. On each buoy is marked the depth of water in which the buoy is moored.

(h) Extending in a south-easterly direction from the Castello di Mare lighthouse, intended to be carried to a distance of 285 yards, 130 now completed; also that a *red* buoy with staff and flag has been placed E. by S. $\frac{1}{2}$ S. distant 285 yards from the same lighthouse.

(i) The Italian Government has given Notice, that since the 15th day of October, 1867, the light on the military mole at Naples has been removed to a tower recently erected on the extremity of the mole, and bearing E. $\frac{1}{2}$ S. distant 280 yards from the old position of the light.

The light shews a flash every three minutes; besides which a light vessel has been placed 62 yards off the new lighthouse, to mark the end of the mole in the course of construction.

This light is a *fixed green* light, elevated 30 feet above the level of the sea, and in clear weather should be seen from a distance of 2 miles.

The light vessel has one mast, surmounted by a globe painted with red and white bands.

At a distance of 142 yards from the new light, a buoy, surmounted by a globe painted with *red and white* bands, has been placed, to mark the extremity of the stones.

(k) The Turkish Government has given Notice. that for the purpose of enabling Mariners to distinguish the European from the Asiatic shore, in the vicinity of the entrance of the Bosphorus. they have caused the lighthouse of Kili to be painted *red*, and that of Karabournou to be painted *green*.

(7) The light-vessel is schooner-rigged, painted yellow, and is moored in 4 fathoms water, with the following bearings,—

New point Comfort lighthouse	..	N.N.W. $\frac{1}{2}$ W.
Back river	.. .. .	S.S.W. $\frac{1}{2}$ W.
Too's point	.. .. .	W. $\frac{1}{2}$ N.

The light is intended to mark the York spit, and to guide vessels bound into Mobjack bay and York river.

NAVIGATION OF THE CHINA SEA.—Dangers between the Fiery Cross and North Danger Reefs, in the main route of the China Sea, and shoals in the Palawan route, with remarks on the Paracel, by Navigating Lieut. John W. Reed, R.N., H.M. Surveying Vessel *Rifleman*, 1867.

All the bearings are Magnetic. Variation 1° 20' Easterly, in 1867.

Discovery Great Reef.—South end in lat. 10° 0' 7" N., long. 113° 51·5' E., bears E.N.E., 52 miles from the N.E. end of the Fiery Cross reef; it is a long narrow coral reef, most of which dries at low tides; several rocks upon it always show above water; in the centre is a shallow lagoon, with no passage to it through the reef. From the S. point the reef tends N., 5 miles, then N. by E., 5 miles; it is a mile broad at the S. end, and half a mile at the N. No bottom with 100 fathoms at a very short distance from any part of it except its N. end, where the *Rifleman* anchored in 42 fathoms, nearly half a mile from the rocks; at a third of a mile off the S.W. point 192 fathoms sand and coral was obtained.

The Hainan fishermen report a shoal 10 miles N.E. of *Discovery Great reef*, the locality not being examined should at present be avoided.

Discovery Small Reef.—E. $\frac{1}{2}$ N., 9 $\frac{1}{2}$ miles from *Discovery Great reef*, is in lat. 10° 1·5' N., long. 114° 1·5' E.; a small round coral patch, three cables across, partially dry at low tides, very deep water around, with 174 and 180 fathoms, sand and coral, found close to its eastern side, but on its western no bottom with 210 fathoms at the same distance.

Western or Flora Temple Reef has rocky patches just under water at its S.W. end, and 1 to 3 fathoms in other parts; its centre, in lat. 10° 15' N., long. 113° 37' E., is N.W. by W. $\frac{1}{2}$ W., 16 $\frac{1}{2}$ miles from the N.W. end of *Discovery Great reef*, and is the westernmost danger in this part of the China Sea. It is 1 $\frac{1}{2}$ miles N.E. and S.W., and above half a mile broad at the southern part, decreasing to half that breadth at the opposite end. The *Rifleman* anchored in 5 fathoms on its N.E. extreme, approaching it cautiously shoal water being seen just inside the edge; 18 and 74 fathoms were had close to, but at a short distance off, no bottom with 100 fathoms.

The reef on which the *Flora Temple* was lost in 1859 was said to be 6 miles north westward of the Western reef, but the *Rifleman* passed over that position, and certainly no danger exists there; moreover, the description of the reef given at the time of the wreck applies exactly to the Western reef, where, without doubt, the ship was lost. But possibly the invention had something to do with the insurance.

Tizard Bank, Reefs and Islands.—From *Discovery Small reef* the nearest part of the Tizard bank bears N.E. by E., 16 miles. It is very extensive, and, like large coral banks of the China Sea, has a lagoon bordered by shoal patches. Several patches of the Tizard bank are dry at low water, two having an island on them, and a third a sand cay. The bank takes a N.E. by E. $\frac{1}{2}$ E. direction, and the eastern limit not being yet determined, extends about 20 miles, its breadth at the N.E. part being 13 miles, and at the opposite end 7 miles.

Itu Abaer, the larger of the above islands, is at the N.W. corner of the bank, three-quarters of a mile long E. by N. and W. by S., and a quarter of a mile broad. The reef around it extends in some places to a short half mile, its limits being shown by breakers. The island covered with small trees and high bushes, is the resort of sea birds. Two or three cocoanut and a few plantain trees stand near a small well, the most conspicuous object being a single black clump tree, on the north side of the island, distinctly seen 10 miles off, the tree is in lat. $10^{\circ} 22' 25''$ N., long. $114^{\circ} 21' 45''$ E.

About 6 miles, East, from *Itu Abaer* is a small sand cay, nearly in the centre of a circular reef three quarters of a mile in diameter. The island and cay are connected by shoal patches, which form the N.E. part of the bank; and nearly midway between, but nearer the island, is a reef, covered at half tide, about the same size as that surrounding the cay. On parts of the northern edge of the bank there is not less than 4 fathoms, and vessels may safely anchor in from 7 to 11 fathoms about $1\frac{1}{2}$ miles westward of the sand cay, midway between it and the *Tizard* reef.

Namyit Island is due S. from *Itu Abaer*, $11\frac{1}{2}$ miles; is very small, 3 cables E. and W., and one cable broad, it is surrounded by a reef extending above a mile to the westward.

West of *Namyit* are two dangerous reefs, covered at high water; one oval-shaped, three-quarters of a mile long N.N.W. and S.S.E., bearing W. $\frac{3}{4}$ S. 6 miles; the other a mile long N. and S., is nearly three-quarters of a mile broad at its northern end, narrowing to a point at the opposite end; this is the westernmost danger of the *Tizard* group, and its outer edge is in lat. $10^{\circ} 13' 3''$ N., long. $114^{\circ} 13' 1''$ E.

These form all the dangers found on the bank, and, excepting a 3-fathoms patch about a mile off *Namyit*, 4 fathoms was the least water on any of the other shoal patches. In fine weather vessels safely anchor on any of them. The depths in the lagoon vary from 26 to 48 fathoms, it has four small patches, 5 fathoms being the least depth on them.

About the eastern limit of the bank, the Hainan fishermen report a breaking reef, which is probable that seen by Captain Eldad in the *Cacique*, being, however, far to the eastward of the proper track for vessels, where no Commander would be justified in venturing.

An island, named *Sin Cowe*, is said, by the fishermen, to be about 30 miles southward of *Namyit*.

Loaita Island and Dingers.—*Loaita* (South island of *Horsburgh*) N. $\frac{3}{4}$ E., 18 miles from *Itu Abaer*, the N.W. extreme being in lat. $10^{\circ} 40' 9''$ N., long. $114^{\circ} 24' 9''$ E.; is a low bushy sand island, and very small, being $1\frac{1}{2}$ cables across, surrounded by a reef, in some places half a mile off.

A reef, of $1\frac{1}{2}$ miles extent, dries at low water, with a small sand cay near the centre, 5 miles N.W. of *Loaita*. Another much larger is three-quarters of a mile to the S.W. of it, extending in that direction nearly $2\frac{1}{2}$ miles; the limits of this danger were ill determined, but the position of the outer, or S.W. extreme, is in lat. $10^{\circ} 42' 0''$ N., long. $114^{\circ} 18' 0''$ E., the sand cay bearing N.E. $\frac{1}{2}$ N., $3\frac{1}{2}$ miles, and *Loaita* island E. by S., $6\frac{1}{2}$ miles.

The dangers in the vicinity of *Loaita* island are not known, but the usual coral bank, with lagoon and surrounding shoal patches was found, and N. by W., 4 miles from it, 7 to 9 fathoms were found on a coral patch at the edge of the bank, and 31 to 34 fathoms had between this and the island.

Dangerous shoals are known to extend 10 or 11 miles to the eastward of Loaita, one of which has a sand cay.

Soubi Reef, the S.W. end of which is in lat. $10^{\circ} 53\frac{1}{2}'$ N., long. $114^{\circ} 4'$ E., is about 6 miles N.W. of the Loaita reefs, and 8 miles S.W. of Thitu reefs, being the westernmost danger hereabout; it is a sinuous coral reef, $3\frac{1}{2}$ miles long. N.E. and S.W., and 2 miles broad, dry at low water, with a lagoon, but apparently no passage into it.

Thitu Reefs and Island—(the N.W. dangers of Horsburg) consist of several patches on two coral banks, separated by a narrow deep gut. Thitu is a low round sand island, not half a mile across, near the middle of the dangers, on the southern part of the reef, which dries at low water, reaching three-quarters of a mile eastward of the island; it forms in that direction the extreme of the western bank. Near its S.W. end is a dark clump tree in lat. $11^{\circ} 3' 9''$ N., long. $114^{\circ} 16' 25''$ E.; in addition to which the island shows some low bushes and two stunted cocoa-nut trees, near which is a small well and a few plantain trees.

The western bank widens out N.W. and S.W. from the island $2\frac{1}{2}$ miles. The N. side of this part of the bank is marked by a round coral reef, three-quarters of a mile across, between which and the reef surrounding the island are $2\frac{1}{2}$ to 7 fathoms, the deep water being next the island. The S. edge of the bank is marked by a reef much smaller than the foregoing, and the depths between it and the island are more favourable for anchoring than on the opposite side of the bank, being nowhere less than $4\frac{1}{2}$ fathoms. From these two reefs the bank narrows, and terminates in a point in lat. $11^{\circ} 2' 30''$ N., long. $114^{\circ} 10' 30''$ E., the island E. $\frac{3}{4}$ N., 6 miles.

The north edge of the bank has a sand cay bearing from the island W. $\frac{1}{2}$ N., nearly $3\frac{1}{2}$ miles, on a large patch of reef, dry at low water, between it and the W. edge of the bank are reefs, shewn by breakers. There is a passage of 5 to 12 fathoms into the lagoon between the sand cay reef and $2\frac{1}{2}$ miles N.W. of the island.

The S. side of the bank is not so dangerous as the N. Vessels may anchor on it, the sand cay bearing between N.E. by N. and N.W. by N., or to the eastward of the patch S.W. $2\frac{1}{2}$ miles from the island, with the cay bearing N.W. by W. $\frac{1}{2}$ W. and the island N.E. $\frac{1}{2}$ E. The lagoon has 17 to 19 fathoms depth. The eastern bank is a mass of reefs, its W. extreme is above a mile E. of Thitu island, extending $1\frac{1}{2}$ miles E. and $3\frac{1}{2}$ miles N.E., its average breadth being 2 miles.

The Trident Shoal, E. by N. 16 miles from North Danger, is a coral bank $7\frac{1}{2}$ miles long and 6 broad, shaped like a shoulder of mutton, the broad part being to the northward; it is composed of many patches under 10 fathoms, two of which are dangerous. These patches are on the edges of the bank, forming a lagoon with depths of 26 to 37 fathoms; close outside the bank 100 fathoms finds no bottom.

The worst of these patches is at the northern extreme of the shoal, and is $1\frac{1}{2}$ miles E. and W., and half a mile N. and S.; near its centre in lat. $11^{\circ} 31' 5''$ N., long. $114^{\circ} 30' 3''$ E., is a small spot which is dry at low water springs; the depths on other parts of it vary from $1\frac{1}{2}$ to 6 fathoms: the other, at the eastern extreme of the shoal bears S.E. $\frac{1}{2}$ S., $3\frac{1}{2}$ miles from the former; it is a small spot of $2\frac{1}{2}$ fathom, with depths of 3 to 5 fathoms at half a mile around it; some casts of 4 fathoms were had about a mile W. by S. from the dry part, but no less than 5 fathoms was found on any of the other patches.

A Breman vessel the *G. E. Lorenz Meyer*, Captain Moller, reported having struck at night on a shoal said to be in lat. $11^{\circ} 15' N.$, long $114^{\circ} 51' E.$ This site on being examined no danger was discovered, and it is concluded the *Meyer* touched the eastern patch of the Trident shoal.

Lys Shoal is 2 miles to the southward of the Trident shoal, and like the latter is formed of patches under 10 fathoms, with a central lagoon; only one small spot of 17 feet was found, the S.W. extreme of the bank, in lat. $11^{\circ} 19' 7'' N.$, long. $114^{\circ} 34' 4'' E.$; and surrounded with 5 fathoms. We found some 5 fathom patches near the N.E. end of the bank, but nothing under 6 fathoms was met with elsewhere, the general depths on patches being 7 to 10 fathoms, and a short distance outside of them no bottom was found at 100 fathoms.

CAUTION.—Vessels must not attempt the reefs in this part of the China Sea, a long line of shoals is known to exist to the eastward of all these dangers.

Macclesfield Bank.—The *Rifleman* on her way from Hong Kong to the North Danger, crossed this bank in March, 1865, and again in April of the present year. On the first occasion, soundings were struck in lat. $16^{\circ} 11' N.$, long. $114^{\circ} 26' E.$, in 115 fathoms, sand and mud; from hence on a S. by E. course over the bank the least depth of water found was 12 fathoms, the general depths being 40 to 50 fathoms; but a patch of 15 fathoms was found near its southern edge in lat $15^{\circ} 34' N.$, long. $114^{\circ} 30' E.$; and 5 miles further southward no bottom with 307 fathoms.

On the second occasion of crossing the bank from lat. $16^{\circ} 34' N.$, long. $114^{\circ} 13' E.$, a course was steered for the 4-fathoms patch, reported by Captain Moses, of the Siamese vessel *Bangkok*, in lat. $16^{\circ} 25' N.$, long. $114^{\circ} 25' E.$; the deep sea lead constantly going found no bottom with 50 to 60 fathoms of line. At noon the ship was in lat. $15^{\circ} 59' N.$, long. $113^{\circ} 58' E.$, and she had passed about 2 miles to the westward of his position of the patch. Proceeding southward, 42 fathoms, coral bottom were found on the northern edge of the bank in lat. $15^{\circ} 51' N.$, long $113^{\circ} 57' E.$; these regular depths of 42 and 43 fathoms to lat. $15^{\circ} 30' N.$, long. $113^{\circ} 57' E.$, where 32 fathoms were had; 3 miles S. of this position there was no bottom with 100 fathoms.

Coral Bank.—Proceeding from Loaita island, round the northern edge of the Archipelago, 47 fathoms were found on a coral bank at lat. $11^{\circ} 28' N.$, long. $116^{\circ} 46' E.$; continuing E. by S. $\frac{1}{4}$ S.; 3 miles farther 44 fathoms were had, and soon after 12 fathoms on a small coral patch in lat. $11^{\circ} 26' N.$, long. $116^{\circ} 53' E.$ Continuing the same course, the depths were 42 fathoms for 5 miles; at 8 miles 125 fathoms, and at 14 miles 175 fathoms; a few miles farther, no bottom was found with 200 fathoms.

Routh Shoal is at the N.E. angle, as Nilo reef is at the N.W. angle of the Archipelago of reefs, and forms the N.E. limit of the Palawan passage. It is a pear shaped coral bank, 8 miles in length N.E. by E., and S.W. by W.; $4\frac{1}{2}$ miles broad at its N. end and 3 miles at its S. end; it is not dangerous, the least water on it being $4\frac{1}{2}$ fathoms. A 5 fathoms patch, about three-quarters of a mile in extent is at the north extreme of the bank in lat. $10^{\circ} 50' N.$, long. $117^{\circ} 46' E.$ Nothing less than 6 fathoms was found on the other patches surrounding the lagoon; the depths in the lagoon vary from 17 or 19 fathoms at the borders to 35 fathoms in the centre.

The northern part of this shoal was crossed by the *Seahorse* many years ago, and the southern by Captain Routh, of the *Bombay*, in 1835.

Holmes Shoal.—From the Routh shoal, on a S.E. $\frac{3}{4}$ S. course no bottom was found within 200 fathoms on the supposed position of the Holmes, nor was there any sign of shoal water visible 7 miles further to the S.; from this last position the ship was steered N. 8 miles, and then S.S.W. $\frac{1}{2}$ W. 23 miles, with the same result, again crossing over, or near to the position of the shoal. Captain Curling of the P. and O. Co.'s service, passed over the same place in 1862, without seeing anything like shoal water, and many Commanders of steamers have reported to the same effect.

This danger should therefore be removed from the chart; there is no such shoal where reported, and there are reasons for believing that the *Fairie Queen* shoal, 18 miles to the westward, is the real Holmes shoal.

Luconia Shoals.—Most of them were surveyed in the *Rifleman*, and published in 1863, but the account was not, and is not completed to the northward and westward, by the following:—

The northernmost of the shoal patches reached in 1863 was in lat. $5^{\circ} 48' 5''$ N., long. $112^{\circ} 32' 3''$ E.: when the ship was anchored near a $2\frac{1}{2}$ fathoms patch, in lat. $5^{\circ} 33' 3''$ N., long. $112^{\circ} 31' 5''$ E., on the northern edge of a coral bank, traced 2 miles to the southward, but which no doubt extends to the northernmost patch surveyed in 1863, and just referred to; vessels should not pass between these positions.

Friendship Shoal is the northernmost of the Luconia group; the *Rifleman* crossed it with $4\frac{1}{2}$ fathoms least water, although less depths were suspected. The N. part of the shoal is in $5^{\circ} 39' 5''$ N., long. $112^{\circ} 31' 52''$ E., approximately. Lines of soundings were taken in a N.E., N., and N.W. direction, from the N. end of the shoal for 4 miles, but no shoal water found.

GENERAL REMARKS.—Hainan fishermen, who subsist by collecting trepang and tortoise-shell, were found upon most of these islands in April and May, some of whom remain for years amongst the reefs. Junks from Hainan annually visit the islands and reefs of the China Sea with supplies of rice and other necessaries, for which the fishermen give trepang and other articles in exchange, and remit their profits home; the junks leave Hainan in December or January, and return with the first of the S.W. monsoon. The fishermen on Itu Abaer were more comfortably established than the others, and the water found in the well on that island was better than elsewhere.

PARACEL ISLANDS.—These islands were visited in February, 1865, by H.M.S. *Rifleman* for the purpose of relieving the crew of a wrecked vessel, and the following information was obtained by Mr. Tizard, Master R.N.

Lincoln Island.—South-east point in lat. $16^{\circ} 39' 6''$ N., long. $112^{\circ} 44' 4''$ E., $1\frac{1}{2}$ miles long, N.W. and S.E., $\frac{3}{4}$ of a mile wide, is about 20 feet high; covered with brushwood, and surrounded by a coral reef, dry at low water, extending $1\frac{1}{2}$ miles from its S.E. point, $\frac{1}{4}$ a mile from its N. and E. sides, and about a cable's length from its S.W. side. A narrow coral shoal extends southward from the S.E. point of the island, said by Horsburgh to extend 11 miles; judging from the soundings that were obtained, the dangerous part of this shoal does not appear to extend further than 3 miles from the island. Good anchorage can be obtained in

N.E. monsoon under its lee in 8 to 10 fathoms, coral, about half-a-mile from the shore.

The spring of excellent water, mentioned by Horsburgh, is merely a well dug by the Hainan fishermen close to a stunted cocoonut tree, into which the salt water filters.

Pyramid Rock from the S.E. point of Lincoln island, bears S.W. $\frac{1}{4}$ W., distant $7\frac{1}{2}$ miles. The coral bank round Lincoln island probably extends to the Pyramid rock.

Amphitrite Islands.—These two groups appear to be on the edge of an extensive coral bank, as a reef $1\frac{1}{2}$ miles wide of 6 to 9 fathoms, it extends $3\frac{1}{2}$ miles to the south-eastward of Woody island, the extremity of which could not be seen from the *Rifteman* when crossing it.

The spring of clear water, asserted by Horsburgh to exist on Woody Island, is merely a small well dug by the fishermen, like that on Lincoln Island.

Duncan and Drummond Islands.—Duncan (two) Islands are joined by a sandy spit always uncovered. They extend a mile E. and W., are four cables in breadth and surrounded by a coral reef in some places four cables from the shore, dry at low water. On the westernmost of the islands is a cocoonut tree.

Drummond Island is nearly round, and about three cables across; two cables south of it is a rock always dry. A coral reef commences the W. side of the island, and continues some miles to the E. and N.E. of it. Both Duncan and Drummond Islands are covered with brushwood. Between them is a safe channel, upwards of a mile wide, with 19 to 20 fathoms water; Horsburgh says it should not be taken by large vessels, the passage W. of Duncan Island being better, but the *Rifteman* when passing between Duncan and Money islands, suddenly found shoal water, which appeared to continue across that channel, and therefore the channel between Duncan and Drummond islands is certainly safer for steamers. Vessels may anchor to the northward of Duncan Island in 16 to 18 fathoms, about half-a-mile off shore.

21st September, 1867.

PHILIPPINE ISLANDS.—Account of dangers in the navigation of the Philippine Archipelago.

[All bearings are Magnetic. Variation $0^{\circ} 30'$ Easterly in 1867.]

The Perseus Rocks, off the coast of Sibuyan island, discovered in April 1867, by H.M.S. *Perseus*, Commander Charles E. Stevens, striking on them! are of coral, and supposed to be connected by shoal ground, being only distant $5\frac{1}{2}$ miles apart in a N.E. by N. and S.W. by S. direction; the southern rock is $7\frac{1}{2}$ miles E. from Cavit point, and the northern rock E. by S. $\frac{1}{4}$ S. nearly eight miles from Cambalayan point. Captain Fagg, of the Spanish Merchant Steamer *Sud Este*, in describing dangers of this Archipelago, "There is another reef to the southward of the island of Sibuyan, bearing from the Cresta del Gallo N.E. 4 to 5 miles. I have several times crossed it, being in my track from Romblon to Zebu. The least water I found on it was $5\frac{1}{2}$ fathoms." This reef is probably a part of that on which the *Purseus* struck, and also that alluded to in Horsburgh's Directory as having been seen about 10 miles E. of Sibuyan island.

Fagg Reef.—Captain Fagg also reports, that being under full steam off San Fernando point, West coast of Luyon, he clearly saw the bottom; he immediately stopped the engines, and took the following bearings, S. point of the isthmus of San Fernando S. 50° E., and the church of San Juan to the northward E. 10° N., approximately; he sounded first in five fathoms, then continuing to the southward had 5, 6, 7, 8, and 9 fathoms, and passing out to 50 fathoms.

This would place the reef 3½ miles N.N.W. $\frac{2}{3}$ W. from the W. extreme of St. Fernando point and in lat. 16° 39' N., long. 120° 14' E. of Greenwich approximately.

Nalupa Reef.—Also while proceeding southward from the village of Tibiao on the W. coast of Panay island, he had soundings on a coral reef, well known to the small coasters, off the village of Nalupa; some parts of it appeared awash, but Captain Fagg had 1½ fathoms with the village of Nalupa bearing E. by S., distant about two to two-and-a-half miles.

Batbatan Island.—A reef of rocks extends to the N. and N.E. of this island, that are not yet on the charts.

24th October, 1867.

TIME BALL AT CRONSTADT.

The following Notice was intended for our last number, but receiving it later than others, they had the preference, and we now give it place. But it is late in the year for the Navigation of the Gulf of Finland, and our seamen will not fail to avail themselves of its advantages in the ensuing summer. The Notice stands thus:—

Five minutes before the moment of the *Cronstadt mean noon*, a ball is hoisted daily at the masthead of the Naval Telegraph; the instantaneous fall of this ball indicates the moment of the *Cronstadt mean noon*.

The indication of this time is shown daily during the year.

During the navigation, in addition to this, the moment of *Greenwich mean noon* is indicated daily, *Sundays excepted*. In this case, the Time Ball is hoisted five minutes before the Greenwich noon half-mast-high, half a minute before noon to the masthead, and at the moment of *Greenwich mean noon* is dropped instantaneously.

The Longitude of Cronstadt is 1h. 59m. 3s., 3 E. from Greenwich,
and 7h. 7m. 14s., 5 E. from Washington.

So that at the moment of the Cronstadt mean noon
at Greenwich is reckoned 10h. 0m. 56s., 7 A.M.,
,, Washington ,, 4h. 52m. 45s., 5 A.M.,
and at the moment of the Greenwich mean noon
at Cronstadt is reckoned 1h. 59m. 3s., 3 P.M.,
,, Washington ,, 6h. 51m. 48s., 8 A.M.

Cronstadt, 1867, July 31st.

Astronomer Hubner.

A PACIFIC SUBMARINE TELEGRAPH.

IN our last number we noticed the project of an electric cable being laid to connect Yokoham with Jeddo,* and we have now met with another, which is to be laid in the bed of the wide Pacific Ocean. Progress is the order of the day, but it appears, and we say it from no motive of compliment that our American friends do more to break through old fashioned routine and not only encourage progress but find new ways of doing it by departing from the beaten track, than their progenitors in this part of the world. They have established a most important line of steamers between San Francisco and Hong Kong in the north, while we have ours between Panama and New Zealand in the south.

It appears that the Panama, New Zealand, and Australian Royal Mail Company's steamer *Mataura* arrived at Panama on the 4th instant, in advance of her time, and not a day and a half late, as stated in the telegrams in to-day's papers, the through voyage from Sydney having been performed in two days less than the contract period.

An illustration of the way in which two steam companies may by co-operation mutually benefit each other is afforded in the report just issued by the directors of the Royal Mail Steam Company, which states that "the line of steam communication with this company's line, the Panama route to New Zealand and Australia, having now been in operation over twelve months, it affords the directors of this company much satisfaction to draw attention to the highly successful manner in which the service, embracing the long ocean voyage from Panama to New Zealand, and *vice versa*, has been, from the commencement, performed by the vessels of that company." This tribute to the efficiency of the young Australian company is well deserved, and

* Speaking of Japan, we regret to find that our seamen have not found yet that the lower class of Japanese are not to be trusted. The Lonins or professional murderers stop at nothing, as they have shewn by numerous instances besides the following :—A correspondent in Japan forwards us the following concerning two unfortunate seamen of the Royal Navy who were found murdered in the streets of Nagasaki, each by a single sword cut :—"On the night of the 5-6th of August two seamen of Her Majesty's ship *Icarus*, on leave from their ship, lying in the harbour, were found dead in the streets of Nagasaki. The corpses lay in the gutter outside a house of refreshment. They had been last seen alive at ten p.m. by some of their shipmates, when they were sober, and their corpses were discovered at two a.m. by the Japanese police. The murder would appear to have been effected in a systematic manner on perfectly unresisting victims, who were most probably sleeping in a recumbent or semi-recumbent position, as the wound in each case was single and in both cases similar. It was a clean incision, like a sword-cut, across the front of the neck and chest, passing obliquely downwards from right to left, and almost severing the head from the trunk, so that death must have been instantaneous ; and, in fact, the bodies and hands bore no signs of struggling, and were free from minor cuts and contusions. There are only four sword cuts in modern English drill :—1, diagonal, from right to left of swordsman ; 2, diagonal, from left to right ; 3, horizontal, from right to left ; 4, horizontal, from left to right. The fatal cut was No. 2 in both cases."—*British Medical Journal*.

it is satisfactory to believe that the friendly co-operation of the two companies will continue to redound to the advantage of both.

We believe their's to be far larger and more powerful vessels than ours, still we are glad to find that our last arrival at Panama on that line was two days less than the stipulated time. It is at least satisfactory to know that we are contributing toward this progress by our line, and that for many years we have been leading the way in scientific geographical expeditions to the different and extensive shores of that vast sea. Still how much remains to be done is too well known to those whose business it is to navigate its waters, and it will be yet very long before we shall be able to shew the seaman a good intelligent chart, by which he can approach any of its shores without fear of sunken dangers. Still we have done our share in the great work, and we are glad to find that our American brethren are following us up in good spirit and determination. There is an abundance yet left for all of us to do.

We find the following in a paper of the Sandwich Islands, that will interest our nautical readers :—

In this wonderful nineteenth century—this age of steam, iron and lightning—it has become the fashion not to be astonished at anything, and never to express doubts of the fulfilment of prophecies, the utterance of which fifty years ago would have rendered a man, in public opinion, a fitting candidate for a lunatic asylum. It is less than fifty years ago that a learned American savant, in a laboured article, proved most conclusively to his own satisfaction and that of many others, that it was quite impossible for steamers to cross the Atlantic.* The project of a railway, with steam cars, when first laid before the British Parliament, was received with jeers of incredulity. Morse † was years besieging the doors of Congress before his supposed Utopian scheme of an electric telegraph received sufficient consideration to allow of a line being constructed between Baltimore and Washington. Nobody at first believed that Ericsson's Monitors ‡ would ever live in a sea-way, or could be made habitable for human beings. Thus, one after another, old preconceived notions as to what is possible for the creature man to accomplish and what is impossible, are dispelled, and we tacitly wait the announcement of some new wonder, fully prepared not to be surprised.

For instance, if we should prophecy that in a few years hence Honolulu would be in telegraphic communication with San Francisco, and consequently with all the rest of the civilized world, the probabilities are that plenty of people could be found who would laugh at the idea as utterly visionary.§ Seriously, however, it is quite

* Of course the writer alludes to Dr. Lardner, who wrong as he was, has yet interested the world by his scientific works.

† Professor Morse was not more successful in London.

‡ Ericsson's or Captain Cole's which, we should like to know.

§ Yet it is not so difficult as the project of a bridge across the English channel !

within the range of possibilities that, during the next ten years, the cost of making and laying a submarine telegraph cable will be greatly reduced—so much so as to bring the accomplishment of the enterprise within the reach of even our modest means. And whenever that time arrives, as it surely will—sooner or later—we are fortunate in having already a survey of the route between these islands and San Francisco, with soundings, and a reliable description of the nature of the bottom of the ocean.

On the 9th of November, 1858, the United States surveying schooner *Fennimore Cooper*, Lieut. J. M. Brooke commanding (a former pilot boat of ninety-five tons burthen), arrived at Honolulu, after a passage of forty-three days from San Francisco. Lieut. Brooke was the inventor of a sounding apparatus, which was the one used in surveying the bed of the Atlantic, preparatory to laying the cable which now connects the old world with the new. The peculiarity about this apparatus is that a thirty-two pound shot at the end of the line takes it to the bottom, immediately on striking which it is disengaged by a spring and falls off, while a glass tube immediately above the shot becomes filled with the soft sedimentary deposit of the ocean bottom. Lieut. Brooke has specimens of all the products of his soundings in the Pacific, mostly consisting of dead mollusca and infusoria.

About three hundred miles west of the Golden Gate he found a submarine range of mountains, running parallel with the Sierra Nevada range, the depth of water on which was about two miles on an average, while the lowest depth reached did not exceed three miles. The project of an ocean telegraph, between Europe and America, had then been talked of, and Lieut. Brooke had sounded the route. He said, while here in 1858, that there would be vastly less difficulty in laying down a cable between these islands and the California Coast than between Ireland and Newfoundland.*

The *Fennimore Cooper* being on special government service, as a matter of course her commander was not at liberty to make known to the public the results of his observations in full, but transmitted them to the head of his department, whence they can doubtless be obtained on application. The hydrographic officer of the schooner was Lieut. Kern, an adventurous as well a scientific man. He was the discoverer of the celebrated Kern river, the finding of gold in the neighbourhood of which created such a furore and stampede among the miners of California some years ago.

Between the Farralones and within fifty miles of these islands, Lieut. Brooke made sixteen soundings, the result of three only of which have transpired, so far as we have been able to ascertain. These are as follows :

Latitude 31° N., Long. 130° W., 2400 fathoms.

Latitude 25° N., Long. 132° W., 2600 fathoms.

Latitude 21° N., Long. 144° 25' W., 2500 fathoms.

* We all know well how ably and successfully this was done after the experience and failure of the two former. See our Vol. for 1865 and 1866.

With the exception of the ridge before mentioned, there are no elevations or depressions in the bed of the Pacific, but the bottom appears to be a vast level plain, to within fifty miles of these islands, when the depth begins rapidly to decrease. To reach bottom at the depth of three miles, required one and a half hours, and it took two men four hours to reel up the line after the bottom had been reached. With such scientific men as Lieuts. Brooke and Kern, possessed of all the appliances of nautical science, the utmost exactitude must have been obtained in their observations. The schooner was provided with no less than seventeen chronometers, and to secure a perfect immunity from the least jar, these were placed in gutta percha cases.

Our readers will remember the Japanese boy, Joseph Heco, and his history. He came to Honolulu on the *Fennimore Cooper*, and remained here for a time, returning to his own country by another vessel. He is now residing at Yokohama.

As we said above, the full report of the cruise of the *Fennimore Cooper*, is without doubt on file in the Navy Department at Washington, and at the present time its publication would be particularly appropriate. The application would very properly come from the California delegation in Congress, and would unquestionably meet with prompt attention.

The great and growing State of California needs and will eventually have direct telegraphic communication with China and Japan, and we look forward confidently to the time when these islands shall become the connecting link of the magic wire between the ancient and opulent "Ind" and the young and vigorous West. The tide of human progress sets in this direction, and we must swim with the current or run the risk of losing our frail bark in the rapids.

The schooner remained about these islands until February, 1859, having meantime visited French Frigate Shoals, of which a thorough survey was made.* From here she went to Japan, and Lieut. Brooke no doubt carried out his expressed intention of obtaining deep-sea soundings all along his route to Japan. While at Hakodadi a tremendous earthquake occurred, and the *Fennimore Cooper*, as well as the Russian frigate *Diana*, which had formerly visited these islands, were both carried on shore by the in-rushing sea, and broken up so much that they were abandoned.

The subsequent history of Lieut. Brooke and his companions we have never learned, beyond the fact that from Japan they reached China and from thence the United States. But the fact remains on record that the Pacific Ocean, to the extent of 2,100 miles, between San Francisco and the Hawaiian Islands, has been thoroughly sounded, and the feasibility of laying down a submarine cable clearly demonstrated. And so we bide our time.

In reference to the island in the Pacific, half way between California and China, we suspect our Sandwich Island friends will be disappointed. A New York paper tells us of an Island in the Pacific taken possession

* We are glad to learn that this addition has been made to Pacific Hydrography.

of for the United States.—San Francisco, Sept, 17.—The schooner *Milton Badger* has returned from Brook's Island. She left at anchor off the island the United States ship *Luckawanna*, on an exploring expedition. The *Badger* anchored three-quarters of a mile from the shore, discharged her cargo safely, and left on the island Captain Burdett and eight men. The island is situated in latitude 28° 13' north, longitude 177° 0' west. The steamers of the China line can anchor four miles off the island, in about eight fathoms of water. The island will be used as a depot for these steamers. The *Badger* took the first instalment of supplies.—*New York Tribune*, Sept. 23.

We would not be supposed to assert that the foregoing may turn out to be the true position of the island, but as we read of an island, which among other names has that of Massachusetts and is said to be an old American discovery, it is so near that of the above, that we think that it is more likely to be adopted by the American line of steamers than the out of the way Honolulu of the Sandwich Islands. But we shall no doubt know more of this hereafter, as well as the rest of the great progress our good friends are making in this great Pacific Ocean.

THE MAIL STEAMER *Atrato*.

No one need wonder, after reading the following, that the *Atrato* has proved an unhealthy ship:—

A correspondent of the *Times*, who was one of the unfortunate passengers by the Royal Mail steamer *Atrato* from St. Thomas, who had to undergo ten days' quarantine the other day in the *Parana*, on the Motherbank, gives the following account of his adventures on board:—

On our arrival at St. Thomas by the Royal Mail steamer *Tyne*, from Colon, we were moored alongside the *Atrato*, and on the following day were transferred to that ship. In the course of the day it came out that the chief officer of the ship was then dying on board of yellow fever, that the mail agent had been given over by the doctors, and that fourteen of the crew had been sent to hospital, suffering from the same horrid disease; of these it was understood that five died before we left St. Thomas.

Imagine, sir, our feelings on learning that one hundred and fifty passengers, suffering from no contagious illness, had been put on board a ship reeking with the contagion of yellow fever in its most malignant form, and that when there was at least one other ship in port, free from disease, that might have been substituted for the *Atrato*. On boarding the *Atrato* we were much surprised at the small size of her cabins and the absence of ventilation in many of them, which, being placed on the third deck, and close to the water-line, cannot receive fresh air through the ports at sea; the only other mode of ventilation

for these cabins is by wind sails, which are removed during bad weather or rain, so that the unfortunate lower-deck passengers are frequently left for many hours without a breath of fresh air reaching them.

In harbour at St. Thomas the air is so offensive that one is forced to close the port and rather have no fresh air at all than breathe an atmosphere so villainous. The cause of this is that the harbour is tideless, and the water consequently nearly quite stagnant, so that dead animals and garbage of all kinds thrown overboard from the ships frequently float around them for hours, and under the rays of such a sun emit a stench more easily to be imagined than described. Can any one wonder that the crews of ships, sweltering for weeks in such a spot, should suffer frightfully from yellow fever, or that the inhabitants die in great numbers of cholera and small-pox, often combined? But my most serious charge against the Royal Mail Company is the want of proper attention to cleanliness and sanitary regulations that prevails in those of their ships in which I have sailed—viz., the *Tyne* and the *Atrato*. The ventilation of the former ship, though she never quits the Tropics, is hardly better than that of the *Atrato*, while the black stewards give themselves no trouble to keep the cabins clean and sweet nor were we much better off in that respect when we reached the *Atrato*.

In the first place, no baths could be had while the ship lay in port, and even at sea, when the tanks were supplied with water, the bath accommodation was very insufficient even for our small number of passengers. The captain and officers were generally willing to do all in their power for our comfort, and the stewards were tolerably attentive, but so reduced were they in number from death and sickness, and so feeble were many of them from the effects of the climate, that they were incapable of performing their duties satisfactorily. Still, the after part of the ship was kept tolerably clean, but forward I am sorry to say, a very different state of things prevailed. The second-class passengers' complaints of the dirty state of their end of the ship were loud and frequent. Had bad weather set in while we were in the Tropics, forcing us to close the upper ports as well as the lower, and the skylights, the results might have been most lamentable. Even with fine weather and a complement of less than one-half of the passengers the ship is allowed by certificate from the Board of Trade to carry, we lost seven men by yellow fever on the passage, and three others died after our arrival at Plymouth.

There were besides many cases where the disease took a milder form, and the patients recovered. The number of sick was sometimes reported as high as forty. The only thing in the company's ships deserving of commendation is the *cuisine*. Our food was good in quality, well cooked, and superabundant, so that I, who had a cabin on the lower deck, often exclaimed, "Oh! for half the food and double the air. And now a few words on our treatment by Government on our arrival, which was, in our opinion, very bad. We were transferred in open boat on a stormy damp evening, sick and well, men, women,

and children, to an old hulk, the *Parana*, where everything, including bedding, was so saturated with moisture that many could not use it, and many of those who did were laid up with severe colds. Several relapses of old complaints brought on by service in hot climates occurred, and the health of nearly all on board suffered from our long detention in the *Parana*. Better medical care would be a great boon to future sufferers by quarantine; if it is to be a regular institution of this country, as seems likely, the sooner our Government follows the example of others and provides suitable accommodation on shore, and proper medical attendance, the better for its own credit and reputation for humanity.

But after reading the above who would embark on the *Atrato*?

AERIAL NAVIGATION.

OUR friends of the Aeronautical Society will glory in the following morceau from San Francisco—of Californian celebrity. For our own part, we have some unhappy reminiscences of the *Eagle* of Kensington notoriety, so that had we ever an idea that man was designed by his Creator to become an aerial locomotive, we lost all faith in such an opinion long ago.

THE AVITOR.—This is the name of the new air ship, now nearly completed in San Francisco. A well known and practical mechanic of that city has given a favourable report of the *Avitor* to the office of the Aerial Steam Navigation Company, and from it we glean the following. He says:

As regards the probable velocity of the *Avitor*, I would say nothing. Once afloat, and I can see nothing to hinder its floating; it is merely a question of resistance. For an invention so novel, the *Avitor* has met with comparatively few practicable obstacles; and when it is remembered that the difficulties in the way of Fulton's experiment were much greater than those that have kept back the *Avitor*, and that the principle is in both cases equally sound, it will be seen that there are good reasons for the belief that the machine, with the modifications referred to, will yet successfully navigate the air. The experiments with petroleum as a steam generator, which no doubt will be successful, will furnish a compact and light fuel for generating steam. After the *Avitor* has been floated, there may be some changes of the propelling machinery suggested, but, ultimately, it must be a success.

In addition to the above, we give the opinion of Peter Donahue, Esq.

I have followed with great interest, and have personally observed the construction of the *Avitor*. I am so thoroughly convinced of the practicability of the enterprise, and so entirely concur in the foregoing observations respecting the two modifications to be adopted, that I have no hesitation in saying that when these changes are made, the *Avitor* will answer all the purposes of the inventor, and fully realize

the expectations of the public. As soon as the elevating power shall, in this way, have been perfected, the work will be completed, because the propelling force is ample, the machinery for elevating and depressing sufficient, the steering apparatus in fine working order, and, in short, the whole of the *Avitor* is fully under the control of the operator.

THE ETHNOLOGY OF ABYSSINIA.

THE ordinary monthly meeting of the London Ethnological Society was held last evening at the rooms of the society, St. Martin's-place; Mr. J. Crawford, president of the society, occupied the chair; and among those present were Sir H. Rawlinson, Dr. Beke, Sir Alexander Waugh, Mr. Wyld, M.P., Captain Sherrard Osborn, Dr. Lockhardt, Lady Franklin, Dr. Hyde Clark, Dr. King, and Messrs. Dickenson, Franks, R. J. Slack, and J. G. Major. After the usual routine business had been transacted,

Mr. Major, the secretary of the Geographical Society, read a paper prepared by Mr. J. Crawford, upon "The Ethnology of Abyssinia and the adjacent countries," founded upon the report of the late Mr. Plowden, consul in Abyssinia, made in 1854. In this report Mr. Plowden described the country as most productive, and the climate of the highlands of Abyssinia as very salubrious. The valleys, however, he stated, were at certain seasons rendered dangerous by fevers. The country combined mineral resources and tropical luxuriance with so much general salubrity as to prevent the risk of any great waste of European life. Little, however, had been done for the country by energy or skill, and the utter want of roads and bridges, the stagnant or lawless nature of the social customs, the obstinate attachment to ancient usages and manners, the multitude of rulers, indifferent to anything but their own enjoyment, the constant wars and consequent insecurity of life and property, were fast ruining it. The members of each tribe had different peculiarities, but the general characteristics of the whole people were thus described by Mr. Plowden—"In some respects they are a happy people. They possess in their own land all the necessaries and many of the luxuries of life in profusion; they have great freedom of speech and action, and are always gay, systematically, as by constitution. Their conversation, often sensible, is always witty. A practical philosophy leads them to prefer laughter to tears; the tragedy and comedy of life are received alike with indifference or a joke. Misfortunes and death are generally met with fortitude. It is hard to convince them that they will benefit either by our science or our wealth. The most curious point in their character is this, that no one is expected to feel ashamed of any crime or vice; and whereas in other countries men in committing serious crimes are morbidly excited, in Abyssinia they are perpetrated with indifference,

and generally recounted, sometimes by the individual himself, certainly by others, with gaiety and laughter. In the same way, females are rarely gross or immodest outwardly, seeing that they need in no way be ashamed of the freest intercourse with the other sex. I have never yet been able to discover what an Abyssinian could be ashamed of, except a solecism in what he considers good manners, or the neglect of some superstitious form of social observance. They are peculiarly sensitive, however, to ridicule and abuse, whether true or untrue, and half the time of an Abyssinian master is passed in deciding disputes on such subjects. Some traits, though apparently of slight consequence, are often very irksome to a stranger; for instance, every man above the lowest rank as a door-keeper, whose duty it is to examine who should be admitted and when. The insolence of this officer rises in proportion to the rank of his master. The primitive ante-chamber is a court in the open air, without seats, often muddy, always filthy; and as the porter will contrive to keep you waiting, even against his master's orders, this system is most disagreeable to a European. Further, you wait amongst a crowd, and it is pointed out to you that the brothers or sons of the King are there in the same position. Sometimes the order comes to clear the court, when sticks are used without distinction of persons." Further he said:—"They have in general an aversion to change in their religious observances, laws, and customs; their ancient laws are, however, nearly forgotten, and their manners are changing yearly.

"This, which is characteristic of the race, is a great obstacle to improvement. Neither the idea of progress nor the word exists; for all absurdities and abuses, even for injustice, the reason 'it has always been so' is held sufficient even when the error is admitted. In consequence, as nothing can be stationary, their whole institutions are degenerating. They are very quick of apprehension and subtle of speech, and as from childhood they are accustomed to select phrases that may be agreeable to the person they are addressing or useful to themselves, are always specious and sometimes eloquent. It is very difficult for a stranger to arrive at the truth by questions. They are fond of litigation, and most of them skilled in the quibbles and proverbs that are essential to success in any dispute. It is the favourite sport of boys and children, and the smallest difference of opinion furnishes matter for a long and sometimes expensive lawsuit. Their obstinacy in trifles is a mark perhaps of their Jewish blood. Notwithstanding the abundance of food in Abyssinia, nothing is more difficult or occupies more time than to provide for the daily wants of an establishment. A chief can obtain anything at once, and often without payment, where a stranger infinitely richer would, without his friendship and assistance, run the risk of starving.

Nothing can be obtained by money except at a market, and often at a very great distance. Shops are unknown, and almost all trades must be practised in each household. Water must be carried for household purposes from a distant brook, corn must be converted into flour, cookery must be prepared, bread baked, and beer brewed in every es-

establishment according to its numbers, and to no office of domestic utility will a man put his hand for any amount of hire. On a journey where no markets can be found all necessaries must be carried at least to the next large town, involving a very inconvenient amount of baggage." * * "Individually they are brave, but in masses, being without discipline, are hesitating, and little to be feared. Having no coinage of their own, the only money that passes current in Abyssinia is the German crown Maria Theresa. This is changed in Teegre, into pieces of cloth of various lengths, fabricated from cotton of the country or of India; and in the Amhara into blocks of salt, vary in number at each market-place. This salt is cut in the plains of the Taltal, near the Red Sea, and transported far into the interior. It becomes very valuable in the Galla provinces, where eight small pieces are sometimes exchanged for a dollar, and a hundred will purchase a slave. Gold, which under their emperors was used as a currency by weight, and was abundant, according to tradition has now almost disappeared. The ruler of Shoa sent some pounds of fine gold to the court of Gondar, moulded in the shape of a mule, in token of fealty. The custom was continued till the last forty years.

The whole dress of the people is of white cotton cloths, spun and wove in the country, nor do they consider a foreigner as dressed at all unless he throws one of their white mantles over his own apparel. It illustrates curiously the character of this nation, so vain and stubborn in trifles, to see the servants of even a well-dressed European follow him almost with shame, and the rest of the populace regarding him with laughter or sneers; nor is this a small matter nor a trifling difficulty. The first impression does much, and ridicule is harder to vanquish than persecution. Socrates, in our modern attire, would scarcely be respected in Abyssinia. There are no castes in Abyssinia, but the people may be divided into four classes—military, sacerdotal, agricultural, and mercantile; the number that cannot be included in these is insignificant—a few workmen, as tanners, saddlers, and blacksmiths, disproportioned even to the wants of the community, and some idlers who live by the produce of their farms.

The great chiefs have generally much dignity of manner, and some of them might be models of tact and polite suavity, particularly those who have any pride of ancestry: but engrossed with the sensual pleasures afforded by their wealth and power, and uncertain how long they may enjoy them, they never dream of improving the condition of their subjects, though often just and indulgent in their rule, as far as the paramount necessity of conciliating their armies will permit." The character of King Theodore, or as he was then called Dejjaj Kasai, was thus drawn by Mr. Plowden:—"Dejjaj Kasai is vigorous and subtle, daring to a fault, and, perhaps, more disposed to innovation than any. He has abolished in his army the practice of mutilating dead bodies; taught his soldiers some discipline, makes war without baggage or camp followers, and encourages foreigners. Though proud, his manner is all humility; he is severe, liberal, and usually just, but breaks out now and then into unaccountable acts of violence, which

indicate a somewhat unsettled temperament; he commences enterprises with more vigour than he pursues them, and is much under the influence of prophets and fortune-tellers."

Mr. Crawford, in his paper, made some general comments upon the consular report, and summed up the whole matter by declaring his opinion that "we must come to the conclusion that, although the Abyssinians are very old Christians, they are but very indifferent ones, and that in civilisation and morals they rank below most of the nations professing Mahomedanism, Hinduism, and Buddhism."

The paper was listened to with great attention, and at its conclusion there was some applause. In the course of a short discussion which followed,

Sir H. Rawlinson expressed his confidence in Mr. Plowden, as the best authority upon Abyssinia as it existed in his time, but reminded his hearers that during thirteen years which had elapsed since the date of his report there had been many essential changes in the circumstances of that country. King Theodore had abolished Mahomedanism, had secularised the church property, and had crushed the priestly influence, which in the time of Mr. Plowden was one of the crying evils of Abyssinia. He had also introduced many useful reforms into the administration of justice, and had adopted measures for the encouragement of industry. As long as Plowden and Bell were alive he was to a certain extent a model sovereign, but since their deaths he had gone to the bad.

Dr. Beke said that Mr. Plowden's account of the Abyssinians was, as far as it went, the best that he knew; but it had some faults. Mr. Plowden did not visit the best provinces—the southern provinces—and therefore could not report of them. He knew the Amharas and the Fegrees, but he did not know the Gallas. King Theodore, he said, was from the first an arrant villain. He was made a great man and a good man by Bell and Plowden, but the moment they died he became bad. As long ago as 1852 he was an arrant drunkard, and used to fire under the table at the legs of his guests.

Both Sir H. Rawlinson and Dr. Beke made some observations upon the races and languages of Abyssinia, and after Mr. Crawford had replied upon some points upon which he differed with them, the proceedings closed with the customary vote of thanks.

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Royal National Life-Boat Institution.

INCORPORATED BY ROYAL CHARTER. SUPPORTED BY VOLUNTARY CONTRIBUTIONS.

Patroness—Her Most Gracious Majesty the Queen.



“God help our Men at Sea.”

APPEAL.

THE COMMITTEE OF MANAGEMENT have to state that, during the first six months of 1867, the ROYAL NATIONAL LIFE-BOAT INSTITUTION has expended £13,862 on various Life-boat Establishments on the Coasts of England, Scotland, and Ireland. During the same period the Life-boats of the Institution have also been instrumental in rescuing the Crews of the following Wrecked Vessels:—

Schooner <i>Mary Talham</i> , of Chester.....	4	Barque <i>Chocoma</i> , of Sunderland—	10	Ship <i>Nor' Witer</i> , of Boston, U.S. . . .	5
Brig <i>Chase</i> , of Shields.....	5	Assisted to save vessel and crew . . .	10	Brig <i>Wellington</i> , of Aberystwith—	
Schooner <i>Misnah</i> , of Dartmouth.....	8	Sloop <i>Emma</i> , of Portsmouth—Saved		Assisted to save vessel and crew . . .	9
Barque <i>Aurora Borealis</i> , of Rebe . . .	10	vessel and crew	3	Brig <i>Mary</i> , of Workington—Ren-	
Sloop <i>Oliver Lloyd</i> , of Cardigan . . .	3	Sloop <i>Telegraph</i> , of Sunderland . . .	3	dered assistance.	
Smack <i>Turtle Dove</i> , of Aberystwith	3	Barque <i>Coquimbo</i> , of Sunderland . . .	15	Schooner <i>Mary</i> , of Lynn—Rendered	
Brig <i>Emanuel Boucher</i> , of Whitby . . .	6	Ship <i>Cameronian</i> , of Liverpool—		assistance.	
Smack <i>Coronation</i> , of Bideford	4	Saved vessel and crew	20	Fishing-smack, of Holy Island—	
Schooner <i>Trazer</i> , of Ipswich	1	Brigantine <i>Eclips</i> , of Londonderry . . .	1	Saved vessel and crew	4
Sloop <i>Skawrock</i> , of Liverpool	3	Schooner <i>Gratitude</i> , of Aberystwith	4	Brig <i>Ayrshire Lass</i> , of Ardrossan—	
French Schooner <i>Anemone</i>	5	Smack <i>Strider</i> , of Yarmouth—Saved		Saved vessel and crew	4
Schooner <i>Crew</i> , of Hull	2	vessel and crew	5	Royal Mail Steamer <i>Leinster</i> —Ren-	
Brigantine <i>Seraphim</i> , of Dunkirk . . .	8	Schooner <i>The Squire</i> , of Yarmouth . .	4	dered assistance.	
Lugger <i>Espor</i> , of Nantes	6	Brig <i>Sarah Ann</i> , of Jersey	6	Smack <i>Choice</i> , of Hull	3
Schooner <i>Salome</i> , of Brixham	6	Schooner <i>Mary Lewis</i> , of Aberyst-		Schooner <i>New Whim</i> , of Portsmouth . .	3
Schooner <i>Selina Ann</i> , of Looe	6	with		Brig <i>Americia</i> , of Genoa	14
Schooner <i>Heiress</i> , of Teignmouth . . .	6	Schooner <i>Deonia</i> , of Padstow	5	Ship <i>Blanche Moore</i> , of Liverpool . . .	36
Ship <i>John Gray</i> , of Glasgow	13	Barque <i>Loretto</i> , of Liverpool—As-		Brig <i>Spy</i> , of Jersey—Remained by	
Brig <i>Antares</i> , of Grifflswald	13	sisted to save vessel and crew	14	vessel.	
Schooner <i>Jeanne d'Arc</i> , of Nantes—		Barque <i>Centurion</i>	18	Brigantine <i>Union</i> , of Cowes	7
Saved vessel and crew	5	Barque <i>Wild Horse</i> , of Windsor, N.S.	10	Brig <i>William and Sarah</i> , of South	
Smack <i>Catherine</i> , of Barmouth—		Schooner <i>Mary</i> , of Dublin	3	Shields—Vessel saved.	
Saved vessel and crew	4	Brig <i>Harmony</i> , of Bideford	3	Schooner <i>Hope</i> , of Beaumaris—Saved	
Smack <i>Noah</i> , of Cardigan	2	Schooner <i>La Prudence</i> , of Algiers . . .	6	Vessel and crew	3
Schooner <i>The Clyde</i> , of Yarmouth . .	5	Sloop <i>William</i> , of Palmpool	6		
Schooner <i>Jane Ellen</i> , of Aberyst-		Austrian Schooner <i>Nicolo</i>	14	Total Lives saved by Life-boats, in	
with—Saved vessel and crew	5	Prussian Schooner <i>Louise</i> —Assisted		the first six months of 1867	443
Brig <i>Anne</i> , of Milford—Assisted to		to save vessel and crew	7	During the same period the Institution	
save vessel and crew	8	Brigantine <i>Estella</i> , of Preston—		has granted rewards for saving	
Barque <i>Maria Amelia</i> , of Quimper—		Saved vessel.		Lives by fishing and other boats	146
Assisted to save vessel and crew . . .	14	Barque <i>A. L. Routh</i> , of New York—			
Brig <i>Benton</i> , of South Shields	6	Saved vessel and crew	16	Grand Total of Lives	
Brig <i>Mary</i> , of Sunderland—Assisted		Schooner <i>Glyde</i> , of Killough	5	saved in Six Months	589
to save vessel and crew	8	Barque <i>Susan L. Campbell</i> , of St.			
Sloop <i>Persistence</i> , of Liverpool	3	John's, N.B.	14		

GENERAL SUMMARY for 1867 (to 30th June).

	£.	s.	d.
Number of Lives rescued by Life-boats, in addition to 19 vessels saved by them	443	..	..
Number of Lives saved by Shore-boats, &c.	146	..	..
Amount of Pecuniary Rewards for saving Life during the year	1,829	6	6
Honorary Rewards:—Gold and Silver Medals	9	..	..
Votes of Thanks on Vellum and Parchment	12	..	..
Total	21	589	£1,829 6 6

The Committee desire to express their grateful sense of the liberal support which they have received from the British public during the past few years, a support which has enabled them to establish their present great fleet of 181 Life-boats on the shores of the United Kingdom. Deeply sensible, however, of the great responsibility that rests on them to maintain their fleet in a thoroughly efficient state, and its crews practised in the management of their boats, which can only be effected by a large and permanent annual income, they earnestly appeal to all classes of their countrymen to continue to aid them in upholding and perpetuating so great and truly national a work.

The number of Lives saved, either by the Life-boats of the Society or by special exertions, for which it has granted rewards since its formation is 16,490, for which services 83 Gold Medals, 776 Silver Medals, and £25,360 in cash have been given in rewards. The Institution has also expended £179,478 on its One Hundred and eighty-one Life-boat Establishments.

Donations and Annual Subscriptions are earnestly solicited, and will be thankfully received by the Bankers of the Institution, Messrs. WILLIS, PEARCE, and Co., 76 Lombard Street; Messrs. CURTIS and Co., 59 Strand; Messrs. HARRIS, FARQUEAR, and Co., 16 St. James's Street, London; by all the other Bankers in the United Kingdom; and by the Secretary, RICHARD LEWIS, Esq., at the Office of the Institution, 14 JOHN STREET, ADELPHI, London.—August, 1867.

Royal National Life-Boat Institution.

(Incorporated by Royal Charter.)

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Deputy Chairman—THOMAS CHAPMAN, Esq., F.R.S., V.P.

Secretary—RICHARD LEWIS, Esq., of the Inner Temple, Barrister-at-Law.

LIST OF THE LIFE-BOAT STATIONS OF THE INSTITUTION.

ENGLAND.

NORTHUMBRIA —	
1	Berwick-on-Tweed. Holy Island. North Sunderland. Boulmer.
5	Almouth. Hauxley. Newbiggin. Blyth, No. 1. " No. 2.
10	Cullercoats. Tynemouth—No. 1. " No. 2.
DURHAM . . .	
	Whitburn. Sunderland.
15	Seaton Carew. Middleborough. Redcar. Saltburn. Runswick.
YORKSHIRE . . .	
20	Whitby. Uppang. Scarborough. Filey. Bridlington.
25	Hornsea. Withernsea. Donna Nook. Theddlethorpe. Sutton.
LINCOLN . . .	
30	Skegness. Hunstanton. Blakeney. Sheringham. Cromer.
NORFOLK . . .	
35	Mundesley. Bacton. Hasborough. Palling. Winterton.
40	Caister, No. 1. " No. 2. Yarmouth, No. 1. " No. 2.
SUFFOLK . . .	
45	Gorleston. Lowestoft. Pakefield. Kessingland. Southwold, No. 1. " No. 2.
KENT . . .	
50	Thorpe Ness. Aldborough. Margate. Kingsgate. Ramsgate.
55	North Deal. Walmer. Kingsdown. Dover.
SUSSEX . . .	
60	Rye. Winchelsea. Hastings. Eastbourne.

SUSSEX . . .	
65	Newhaven. Brighton. Shoreham. Worthing. Selsey. West Wittering.
HAMPSHIRE . . .	
70	Hayling Island. Chapman's Pool. Bembridge. Brightstone Grange. Brooke.
ISLE OF WIGHT . . .	
75	St. Samson's. Poole. Lyme Regis. Exmouth. Teignmouth.
GUERNSEY . . .	
DORSET . . .	
SOUTH DEVON . . .	
80	Brixham. Plymouth. Looe. Fowey. Falmouth. Cadgwith. Lizard. Mullion. Porthleven. Penzance.
CORNWALL . . .	
90	Sennen Cove. St. Ives. Hayle. New Quay. Padstow. Bude Haven.
NORTH DEVON . . .	
SOMERSET . . .	
WALES.	
GLAMORGANSHIRE 100 Penarth. Porthcawl. Swansea. (felly)	
CARMARTHENSHIRE Pembrey & Llan- Carmarthen Bay.	
PEMBROKESHIRE 105 Tenby. Fishguard. Cardigan. Newquay. Aberystwyth.	
CARDIGANSHIRE . . .	
MERIONETHSHIRE 110 Aberlloyv. Barmouth. Portmadoc. Porthdinllaen.	
CARNARVONSHIRE . . .	
ANGLESEY . . .	
115	Rhoscolyn. Holyhead. Cemlyn. Moelfre. Penmon.
CARNARVONSHIRE 120 Orme's Head.	
FLINTSHIRE . . .	
CHESHIRE . . .	
LANCASHIRE . . .	
125	Lytham.

LANCASHIRE . . .	
	Blackpool. Fleetwood. Piel.
ISLE OF MAN . . .	
CUMBERLAND . . . 130	
	Castletown. Whitehaven. Maryport. Silloth.

SCOTLAND.

KIRKCUDBRIGHT . . .	
WIGTON . . .	
AYRSHIRE . . . 135	
	Girvan. Ayr. Irvine.
ARGYLSHIRE . . .	
CAITHNESS-SHIRE . . .	
ORKNEY ISLANDS . . . 140	
ELGINSHIRE . . .	
BANFFSHIRE . . .	
	Buckie. Banff.
ABERDEENSHIRE . . .	
	Fraserburgh. 145 Peterhead. Stonehaven.
FORFAR . . .	
	Arbroath. Buddon Ness (Dun- Broughty Ferry) dec.
FIFESHIRE . . . 150	
	St. Andrew's. Anstruther.
HADDINGTONSHIRE . . .	
	North Berwick. Dunbar.

IRELAND.

CO. LONDONDERRY . . .	
ANTRIM . . . 155	
DOWN . . .	
	Grounsport. Ballywalter. Tyrella, Dun- drum. Newcastle, do.
LOUTH . . . 160	
	Dundalk. Drogheda.
DUBLIN . . .	
	Balbriggan. Skerries. Howth. 165 Poolbeg. Kingstown.
WICKLOW . . .	
	Wicklow. Arklow.
WEXFORD . . .	
	Courtown. 170 Cahore. Wexford. Rossclare Fort. Carnore.
WATERFORD . . .	
	175 Dungarvan. Ardmore. Youghal. Ballycotton. Queenstown. Courtmacsherry
CORK . . .	
	181 Valencia.
KERRY . . .	

The following are Extracts from the General Rules of Management:—

Each Life-boat to have a Coxswain Superintendent, with a fixed Annual Salary of £8, and an Assistant Coxswain, with a yearly Salary of £2.
 The Life-boat to be regularly taken adrift for exercise once every quarter, fully manned and equipped, so that the Crew may be familiar with her qualities and proper management. On every occasion of exercise, the men are to be paid 1s. each in stormy weather and 5s. each in fine weather; and on every occasion of going off to a Wreck to save Life, each man of the Crew to receive 10s. by day, and £1 by night. These payments to be doubled on occasions of extraordinary risk or long exposure.
 The Life-boat to be kept on her Carriage, in the Boat-house, with all her gear in her ready for use. Signals are agreed upon for calling the Life-boat's Crew together; and immediately on intimation of a Wreck, or Vessel in Distress, the Coxswain is to muster his Crew, who are to put on their Life-belts, launch his Boat, and proceed to her assistance.
 The Local Committee to make quarterly inspection, and report to the Institution as to the behaviour of the Boat during exercise, pointing out any defect that may be remedied, and offering any suggestion that may conduce to the efficiency of the service."

The expense of a Life-boat Station is £620. Its cost is made up as follows:—

Life-boat and her equipment, including life-belts for the crew and transporting carriage for the Life-boat	£420	Total	£620.
Boat-house (average cost)	200		

(The average annual expense of maintaining a Life-boat Station is £200.)

Royal National Life-Boat Institution.

Supported by Voluntary Contributions.

Patroness—HER MOST GRACIOUS MAJESTY THE QUEEN.

Vice-Patron—HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.

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Secretary—RICHARD LEWIS, Esq., of the Inner Temple, Barrister-at-Law.

Life-boat Inspector—Capt. J. R. WARD, R.N.

Assistant Life-boat Inspector—Capt. D. ROBERTSON, R.N.



A P P E A L.

THE COMMITTEE OF MANAGEMENT have to state that, during the past year (1866), and the first nine months of the present year, the ROYAL NATIONAL LIFE-BEAT INSTITUTION has expended £50,812 on various Life-boat Establishments on the Coasts of England, Scotland, and Ireland, in addition to having contributed to the saving of 1,680 persons from various shipwrecks on our coasts. Every winter that comes and goes has its black record of wrecks, and its terrible list of lost lives. How many would have been ready to give all the wealth they possessed last winter to behold a Life-boat putting off to their stranded vessel? Perhaps it was the first time that some of them had ever seriously thought of a Life-boat, and it was too late.

GENERAL SUMMARY OF THE WORK OF THE INSTITUTION DURING 1866 AND 1867 (TO 30TH SEPTEMBER).

Number of Lives rescued by Life-boats, in addition to 46 vessels saved by them . . . . .	..	917	£.	s.	d.
Number of Lives saved by Shore-boats, &c. . . . .	..	763	..	..	..
Amount of Pecuniary Rewards for Saving Life . . . . .	..	..	4,257	16	6
Honorary Rewards:—Gold and Silver Medals . . . . .	..	28	..	..	..
Votes of Thanks on Vellum and Parchment . . . . .	..	39	..	..	..
Total		67	1,680	4,257	16 6

The Committee desire to acknowledge with gratitude the liberal support which they have received from the British Public during the past few years,—a support which has enabled them to establish their present great fleet of 183 Life-boats on the shores of the United Kingdom. Deeply sensible, however, of the great responsibility that rests on them to maintain their fleet in a thoroughly efficient state, and its crews practised in the management of their boats, which can only be effected by a large and permanent annual income, they earnestly appeal to all classes of their countrymen to continue to aid them in upholding and perpetuating so great and truly national a work.

The number of lives saved either by the Life-boats of the Society, or by special exertions, for which it has granted rewards, since its formation, is 16,060; for which services 83 Gold Medals, 778 Silver Medals, and £25,498 in cash have been paid in rewards. The Institution has also expended £185,028 on its One hundred and Eighty-three Life-boat Establishments.

The expense of a Life-boat, its equipment, transporting-carriage, and boat-house, averages £620, in addition to £50 a-year needed to keep the station in a state of efficiency.

Donations and Annual Subscriptions are earnestly solicited, and will be thankfully received by the Bankers of the Institution, Messrs. WILLIS, PERCIVAL, and Co., 76 Lombard Street; Messrs. CURTIS and Co., 59 Strand; Messrs. HERRIES, FARQUHAR, and Co., 16 St. James's Street, London; by all the other Bankers in the United Kingdom; and by the Secretary, RICHARD LEWIS, Esq., at the Office of the Institution, 14 JOHN STREET, ADELPHI, LONDON, W.C.—October, 1867.

Royal National Life-Boat Institution.

(INCORPORATED BY ROYAL CHARTER.)

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Patrons—HER MOST GRACIOUS MAJESTY THE QUEEN.

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Deputy Chairman—THOMAS CHAPMAN, Esq., F.R.S., V.P.

Secretary—RICHARD LEWIS, Esq., of the Inner Temple, Barrister-at-Law.

LIST OF THE LIFE-BOAT STATIONS OF THE INSTITUTION.

ENGLAND.

NORTHUMBERLAND—
 1 Berwick-on-Tweed.
 Holy Island.
 " No. 2.
 North Sunderland.
 5 Boulmer.
 Alnmouth.
 Hauxley.
 Newbiggin.
 Blyth, No. 1.
 " No. 2.
 Cullercoats.
 Tynemouth—No. 1.
 " No. 2.
DURHAM . . . Whitburn.
 15 Sunderland.
 Seaton Carew.
YORKSHIRE . . . Middleborough.
 Redcar.
 Saltburn.
 20 Runswick.
 Whitby.
 Uppang.
 Scarborough.
 Filey.
 25 Bridlington.
 Hornsea.
 Withernsea.
LINCOLN . . . Donna Nook.
 Theddlethorpe.
 30 Sutton.
 Skegness.
NORFOLK . . . Hunstanton.
 Blakeney.
 Sherringham.
 35 Cromer.
 Mundesley.
 Bacton.
 Hasborough.
 Palling.
 40 Winterton.
 Caister, No. 1.
 " No. 2.
 Yarmouth, No. 1.
 " No. 2.
SUFFOLK . . . 45 Gorleston.
 Lowestoft.
 Pakefield.
 Kessingland.
 Southwold, No. 1.
 " No. 2.
KENT . . . 55 Thorpe Ness.
 Aldborough.
 Margate.
 Kingsgate.
 Ramsgate.
 North Deal.
 Walmer.
 Kingsdown.
 Dover.
SUSSEX . . . 60 Dungeness.
 Rye.
 Winchelsea.
 Hastings.
 Eastbourne.

SUSSEX . . . 65 Newhaven.
 Brighton.
 Shoreham.
 Worthing.
 Selsey.
 70 West Wittering.
HAMPSHIRE . . . Hayling Island.
ISLE OF WIGHT . . . Bembridge.
 Brightstone Grange.
 Brooke.
GUERNSEY . . . 75 St. Samson's.
DORSET . . . Poole.
 Chapman's Pool.
 Lyme Regis.
 Exmouth.
SOUTH DEVON . . . 80 Teignmouth.
 Brixham.
 Plymouth.
CORNWALL . . . Looe.
 Fowey.
 85 Falmouth.
 Cadgwith.
 Lizard.
 Mullion.
 Porthleven.
 90 Penzance.
 Sennen Cove.
 St. Ives.
 Hayle.
 New Quay.
 95 Padstow.
 Bude Haven.
NORTH DEVON . . . Appledore.
 Braunton.
 Ilfracombe.
SOMERSET . . . 100 Burnham.

WALES.
GLAMORGANSHIRE . . . Penarth.
 Porthcawl.
 Swansea. }elly.
CARMARTHENSHIRE . . . Pembrey & Llanelly.
 105 Carmarthen Bay.
PEMBROKESHIRE . . . Tenby.
 Fishguard.
CARDIGANSHIRE . . . Cardigan.
 Newquay.
 110 Aberystwith.
MERIONETHSHIRE . . . Aberdovey.
 Barmouth.
CARNARVONSHIRE . . . Portmadoc.
 Porthdinllaen.
ANGLESEY . . . 115 Llanddwyn.
 Rhoscolyn.
 Holyhead.
 Cemaes.
 Bull Bay.
 120 Moelfre.
 Penmon.
CARNARVONSHIRE . . . Orme's Head.
FLINTSHIRE . . . Rhyi (Tubular).
CHESHIRE . . . New Brighton, No. 1.
 125 Do. (Tubular) No. 2.
LANCASHIRE . . . Southport.
 Lytham.

LANCASHIRE . . . Blackpool.
 Fleetwood.
 130 Piel.
ISLE OF MAN . . . Castletown.
CUMBERLAND . . . Whitehaven.
 Maryport.
 Silloth.

SCOTLAND.

KIRKCUDBRIGHT . . . 135 Kirkcudbright.
WIGTON . . . Port Logan.
AYRSHIRE . . . Girvan.
 Ayr.
 Irvine.
ARGYLSHIRE . . . 140 Campbeltown.
CATHINESHIRE . . . Thurso.
ORKNY ISLANDS . . . Stromness.
ELGINSHIRE . . . Lossiemouth.
BANFFSHIRE . . . Buckie.
 145 Banff.
ABERDEENSHIRE . . . Fraserburgh.
 Peterhead.
 Stonehaven.
FORFAR . . . Arbroath.
 150 Boddan Ness. } Dun-
 Broughty Ferry } dee.
FIFESHIRE . . . St. Andrew's.
 Anstruther.
HADDINGTONSHIRE . . . North Berwick.
 165 Dunbar.

IRELAND.

CO. LONDONDERRY . . . Greencastle.
ANTRIM . . . Portrush.
DOWN . . . Groomsport.
 Ballywalter.
 160 Tyrrell, Dun-
 drum.
LOUTH . . . Newcastle, do.
 Dundalk.
 Drogheda.
DUBLIN . . . Balbriggan.
 165 Skerries.
 Howth.
 Poolbeg.
 Kingstown.
WICKLOW . . . Wicklow.
 170 Arklow.
WEXFORD . . . Courtown.
 Cahore.
 Wexford.
 Rosslare Fort.
WATERFORD . . . 175 Carrmore.
 Tramore.
 Dungarvan.
 Ardmore.
CORK . . . 180 Youghal.
 Ballycotton.
 Queenstown.
KERRY . . . 183 Valentia.

The following are Extracts from the General Rules of Management:—

" Each Life-boat to have a Coxswain Superintendent, with a fixed Annual Salary of £8, and an Assistant Coxswain with a yearly Salary of £2.

" The Life-boat to be regularly taken afloat for exercise once every quarter, fully manned and equipped, so that the Crew may be familiar with her qualities and proper management. On every occasion of exercise, the men are to be paid 5s. each in stormy weather, and 3s. each in fine weather; and on every occasion of going off to a Wreck to save Life, each man of the Crew to receive 10s. by day and £1 by night. These payments to be doubled on occasions either of extraordinary risk, or of long exposure.

" The Life-boat to be kept on her Carriage, in the Boat-house, with all her gear in her ready for use. Signals are agreed upon for calling the Life-boat's Crew together; and immediately on intimation of a Wreck, or Vessel in distress, the Coxswain is to muster his Crew, who are to put on their Life-belts, launch his Boat, and proceed to her assistance.

" The Local Committee to make quarterly inspection, and Report to the Institution as to the behaviour of the Boat during exercise, pointing out any defect that may be remedied, and offering any suggestion that may conduce to the efficiency of the service."

PATENT PRESERVED POTATO,
(EDWARD AND CO.'S PATENTS.)

F. KING AND SON, late EDWARDS AND CO.,
SOLE MANUFACTURERS.

Twenty years test in all parts of the world has proved that this economical and pure Vegetable keeps good in all Climates, and is a preventive of Scurvy from the use of Salt Provisions. It is cooked in TEN MINUTES, producing a dish of Mashed Potatoes at less than a halfpenny per ration of half a pound, and does not occupy one sixth the space of other potatoes.

Capt. Sir F. L. M'Clintock, R.N. Commander of the Arctic yacht "Fox," writes: "For long voyages they are INVALUABLE, and contributed more to the health of my crew during the twenty-seven months of our absence from England than any other article of diet on board. Besides which, they were greatly relished by the seamen. Some that we used had been taken out and deposited in a house at Beechey Island in 1854; we found these to be quite sound, and not distinguishable from our own supply, embarked on board the 'Fox,' in '57."

This Patent Preserved Potato was supplied to H.M. Armies in the Cape, Crimean, Persian, Indian, and Chinese wars, the Mediterranean stations, etc.

Its great success having caused numerous foreign and other imitations to be offered, attention is requested to the celebrated Dr. Ure's opinion, "Messrs. Edwards' process is (chemically considered) the best possible." Purchasers should therefore expressly order this article, and see that the brass labels and red cases are marked "F. AND SON, late Edwards and Co.," who are the Sole Manufacturers.

Supplied by all Provision Merchants and Store Dealers, in 1 cwt., $\frac{1}{2}$ cwt., and $\frac{1}{4}$ cwt. cases; and Wholesale at

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MOST IMPORTANT TO SHIPOWNERS AND SHIPMASTERS.

A. WALKER AND SON, PATENTEES OF THE
LIVERPOOL PATENT LOG AND
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ADJUSTERS OF COMPASSES IN IRON SHIPS, STEAMERS, &c.,
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A. WALKER AND SON, Patentees of the LIVERPOOL LOG AND SOUNDING MACHINE, respectfully announce that, after official trials, ordered by the Lords of the Admiralty, have been approved and ADOPTED BY THEM FOR THE USE OF H.M. NAVY. They may be used in the roughest weather, with as little care and fear of damage as the common Lead.

DENT'S

Patent Fluid Ship and Boat Compass, WITHOUT AIR BUBBLE.

The attention of Ship Owners, Boat Companies, and others, is solicited to the improvements made in these Instruments by the late E. J. DENT and F. DENT.

These Compasses are approved of by the Lords Commissioners of the Admiralty, and are in general use in the Royal National Life-Boat Institution, thus giving assurance of their decided superiority.

H.M. Steam-vessel *Vivid*, Woolwich, 18th April, 1854.

SIR,—Having had your Fluid Compass under trial on board H.M. Steam-vessel *Vivid* under my command, since January last, it affords me great pleasure to inform you that I have found it, without exception, the very best compass I have ever witnessed.

Notwithstanding the quick motion of the *Vivid* during the heavy winter gales of the last three months, under the most trying circumstances, it scarcely, if ever, vibrated a point, when the other compasses were vibrating from 6 to 8 points.

It was also remarkable that in calm, foggy weather, it was equally true and sensitive, which is a quality seldom before known in fluid compasses; and your admirable plan of having a constant supply of liquid to replace any evaporation, or air bubble, to which these compasses have hitherto been subject, renders yours so perfect that I have no hesitation in recommending them for all vessels, whether under steam or sail.

Wishing you every success,

Believe me, Sir, your's very faithfully,

F. Dent, Esq., Strand, London.

LUKE SMITHETT, Commander.

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For Chronometers, in which the inertia is so varied as to approximate nearer to the varying tension of the Balance-Spring than could possibly be accomplished by the ordinary Compensation-Balance.

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