

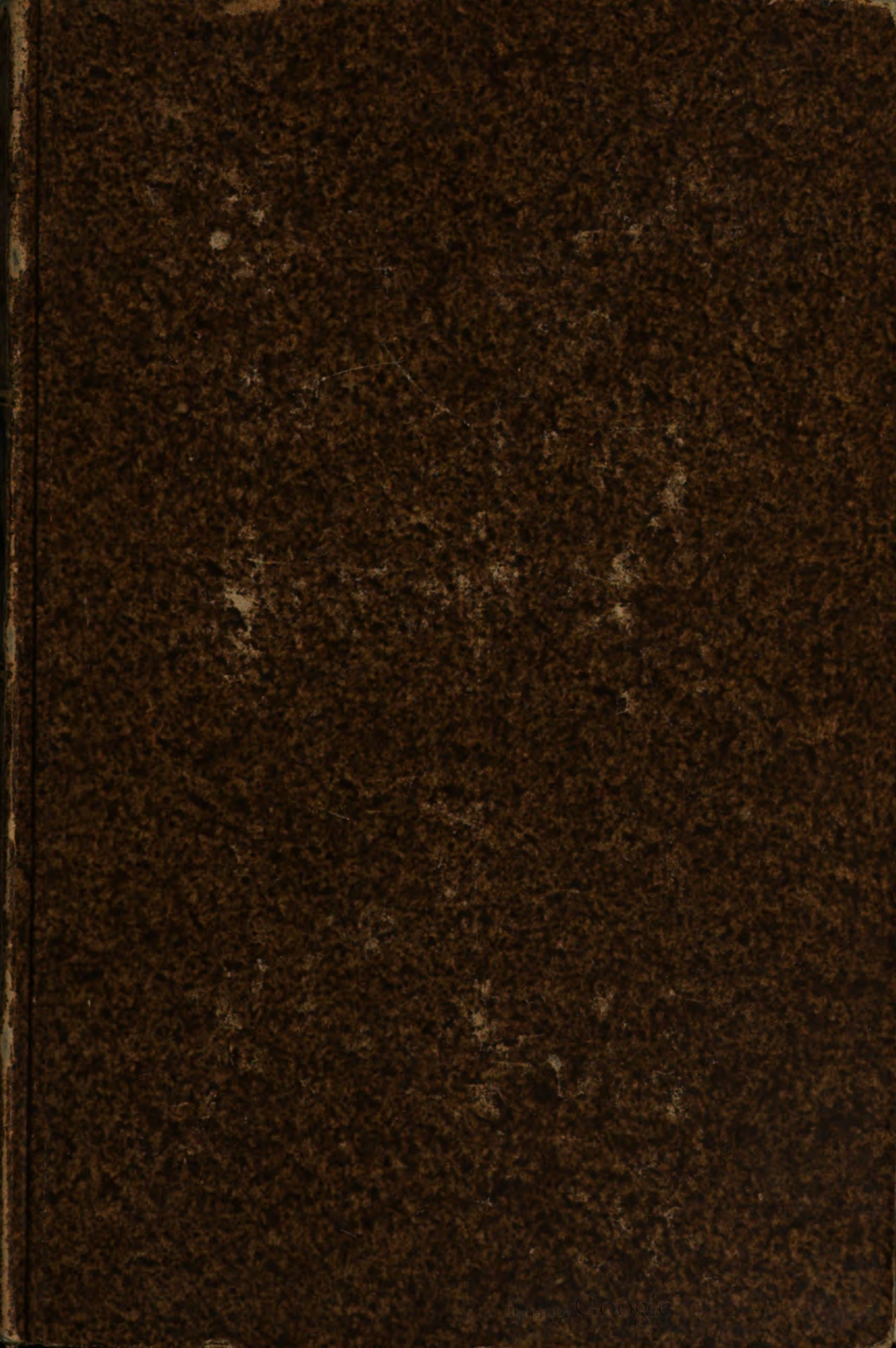
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FOR 1869.

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ON SUBJECTS CONNECTED WITH

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THE  
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NAVAL CHRONICLE.

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JANUARY, 1869.

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OUR MERCHANT SHIPPING.

*Recommendations useless ; a scale of ships' provisions required. Scurvy found in Liverpool or Scotch ships but not in those of London.*

SIR,—Sailors, perhaps I ought to say merchant sailors, as a class, are not fond of writing, at least public writing. Invidious people will say, perhaps, with much truth,—“ that we are not educated sufficiently, that we can't spell, and that we ought to go back to school before we aspire to write in a magazine or a periodical, with the view of telling our fellow-men something which may be useful.” This I concede would be an essential point were we writing to a review, or similar critical periodical. But to our professional magazine, the case is materially altered ; for here, the method and style of our writing is a very secondary consideration : the facts being the primary ; and, I say it is to be regretted that we do not get an infinitely greater interchange of ideas through the medium of our professional magazines, and especially our old established *Nautical*. I repeat, Mr. Editor, that such a state of things is to be deplored, because I know there are hosts of good clever men in the Mercantile Marine, and every one very likely able to tell us something professionally which would be good and useful for us to know.\* It is not even necessary to be very clever or highly intelligent to do that, because I am of opinion that our intellects, and the ideas generated therein, are something like our faces, no two in the whole universe absolutely alike, and so it is with the conception of our duty in and practice of our profession, both of

\* Our next number will contain a paper exactly in point, one not the production of a great scholar, but an observant seaman, all that we desire.—ED.

which are at times as different as possibly can be imagined, and yet such opposite views and opinions are held by equally intelligent men. Now, sir, if we could induce a far greater number of these men to come forward and give us the result and benefit of their experience and practice, professionally we should be gainers, and I think it even possible that should you find you get abundance of such material, perhaps you might give us a few more pages for our shilling, and I believe we should feel grateful. Let them not be deterred by a doubt whether they may be able to write well or even to spell, because have we not you, Mr. Editor, as captain of our literary endeavours to see that what we have to say or tell shall be spelt properly, and put into proper trim before it appears publicly.

Well, after this preamble dare I venture to presume that I have something to say which may be useful or instructive. I will try, and its origin comes from our new "Lime-Juice Act."\* I have just made the voyage under that act, and I beg to say the new lime-juice is so utterly unlike anything we have hitherto been receiving in the Merchant Service that it is difficult to conceive it possible there should be two fluids so different and yet bear the same name. It is quite a pleasure to drink it, and were it not that I believe you would prefer a glass of sherry, Mr. Editor, I should like to send you a bottle just as a sample. But there again the customs would stop it in transit because it can only be "drunk on the premises," that is to say at sea; so you will have to take my word for it, and as the Scotchman would say, "it is vera nice, vera nice indeed," and as a humble member of that community for whom it has been ordered, I beg to tender my grateful thanks to all those kind and philanthropic gentlemen, and especially to the surgeons of the *Dreadnought* hospital on the Thames, who have laboured so zealously and successfully to procure and obtain good lime-juice.

Now the purport of my few words is not so much about lime-juice, as about that dreadful scourge *scurvy*. As a sailor of some experience I say *scurvy* is a disgrace to the shipowners of Britain, for it hardly requires the medical men to tell us that the disease is absolutely preventible, and that without trouble or expense, and moreover (using an expression I once heard from an old London Pilot), "if I were government but for one month" I would rid British ships of *scurvy* by strong but necessary measures, one of which would be a fine of fifty pounds on the *shipowner* for every seaman landed in Britain suffering from the disease. I repeat, fine the *shipowner*, because I maintain the remedy lies with him in ninety-nine cases out of the hundred.

We do not hear of *scurvy* in the Navy, or in the ships of the best London firms, and I stake my truth and worth on the issue, that if a commission of inquiry was instituted with regard to the ships in which *scurvy* was found, I venture to say that for one London ship in

\* We trust that these observations will not be lost on our shipmasters, who have the remedy in their own hands.—ED.

which it is present, there will be found two or three Liverpool or Scotch ships, and here lies the root of the inquiry. Wherefore should this be? If we can prevent it in London ships, why can't it be done elsewhere and in every ship.

I will proceed to give a reason, one which I have not seen publicly announced anywhere, but nevertheless one which I think is sufficient to account for the difference in the two classes of ships, indeed, fully to account for the presence of scurvy in any ship. But before doing so, I have to regret that it is necessary to bring some personality into the subject, which I had wished to avoid, but which I hope will prove my argument.

I have been twenty-four years at sea, eight of which were served in Liverpool and Scotch ships, twelve years with D. Dunbar and Sons, and four years with another London firm, and I here assert that in the London ships I never saw a single case of scurvy, but on the contrary, during every voyage made in a Liverpool or Scotch ship we *always* landed two or more men badly afflicted with that disease;\* and it seems that though London ships are free, Liverpool and Scotch ships are not. All the voyages were very similar, principally to India, China, and the Australian colonies, and usually direct home again. In the period of eight years it was always so. There was not any material difference in the scale of provisions supplied at sea in all the ships—but—in the foreign ports there was a marked difference, thus:—In those ships belonging to Liverpool or Scotland in which I served, it was the custom to issue to each man, two pounds fresh beef daily, and *no* vegetables except a small quantity to make the soup. In the London

\* On this subject we meet with the following in a recent number of *Mitchell's Maritime Register*:—

LIME AND LEMON JUICE.—From a return just issued it appears that 147 British ships were reported to the Board of Trade, as having left the United Kingdom between January 1st and June 30th, 1868, without being provided with lime or lemon juice from a bonded warehouse, as required by the Merchant Shipping Act, 1867. Annexed is the following statement showing the steps taken by the Board of Trade on these cases of infringement of the Act being reported to them:—"The steps taken by the Board of Trade, on the cases of infringement of the Act were, to call upon the owners at once for any explanation which they might be able to afford; and as it appeared that the non-compliance with the Statute in the large majority of cases did not arise from any wilful default, the Board thought it sufficient to caution those Owners whose explanations were not thoroughly satisfactory. In no case was it thought necessary to institute legal proceedings. No case to which the Merchant Shipping Act, 1867, is applicable has yet been reported in which it has been shown that the Crew have suffered through the want of certified lime or lemon juice; but if such a case should be reported, the Board of Trade propose to institute proceedings against those who may have failed to comply with the provisions of the Statute."

The avowed principle of proceeding against any of those ships, or rather their owners only *in case* of their having had scurvy on board, is clearly an admission that, any ship may disregard the Act of Parliament at pleasure, and will escape consequences unless she has not escaped scurvy. Such cases are to be proceeded against. Thus the act becomes a half measure. Not to prevent the disease from being in the ship altogether, but to fine the owner if it be. What defence is this of the merchant seaman from scurvy? Clearly none at all!—ED.

ships each man received one and a half pounds fresh beef, and one pound yams or sweet potatoes daily, and likewise a quantity of vegetables to make the soup; and there, Mr. Editor, I contend is a full and sufficient reason why there should be scurvy in the one ship and not in the other. That pound of yams or sweet potatoes, is the very essence of health and life to the crew. And such is the direction, viz. : what is the diet of our ships while in a foreign and colonial port? that our commission of inquiry ought to take, and I have not the slightest hesitation in saying, that in six months or less, the cause of scurvy, or rather, how it appears in different ships, would be clearly and satisfactorily shown and a remedy at once found. To me, and doubtless very many others, the cause has long been evident, and I am willing to pay my fine of fifty pounds, as a practical illustration of my sincerity and belief if scurvy is found in the ship I command, provided I have my owner's sanction for my own remedy.

Of course I have not selected Dunbar's firm as an example, *par excellence*, because I believe a similar practice pertains in Green's, Wigram's, Smith's, Marshall's, and many others, indeed it is invidious to particularize any firm, because I may say it is a general London practice, and I question much if a case of scurvy ever appeared in any of the ships belonging to those firms I have mentioned, and doubtless if Captain H. Toyne were to give us his experience about scurvy, his well known name would corroborate my assertions, which at the present moment, will be called by many mere assertions without proofs.

What we really do want is a scale of victualling for harbour use, inserted in the Articles of Agreement, and it is a very remarkable fact that up to the present time no such scale has ever been issued by the Board of Trade. It is true a circular was put forth dated September, 1866, "*recommending* while in port a full supply of fresh vegetables, as may be most easily procured, viz. :—potatoes, greens, radishes, water-cresses: the latter vegetable is a powerful anti-scorbutic and easily procurable; fruits, as oranges, lemons, limes, shaddocks, etc." But instead of "*recommending*" the order ought to be made imperative; not recommended, but made a veritable part of the ship's articles of agreement, otherwise it is practically inoperative and useless, as recommendations generally are. I fancy I see a captain inserting an item of disbursements for oranges, shaddocks, etc., for his crew while abroad because they are *recommended*; and I also fancy the owner drawing his pen through it sharp, and our humane master who had obtained them on *recommendation* having to pay for his benevolence. No, sir, it will not do to *recommend* such nice things for Jack: they must be *ordered* if he be really to have them, and we must agitate the subject until we get it introduced into our Mercantile Marine Law, so that our absolute necessities of life shall not be left to the tender mercies of shipowners, the majority of whom care infinitely less for their sailors than they do for their dogs and horses!

There is another particular demanding our serious attention, and which was overlooked in the late amendment of our Marine Law, but

which I hope to see taken up by some charitable and philanthropic M.P., and agitated until it gets incorporated with the other necessaries to a sailor's existence. I allude to the QUALITY of our provisions, especially the beef and pork, and here I would again refer to Mr. Dunbar. When he died, the press criticized his character severely, especially in reference to the fact that he was uncharitable with his great wealth, and that his name seldom or never appeared against a charitable donation. Perhaps such was the fact, I know not anything to the contrary. But this I do know, that he fed his sailors well, and as for the quality of his beef and pork and ship's provisions generally, I have not seen them equalled elsewhere. In many cases I have seen very much inferior on board ships owned by firms, making pretensions to a higher standard of charity and benevolence than Duncan Dunbar!

I would desire no greater punishment for a shipowner who provides bad or indifferent food for his sailors, than to make him eat salt beef for two or three months of a quality which I have often had to *enjoy* for my dinner. There is legally no method of defining bad beef unless it smells badly, or to use a more expressive term—stinks—and it appears to be the practice with many shipowners, that so long as the beef or pork is free from smell, it is good enough for a sailor—no matter how old, how lean, how mahogany looking in character this beef may be, it is eatable, and will stand a legal test. But oh! Mr. Editor, when it emerges from the cook's coppers—*it is eatable!*—and so is leather! an old shoe! or a raw hide! all these are so called eatable by a hungry, healthy man, but infinite are the gradations from such stuff to prime mess beef. Simply because it does not smell Jack has to put up with it. There is no remedy practically, and we are left entirely to the generosity and humanity of our employers whether we get good or bad provisions.

In the matter of biscuit\* I believe the quality to be entirely left out of consideration by the majority, and it becomes the simple question, "how much per hundred weight? and, how it is made of flour at the price is a marvel to me. Moreover when it comes on board—how is it kept? About one-half will come in bags, the remainder in casks, which have been condemned for fluids and therefore not air tight, the consequence being that on the homeward voyage, and not unfrequently on the outward, the bread is full of weevils and maggots. Some liberal firms do provide iron tanks for the homeward passage, and the biscuit remains good, but there is no particular reason why it should not always be carried in iron tanks. Flour varies much in quality and would not, generally, dare to appear in a baker's premises. Tea and coffee in very many cases possess only the name. Sugar comes out perhaps best of all our stores, and I don't think we may grumble about that.

Good natured people on shore will tell us, why go in ships where

\* Biscuit in bags has been long since done away in the Navy: it is supplied in iron cases. Why should it not be so in Merchant ships.—ED.



there are bad or indifferent provisions? The answer to that is, the sailor as a rule is seldom or never in a position to choose or reject a ship as he might like. Witness the crowds of sailors surrounding the shipping offices of London and Liverpool, all of whom are eager to get shipped, and willing to sign to any scale of provisions whatever, and as for the quality of them, most likely the captain would be as much in the dark as the sailor, and should the latter ask if they were good, he would in all probability be rejected as likely to prove a troublesome fellow at sea. No, sir, much as I deprecate over legislation on the domestic affairs of merchant seamen afloat, in this particular case, it is absolutely necessary. We are totally unlike shore people in the matter of our food, inasmuch as where a person on shore directly or indirectly really purchases the food of which he partakes; and moreover if he finds that he has purchased indifferent articles at one shop to-day, he can try another to-morrow, and thus he has always his remedy. How different with us, we do not purchase ours, but we find it provided for us by persons who never do so without following the principle of endeavouring to get it as cheap as they possibly can. If it should prove to be good so much the better, but by all means it must be cheap.

There is another thing which is rather "calculated" to upset Jack's temper, shewing how little the government cares about him; and it is this:—Official surveys are held on the provisions supplied for all emigrants, troops, and convicts, in order to see that they get them of a good quality. This indeed is as it should be. But why in the name of common sense should the survey not extend also to the seamen's provisions, they are always a body of men outnumbering the others by ten or twenty times, and just as incapable of securing their own rights with regard to their food, and equally entitled to them as emigrants and soldiers are. I contend this is very unfair and a legitimate cause for discontent to the merchant seamen. The emigration commissioners themselves are well aware of this fact, because they require a clause in *their* charter parties, which will insure the sailor's provisions to be of equal quality with those of the emigrants. I may refer to Captain Henry Toynbee's recent lecture before the Society of Arts, for a detailed exposure of the practice of provisioning our ships, and many other things affecting the sailor's well-being. All honour to him for his untiring zeal and courage in labouring for their common good, and may his endeavours in so good a cause be crowned with success before long. While on the subject, I may mention another legitimate grievance of Jack's, and this although apparently trifling, is of more importance than it seems to be. This is the absence of an oil lamp in the fore-castle. In very many ships oil is not allowed, but a light is obtained from the beef or pork fat, technically called slush; which slush gives an abominably smoky, filthy, and dismal light, disgraceful to all British ships. I think this absolutely deserves a special place on all ships' articles likewise.

For the present I will close with some hope that others may give their opinions about scurvy, and those matters on which I have herein

lightly touched, with the view of bringing them prominently before the Board of Trade, and getting a proper remedy devised and secured. They are evils affecting a numerous and important class of British seamen, and it is but simple justice to let them be amended, and such complaints once for all remedied. And as that object can be best obtained through the medium of the public press, this method is thus somewhat imperfectly adopted here by your obedient servant,

QUOD VERUM TUTUM.

In as much as concerns our own work we fully agree with our correspondent's remarks. Why don't our shipmasters communicate more frequently with us. But it is to be hoped that the foregoing well founded complaints will be considered sufficiently important to claim the attention of the authorities, with a view to their rectification, for they are all of them sore places in a branch of our maritime service to which this country owes its great and rapid progress. If such sore places are allowed to pass by neglected they will fester, and ever bring down repeated and reiterated complaints on the government which permits them. Many abuses we know have been rectified as they have been pointed out, and the author of these having adopted this channel for making them known while he is far away, believes that his course is as effectual, and perhaps more so, than if he had addressed them to the fountain head. We trust his confidence in that course will not have been misplaced.—Ed.

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#### THE BRITISH FLEET FREE FROM LIGHTNING.

ONE of the sources of satisfaction to which we can look back, next to hydrography, in the progress of this work, and one which stands out as being of the most useful kind, is the part which it has taken in contributing towards the establishment of LIGHTNING CONDUCTORS for the ships of the Royal Navy. Such a reflection we say, always brings home the feeling that in the long and tedious course through which their inventor, Sir William Harris, had to go through, the numerous difficulties which he had to encounter from apathy, disbelief, ignorance, and prejudices, extending through many years until they became at length established, this journal was most heartily with him from the beginning to the end. In our volume for 1834, page 438, only the third year of its establishment, will be found drawings representing the mode of their fittings, even as they have been always fitted to the masts of our ships, from their very trucks to the kelson. In the March number of that year, appeared Sir William's first paper containing a string of cases, a few only from a great variety of others, which have since been published in our pages from several years previously down to modern times, shewing not only the serious loss to the country in absolute cash, but also the still more serious detriment

to the service (to use a mild expression) occurring from the circumstance of the ships thus disabled by the effects of lightning being obliged to return home from their stations for the purposes of repair, whereby not only were their services lost during the interval, but besides the expenses of repair, were also incurred those of the ship on her passage home and out again.

The volume of this work which is mentioned above teems with information on this important subject, and our subsequent volumes, nearly all, more or less give place to the reiterated papers of Sir William, shewing the advantage of applying his method to the ships of the Royal Navy. Meanwhile those of his friends who were favourable to his plan, who were convinced by his numerous illustrations given on a small scale at our United Service Museum, and the Polytechnic Institution in London, besides those at Plymouth, exerted themselves in parliament and elsewhere, until at length ignorance and prejudice were obliged to give way, apathy was overcome, disbelief was shaken before fact, and Sir William (or we should more properly say Mr.) Harris was permitted to fit his conductors to a few of our ships of the State. One of the shapes of opposition which prejudice assumed was the expense, which in a return even to the House of Commons of the cost of fitting them was made to appear about four times the real cost. This and much more appears in the pages of this work. But as ship after ship went abroad fitted with them, the destructive effects of lightning became less and less, and the last instance of a ship being struck occurred on the coast of Africa, which ship proved to be a solitary exception to the rest. She was the only one abroad that had not been fitted with the conductors.

Since that period numerous cases as was usual have occurred of our ships of war being struck, but no single instance of any damage whatever to them has appeared any where. Certainly no system of protection could have been more perfect than that invented by Sir William Harris, for that terrible, destructive agent of lightning which previously had its victims wherever our ships were found was now rendered harmless—it might come as it often does come and always will come—but its effects are innocuous. Sir William Harris's conductors were successful everywhere. We will here take a brief glance at the subject, and quote some passages from a paper in our volume for 1844, shewing the state of things that had been prevailing in all former days in the Royal Navy. The paper itself is at present interesting in these days when our ships are freed from the scourge, inasmuch as it takes an interval of war, and another of peace, and shews the great expense to which this country was put from the effects of lightning. In our May number, page 283, we read: "The total number of ships in our Navy, etc., on which lightning has fallen in an interval of years in various parts of the world amount to 210. They include 82 sail of the line, 78 frigates, 40 sloops and brigs, 3 steamers, 2 cutters, 2 sheer hulks, 3 ships in ordinary. Upon these cases there were damaged by lightning 162 lower masts, 129 of which were the lower masts of line of battle ships and frigates; of these upwards of 90 were completely ruined.

“Of topmasts there were ruined or damaged 140; of these, 106 were topmasts also of line of battle ships and frigates, nearly all of these were destroyed as masts.

“Of topgallant masts 120 were destroyed, of which number 92 were the topgallant masts of large class frigates. Besides this great destruction of material, the history of these cases presents a serious loss of life, upwards of 90 seamen having been killed, and above 200 severely wounded or hurt.”

This statement is alone sufficient to shew the great interest of this enquiry, considered as a statistical question. It cannot, however, be supposed to contain the total amount of damage done to our Navy by lightning, within the years over which the cases extend. It has been found very difficult from the little remaining record of such cases, to discover them, and when ascertained, to trace in the mass of manuscript journals of H.M. ships, an authentic account of the facts. Considering the great number of ships employed in the service of our Navy since the year 1780, or thereabouts; it is reasonable to infer from the frequent damage by lightning known to have occurred, that only a portion of the real amount has been ascertained.

By way, however, of arriving at something like a fair approximation within certain definite periods, it may not be amiss to select the cases which have been discovered from the commencement of the war, about the year 1794, up to its final close in 1815, and again from that period up to the year 1840; which present two periods of nearly twenty-five years each, one of war, the other of peace.

The following table exhibits the number of cases of ships of the Navy struck by lightning within these respective periods, so far as these inquiries extend.

TABLE 1.

WAR.				PEACE.			
Years.	Ships.	Years.	Ships.	Years.	Ships.	Years.	Ships.
1793	1	1805	4	1817	1	1829	2
1794	5	1806	6	1818	1	1830	6
1795	1	1807	4	1819	1	1831	2
1796	2	1808	6	1820	3	1832	3
1797	1	1809	6	1821	1	1833	1
1798	2	1810	5	1822	5	1834	2
1799	5	1811	14	1823	...	1835	2
1800	4	1812	16	1824	1	1836	...
1801	7	1813	9	1825	1	1837	4
1802	9	1814	9	1826	...	1838	6
1803	6	1815	6	1827	...	1839	4
1804	3	1816	2	1828	4	1840	5

The 133 cases in time of war, consisted of 69 ships of the line, 49 frigates, and 32 sloops and smaller vessels.

The 55 cases in peace, consist of 8 sail of the line, 14 frigates, and 32 sloops and smaller vessels, including two steamers.

The following table shews the amount of spars damaged or destroyed :—

TABLE 2.

WAR.					PEACE.				
Spars.	Liners.	Frigates.	Brigs.	Total.	Spars.	Liners.	Frigates.	Brigs.	Total.
Topgallant Masts ...	45	35	7	87	Topgallant Masts ...	6	8	22	36
Top Masts...	51	45	9	105	Top Masts...	7	9	23	39
Masts .....	56	52	15	123	Masts .....	6	13	14	33

Of these spars above five-sixths were either destroyed or rendered unserviceable; of the 123 lower masts in the war, and which were nearly all masts of line-of-battle ships and frigates, above two-thirds were rendered unserviceable, and the ships in most cases had to return into port to refit. Of 95 topmasts of ships of the line and frigates, 93 were quite ruined, and many of the topgallant masts were fairly shook to pieces.

Between the years 1810 and 1815 our Navy appears to have suffered considerably by lightning; within these years we have thirty-five sail of the line, 13 frigates, and 10 sloops disabled or damaged. We had in these years a large fleet at sea; and it appears that of 12 or 13 sail of the line off the Rhone no less than five line-of-battle ships were in September, 1813, more or less disabled on the same night. The *Ocean*, 90, one of the ships, was obliged to go to Mahon and shift her mast; within these years 34 lower masts of line-of-battle ships and frigates were either damaged or ruined.

The number of seamen severely hurt or killed in these cases is considerable. The instances within the period of war, contain above 70 seamen killed, and 158 badly hurt or crippled, 21 who sustained severe temporary injury, and a great many cases in which the numbers hurt are set down as several or many.

The most remarkable instances of loss of life are the cases of the *Repulse*, 74, *Sultan*, 74, *York*, 74. The *Repulse* lost the services of 20 men in an instant, 7 were killed on the spot, 3 died soon after, and 10 more were so severely injured as to be of little use to the service after. The *Sultan* lost 10 of her crew, 7 being killed on the spot. In the case of the *York* all the men on the maintop-sail-yard were either killed or hurt. The case of the *Sappho*, 18, furnishes also a remarkable instance of the loss of life by lightning. In this instance 10 men were killed outright and 14 badly hurt.\*

Besides these instances of loss of life we find very many cases in

\* Mr. Burnet, the carpenter of the ship, an intelligent seaman, has kindly furnished the Author with authentic accounts of this case, which are not fully given in the particular log referred to in the preceding papers.

which from 20 to 40 men have been struck down at the time of carrying on the duty of the ship. In the case of the *Cambrian* of 44 guns, all the men on one side of the deck were struck down. In the *Eagle*, 74, we find a similar occurrence, and the greatest consternation prevailed. In the case of the *Bellette*, brig, no less than 28 of the crew were struck down, whilst hauling in the head braces. And in the *Thunderer*, 74, in September, 1799, we find all the watch in the main-top paralysed, so that they were obliged to be lowered down on deck. Such cases evidently shew the great danger and inconvenience to which ships are exposed in consequence of the electrical discharge falling on the crew.

Of the 133 cases during the period of war, 30 ships at least, that is more than one-fourth of the whole, were set on fire in some parts of the masts, sails, or rigging, but without any serious result having ensued. The fire having been by the great exertion of the crew kept down and finally extinguished.

The damage which has occurred in these cases has generally taken place aloft, or on those parts of the hull approaching the surface of the sea; we find but few instances in which any considerable mischief has arisen to the body of the hull especially below the water line. It would appear by a review of these cases that not above one ship in twenty suffers any considerable damage in the hull. The most remarkable cases in these records are those of the *Bellerophon*, 74, *Squirrel*, 28, and *Chichester* cutter. In the *Bellerophon's* case, a butt-end of a plank in the ship's side was started, the clamps of the main-deck beam cut, and a rider underneath the deck split open. Some parts of the quarter deck also were perforated. In the case of the *Squirrel*, a plank was stove in the ship's side, and all the caulking loosened between the fore and main chains, so that the ship made eight inches of water per hour. In the case of the *Chichester*, the bulkheads and berths below were all smashed, and part of the deck actually lifted off the beams.

It is not easy to arrive at the full estimate of the loss to the country in money, on account of the damage to its Navy by lightning. For, independently of the calculation being a somewhat complicated one, the total number of cases cannot well be ascertained. We can only hope, therefore, for something like a fair approximation founded on calculations of the least amount of damage done in the cases which have come under our investigation.

Let us first direct attention to the damage done upon the 133 cases in the period of war, viz., between the years 1793 and 1816.

In estimating this we have to take into the account, the high price of material, the transporting spars and masts to foreign stations, expense of refit on those stations, etc. Now, it appears by official documents, that in the course of the last war, the lower masts of line-of-battle ships have cost from £800 to £1200 and upwards. That the contract for spars for top-masts have been so high as £200 each, other spars in proportion.

Taking, therefore, into the account these contingencies, together

with the quantity of rigging destroyed, expense of refit, etc., we may safely assume the following average values, as the cost to the country, by the time the different descriptions of masts specified were effectually replaced, taking one with another, and after making due allowance for the value of the damaged materials, wages, etc.

TABLE 3.

Line of battle ships:—	
Lower masts, including rigging, etc. ....	£1000
Topmasts, etc. ....	250
Topgallant masts ....	20
Frigates:—	
Lower masts ....	500
Topmasts ....	100
Topgallant masts ....	10
Sloops, etc.:—	
Lower masts ....	200
Topmasts ....	40
Topgallant masts ....	4

The reconvertible material in the cases of topmasts and topgallant masts struck by lightning cannot be considered as an item worth notice, since these have commonly been altogether ruined; hence, we have a higher proportionate estimate for these masts. Applying this estimate to the 133 cases above mentioned Table 2, we have

Liners:—	
38 lower masts (about two-thirds of whole) ruined	£38,000
51 topmasts ....	12,500
45 topgallant masts ....	900
Frigates:—	
28 lower masts (about two-thirds of whole).....	14,000
45 topmasts ....	4,500
35 topgallant masts ....	350
Sloops, etc.:—	
10 lower masts ....	1,000
36 topmasts and topgallant masts ....	700
	£71,950

If we add to this the expenditure on account of the remaining one-third of the lower masts damaged and other incidental expenses in making good defects, the whole amount would not fall very short of £100,000 upon these 133 cases only, and this would probably on a more severe inquiry be found within the actual loss to the country, since we have included in the basis of our calculations, and also in the above estimate, not merely the *first cost of material*, spars, etc., but also *every incidental expense contingent on a refit*.

Between the year 1810 and 1815, the country would not have

expended on account of damage done by lightning to the navy, a sum short of £45,000, or between seven and eight thousand per annum upon the cases which have been traced during that period.

But this is not the only kind of actual loss in money from this source of damage to our fleets, there is besides a sort of negative expenditure to be considered. Thus as observed in some former remarks on the subject.\*

Supposing a ship were wrecked, yet notwithstanding this, that all her daily expenses were continued, it is evident that this would be so much money expended in vain. But when a ship of war employed in the service of the country is placed for any given time *hors de combat* by lightning, she may be considered as being for that time of no more use than a vessel wrecked, and if the service on which she is employed be an important or critical one, she must be replaced by another. Now, the average expense of a line of battle ship is calculated at £100 per diem, frigates and smaller vessels in proportion. If this element therefore be considered, the money sunk on account of damage to our navy by lightning would amount to a very serious sum.

The propriety of this consideration becomes more apparent, when we take into the account the great inconvenience and expense attendant on sending ships into British or Foreign ports for refit; as for example, in the cases of the *Russel*, *Sultan*, *Theseus*, *Ocean*, and many others..

When we further reflect on the fact, that by such accidents the national interests may be placed in jeopardy,—that the loss of a ship, of a battle, of a colony, or of a great expedition is involved, we immediately see that the cost to the country is quite incalculable.

The preceding cases furnish some striking instances of this source of expenditure. Take for example the case of the *Glory*, 98, disabled just before meeting the combined fleets with the British fleet under Admiral Calder; of the *Theseus*, 74, obliged to leave her station on the blockade of Cape François; of the *Guerrière*, 36, damaged in her masts some time before her action with the large American frigate *Constitution*, of the *Duke*, 90, in which the mainmast and topmast were so shivered that the pieces covered the decks, and by which the ship was disabled at the time of the attack of *Martinique*. Take also several other cases involving similar consequences, as for instance, the *Kent*, 74, in 1811, off Toulon, *Cumberland*, 74, in September, 1810,—*Repulse*, 74, *Trident*, 64, *Lowestoff*, 36, *Ocean*, 98, which with four other line-of-battle ships on the blockade of Toulon were at once seriously damaged in a similar way; and two of the three disabled and obliged to return to port to refit.

\* This estimate it is to be remembered is not given as the mere value of the spars destroyed, but as a fair average expression of the actual cost by the time they were fully replaced, taking into account every incidental item, such as the rigging and sails destroyed, wages and expense of refit. The high price of spars and other materials at the time, and the supplying of masts, etc., to ships on foreign stations, etc.



In addition to such instances, we find whole fleets of Merchant shipping inconvenienced and detained; as in the cases of *Norge*, *Dictator*, *Thetis*, *Heron*, *Tamar*, appointed as convoy.

The number of seamen also killed or severely hurt, must be considered as another source of public expenditure on account of lightning, since pensions or provision in some shape is usually granted in such cases.

This discussion of the statistical details, therefore, furnished by the cases of damage to our navy by lightning during the last war of 1793, clearly shews, first, that the positive loss in about a twenty-three years' period of war, on account of material alone, has been at least from £80,000 to £100,000, or from £4,000 to £5,000 annually.

Secondly, that this average annual expenditure, has been very considerably increased by the expense and inconvenience contingent on the loss of the efficient services of our fleets and ships, and by the number of seamen killed or seriously hurt.

Thirdly, that although it is difficult to estimate with any degree of precision the amount of money sunk on this account, yet taking everything into the calculation contingent on the refit of the ship, and considering further that only a portion of the cases have been arrived at, the above sum, as is well known to those engaged in the Dockyard and Naval establishments, must be at least doubled, and it may be certainly concluded, that during the twenty-three years of war the country did not expend a sum far short of £10,000 annually, in consequence of damage done to its navy by lightning.

The second period of peace, and which also includes about twenty-three years, will of course be found to involve a far less amount, the price of material and the number of ships at sea, having been greatly reduced. Yet even during this period, some very considerable sums will be found to have been expended, and much inconvenience experienced. Thus, in the year 1830, on the 2nd of August, the *Gloucester* and *Melville*, two line-of-battle ships, were both disabled on going out of Malta after refit, and were both obliged to return and shift their mainmasts; and although required for the Mediterranean service at that time, they were both detained until the 7th of September following. Now, this could not have cost the country less than £3,000, since the topgallant and topmasts were shaken in pieces and the mainmasts ruined as masts. The *Rodney*, of 90 guns, again, in 1838, had her mainmast ruined in a similar way; two men killed and the ship set on fire, besides other damage. In little more than twelvemonths, about the years 1839 and 1840, the damage to our ships in the Mediterranean was considerable. At one time three line-of-battle ships, a large frigate (*Madagascar*), and a brig, were, except the last, all disabled. At another, two ships of the line, a large frigate in ordinary at Malta, three sloops, and a steamer suffered in a similar way. We had besides about the same year, two large class Revenue Cutters, the *Hawk* and *Chichester*, employed on our own shores in the service of the Revenue, so terribly damaged that they were literally obliged to leave their stations.

At another time in 1832, the *Southampton* of 50 guns, narrowly escaped blowing up in the Downs; and in 1828, two out of five of the squadron at Buenos Ayres for the protection of our South American trade, etc., were so disabled that convoys could not be granted for upwards of six weeks. The *Thetis* of 46 guns had great difficulty in obtaining new foremasts on that Station. The expenditure, therefore, even in the period of peace, must have been still considerable, and would not certainly, on a moderate calculation, in the way already given, amount to less than from £20,000 to £25,000 on account of material alone, which increased by other contingencies, would involve, at least, an average annual expenditure of £2,000 per annum on account of damage by lightning, even in the period of peace.

We have not hitherto made any mention of the probability of ships long since given up as lost, having directly or indirectly suffered by lightning, since it may possibly be objected that, such speculations come too far within the region of conjecture for the purposes of practical deduction. Nevertheless, this question should be not altogether discarded. The cases we have quoted from the logs of H.M. ships, sufficiently prove, that there is no kind of damage incidental to the perilous position of a ship on the sea, which may not arise out of the action of lightning, and with which she may not be suddenly and unexpectedly assailed:—we find, for instance, examples of ships set on fire, of loss of spars under critical and perilous circumstances, of serious damage to the hulls of vessels below the water line, by all of which a ship is liable to be burned, wrecked, or sunk. Take the case of the *Surinam*, 18, for example, in which a large piece of the shivered topmast stove in the deck, and destroyed the cabins beneath, and, in which the ship narrowly escaped being wrecked on a lee shore; so nearly that they fixed signals of distress, threw up rockets and blue lights for assistance. Had such wreck occurred, it is possible that no survivor would have been found to relate the cause of it. The *Russel*, 74, *Squirrel*, 28, and several others furnished highly instructive examples of these perilous circumstances.

About the close of the year 1820, a stroke of lightning fell on a French corvette, *deCoquin*, in Naples Bay, and struck a hole clear through the bottom immediately below the water line, so that if the boats of the British squadron, then in the bay, had not very actively assisted in cutting her cables and running the ship ashore on the Mole, she would have sunk in deep water, and perhaps, every one might have perished. Now, had this occurred on a dark night, at sea, far from land, this would have been a missing ship.

In the Merchant Navy the destruction by lightning is notorious; within a very few years the Merchant ships *Tanjore*, *Poland*, *Logan*, *Ruthelin*, *Bolivar*, *Boston*, *Lydia*, and *Sir Walter Scott*, have been all set on fire by lightning, and totally destroyed, together with their rich cargoes. The last named ship was burned, and *actually gone* within an hour after being struck.\*

\* Annual Register for 1834.

The liability to destruction by fire as a result of electrical discharge, even for a considerable time after its passage through inflammable bad conducting materials, is singularly illustrated in the cases of the *Dictator*, and of a Portuguese seventy-four, the *Principe Real*. In both these instances, the fire did not appear until some time after the ships had been struck. In the case of the *Dictator*, two days had elapsed, during which time the heart of the wood had been evidently in a state of inflammation. Hence, a vessel may become destroyed by fire in consequence of lightning, after all apprehension of such a result has subsided.

Supposing then, which is evidently not unreasonable, that some of our missing ships have perished in consequence of lightning, the estimated amount of loss to the country would evidently be considerably further augmented. This question is of such great importance, that it is a little surprising it should not have engaged the attention of the Committee appointed by the House of Commons to enquire into the various causes of shipwreck.

We shall conclude this discussion of statistical details by a brief reference to the disappearance of H.M. sloop *Peacock*, on the Coast of Georgia, in 1814, after a severe storm of lightning, as appears by the log of H.M.S. *Lacedemonian*. Admiral Jackson who then commanded the *Lacedemonian* has been so good as to furnish the Author with the following interesting communication relative to the loss of this ship.

In allusion to the fate of the *Peacock*, he says, "Having had a squadron of H.M. vessels under my orders in the year 1814, for the purpose of blockading the Coasts of Georgia and Carolina, H.M. ship *Peacock*, one of the number, was stationed off Wellington.

"On the afternoon of the 15th June, I communicated with the *Peacock*, and then made sail to the southward. About eleven p.m., the most terrific storm of thunder and lightning came on I ever witnessed. It was so truly awful, I thought the ship would be destroyed, all hands were sent below, except the officers of the watch, the quartermaster, and myself. At one a.m., it subsided, and being anxious about the safety of the squadron, I returned off Wellington, but we could see nothing of the *Peacock* on her station, and as there was no reason why she should have quitted it, I became apprehensive that some accident had occurred to her in the storm of lightning alluded to. We searched the coast for wreck of spars, and other materials, but not a vestige of the ship was found, nor has information been obtained of her from that day to the present moment. We sent flags of truce on shore on enquiry relative to the vestiges of wreck on the coast, but without any success. God only knows what her fate was, but from the effect of the storm on the *Lacedemonian*, there is no doubt left in my mind that the *Peacock* was destroyed in some way that night by lightning."

I have already pointed out very particularly the extremely dangerous position of the capstan in many of our eighteen-gun sloops, such as the *Peacock*, in which we find an iron spindle five feet long and six inches in diameter, *directly over the after magazine*; and immediately *under the magazine*, again we find the long metallic bolts and

fastenings leading through the kelson and keel into the sea, the most awful electrical condition which could be supposed, since the inflammable material is placed in an interrupted current between the detached metallic masses. Such a vessel as the *Peacock*, therefore, might readily be blown up by a heavy discharge of lightning passing in the direction of the capstan spindle, and would hence disappear, since the small fragments would be quite lost upon the wide waste of the ocean, and soon become dispersed.

The particulars of these events in former days, events happily no longer heard of now in the annals of our Navy, are so interesting in themselves, that we hardly know where to stop our hand in dealing them out of our own pages to our present readers. In our volume for 1852, a review was given by Sir W. Harris, of the history and progress of his system of permanent conductors as then "fully adopted into the public service," in which he gives some highly instructive details of the difficulties which he had met with from opposition, arising from ignorance and prejudice, throwing obstacles in his way, even to the substitution of inefficient and loose means of meeting the object effectually attained by his conductors; and we find Sir William expressing himself in our June number of that year, disappointed as he was, and disgusted as he must have been at the treatment he had received, and seeing the imperfect application of attempts to effect his object by ignorant pretenders who happened to be in office. In February, 1841, he was told that his plan was allowed to be "an ingenious and successful application of well known principles, but not entitled to any award, as for an original invention adopted into the public service," on which Sir William remarks justly enough, "as if every mechanical contrivance was not an application of well known principles." And then he instances the diagonal trussing for ships, seen on every farmer's gate in the country, but for which as applied to our ships, "a large sum of money was awarded." And thus he says "was the system of permanently fixed lightning conductors for Her Majesty's Navy, now (June, 1852) everywhere admitted as of the highest importance to the country, doomed for the time to succumb to authority in favour of inferior and objectionable (and he might have added inadequate and dangerous) means of defending the Navy from lightning; and the inventor denied all right to public consideration. And this was done in opposition to the views of the greatest scientific authorities of Europe, and directly in the teeth of a report from a naval and scientific commission, expressly selected by the Board of Admiralty itself, to investigate and report on the merits of the question."

There can be no doubt that Sir W. Harris was an ill-used man, and more than this, that our ships of the Navy were exposed to the same danger they had already been by the application of inferior means applied to them in the interval which followed. This however happily was not of very long duration, for in 1852 sufficient proof had been given by repeated instances of the inferiority of the means which had temporarily superseded Sir William's plan, the full efficiency of his

had forced itself on the authorities and became finally adopted. At what precise time, however, it was that this occurred we are unable to say, but believe it might have been in 1853, for we find ourselves thus giving expression to our sentiments on the whole subject in our March number of that same year. We then said,

“ Sir William Harris has very justly assumed that high credit to which he is entitled of having effectually protected the ships of H.M.’s Navy from lightning, the effects of which he has shown in the pages of this journal (previous to the application of his conductors), produced the most disastrous results among them in all parts of the world. Doubtless it was a bold, even an unprecedented step, to lead this destructive agent fearlessly through a ship of war, crowded with life, in the very midst of those well known combustible materials which are essential to her duties; and his plan was received as might be expected with prejudice. But the measure was founded on sound principles of science, and seeing that it had the support of such persons as Sir Humphrey Davy, Dr. Wollaston, and other leading practical men of the day, we at once accorded to him the assistance of this journal, to make known his theory and his plan for carrying it out in the defence of our Navy.

“ The result has fully rewarded our expectations: the loss of life, or the destruction of spars from the effects of lightning, is no longer known in the British Navy, and when a solitary instance did occur it turned out that the vessel had from some accidental cause not been fitted with the conductors of Sir William Harris. For our own part we congratulate most sincerely, not only Sir W. Harris, who has effected it, but our seamen and officers, as well as the country at large, who have benefited by this great achievement, in the successful application of scientific research to so important a purpose, the good effects of which at a critical moment it would be difficult to overrate.

“ And we look back at the course which we adopted, when Sir William Harris’s views were opposed by others who knew less of the subject than he did, with feelings of satisfaction approaching to exultation at the complete success which has crowned his exertions; rejoicing that while the avowed object of our pages is to warn the navigator of the hidden dangers which lie in his path, they have been also the medium of promulgating throughout the maritime world an effectual defence of his ship from another danger which has proved itself to be equally as fatal to him as the former.”

Such were our views in 1852 on the invention of Sir William Harris, for preventing the sad catastrophe of lightning from disabling our ships, if not producing their wreck, and killing and maiming our seamen. There has been scarcely a year gone by since that has not contributed its quota of proof to the soundness of the plan, the correctness of our expressed opinion.

It is somewhat remarkable that we have scarcely completed the foregoing remarks when a case of H.M.S. *Ocean*\* presents itself as

\* It is remarkable that another ship of war called the *Ocean* had to be sent home for refit in former days among others.

just having occurred in the waters of that distant part of the world Japan. We find it in the Maritime Register of Sir William Mitchell, and so apropos is it to our purpose that we shall here preserve it. It reminds us of many similar cases, but one in particular, the *Fisgard*, in that no less out of the way part of the world the north-west coast of North America, where the lightning seemed determined on annihilating the ship outright, and would most assuredly have done so but for the invaluable conductors of Sir William Harris. The account refers to H.M.S. *Ocean*, which it may be observed is an armour-plated ship of one thousand horse power, twenty-four guns and four thousand and forty-seven tons, one of the largest modern ships of war in Her Majesty's Navy, and we read thus:—

"The *Japan Gazette*, of August 31st, contains the following account of her Majesty's ship *Ocean* struck by lightning:—During the thunder-storm yesterday morning there was seen from the Bund a vivid flash of lightning, described by an eye-witness as the brightest by far of any he had ever seen; that, lasting some three or four seconds, seemed to play about the *Ocean* and the U.S. ship *Shenandoah*, and at last palpably burst. It was evidently quite close, for the thunderclap followed instantaneously. On inquiry, it proved that the flash had gone down the lightning conductor into the water, but was apparently most unwilling to leave the iron sides of the great armour plated *Ocean*. At length, on reaching the water, those on board tell us, it burst with a considerable noise—"like a hundred hand grenades" was one account, and another that it was "like a case of loaded rifles all going off together," and a shower of large sparks were pelted against the sides of the ship and all around. No damage was done, nor indeed, was any trace of the dread visitor discernable. The value of good lightning conductors was never more conclusively proved."

So says the account. But the same freedom from lightning as this has been common since Sir William Harris's conductors have been fitted to every ship of the Navy afloat, and this is but another to be added to the many instances on record of a ship saved to the Navy, and the expense of many hundreds of pounds saved to the state, and who can say how many lives? besides the loss of the services of the ship on her passage home for repair, etc. But there she was left by the destructive fluid unhurt.

The present century, says Sir William Mitchell, has produced few inventors to whom the country stands more deeply indebted than to the late Sir William Snow Harris. His prolonged investigations of electrical phenomena resulted in the discovery of a lightning conductor admittedly the most effective ever invented, and which has long since been adopted extensively on shore, and exclusively in the ships of the Royal Navy. Previously to the application of Sir William's discovery, the destruction of life and property at sea in Her Majesty's ships by lightning was something appalling. The records, in which the work of the destroying agent is described with terrible minuteness of detail, are easily referred to. From them it may be seen that ships seldom visited the tropics without suffering more or less from discharges of

electricity—visitations which too frequently resulted in loss of life or personal injury to some of the crew. Casualties of this nature, once so frequent, absolutely ceased with the application of Sir William Snow Harris's invention to the ships of the fleet. The invention, long since tested in every part of the world, has been singularly successful, and a ship fitted with these conductors may be said to be safe in the heart of any thunderstorm, however violent. Sir William lived long enough to see his invention fully adopted, though, like too many men of genius in this country, his difficulties may be said to have only commenced after he had satisfied his own mind of the truth of his discovery. He had to satisfy others, to overcome official ignorance and official prejudice, to convince men who were indisposed to be convinced, or incapable of comprehending a scientific argument. It is not strange, perhaps, that, to the very close of his life, Sir William should have been engaged in a controversy on such unequal terms. It was admitted—for it could not be denied—Sir William's conductors were an effectual safeguard for wooden ships, but he had to convince the Admiralty that his principle could be applied with equal effect to iron-clad vessels. We believe that the effort to carry conviction in this matter, and to vindicate his theory, cost Sir William much labour, anxiety, and expense. His arguments, it would seem, prevailed, and now we have a practical proof of their essential soundness.

In any other country, a discovery of the practical utility of that with which the name of Sir William Snow Harris is inseparably associated would have been rewarded by a substantial mark of appreciation. We regret to state that the treatment experienced by Sir William at the hands of the Government was throughout mean and parsimonious, and the spirit manifested towards him has been displayed towards his widow. During his lifetime the inventor of the lightning conductors now in use in the fleet was rewarded as a man might have been who had devised a new method of heaving the lead or casting the anchor, and at his death his widow is munificently provided for by a pension of £100 per annum! If we look to the Pension List we shall find far greater liberality displayed towards the wives and daughters of novelists—to say nothing of the handsome pensions granted to the widows and daughters of unsuccessful diplomatists, and others, who really created no claim whatever upon the liberality or gratitude of their country. But here is the author of an invention which has saved numberless lives, by rendering one of the great powers of nature, in its most destructive form, absolutely harmless. This great feat he accomplished with perfect success, and yet his life was embittered by a prolonged struggle with official routine, and his widow is doled out a miserable pension by the Government, which is receiving constant proofs of the paramount value of her husband's services. This should not be in a country like England. Invention is a rare gift, and when it is devoted to diminishing the risk of human life from the perils of navigation, the country is rich enough to act liberally, and to reward the inventor with a generous hand. That they have not done so in the case of Sir William Snow Harris, is but too well known, notwithstanding the

constant reminders which the authorities have received of the admirable efficacy of his invention.

In the foregoing extracts which we have made from our own pages, we have shown that in the interval of twenty-three years while this country was engaged in war, as many as seventy seamen were killed besides one hundred and fifty-eight badly crippled. Now we are actually saved this loss of life and injury by Sir William Harris's invention, besides a cost of about four to five thousand pounds annually in that interval, for the repairs occasioned by the destructive element of lightning. We have somewhere recorded in our pages that the sum of five thousand pounds was given to him at some time about 1852. Was that a sum that could be looked upon in the light of reward. It might certainly be considered an instalment, as being out of something saved in our annual expenditure. How much more expense would the country have been obliged to put up with since the conductors were adopted had not Sir William Harris prevented it? Sir William Harris is gone from among us, and we have heard that his widow is placed on a list which gives her a hundred a year. We have just read an announcement in the papers of the day that runs as follows:—

“The Queen has, on the recommendation of the Premier, granted a pension of £100 per annum to the well-known authoress, Mrs. S. C. Hall, in consideration of her long and useful literary services.”

We would on no account have recourse to comparisons, and verily we should be far from depreciating the *long* and *useful literary* services of the lady who is the recipient of that donation. But when a similar amount is bestowed on the widow of a man, eminent in science, whose scientific experiments and attainments have actually not only saved his country millions of money, and who underwent the trials of disappointment arising from ignorance, prejudice, and neglect; we do say that the man of science has been neglected still, that it was his misfortune to have to look for his reward from a source the very atmosphere of which was afflicted with a cold and parsimonious feeling which is unbecoming to a country, whose boast is her Navy—that Navy which is no longer subject as in former times to being disabled, and her seamen killed or maimed, but which has been saved from such disaster by the ingenuity and science of Sir W. Harris, whose widow is remembered in a similar way, dissimilar as were her husband's services.

The recurrence of these incidents in H.M. Fleet occasionally is rather to be desired than otherwise. That some few we say of our war ships should have a reminder now and then from a stroke of lightning would be beneficial,—indeed, that they should have a visitation that would shake every particle of those huge fabrics in the security of their own sides, and make them tremble from stem to stern while the powerful electric fluid is loth to pass from them into the sea, as in the recent case of H.M. ship the *Ocean*,—such visitations we say are rather desirable than otherwise, because they would recall vividly to those who witness them, the loss of life and treasure endured by our country in former days as recorded by history, while they are



no sufferers from them ; and they would learn to respect the memory of the man who successfully devised the means of averting for all time to come the sad losses we experienced before our Navy was shielded from lightning. And should they naturally conclude that the man who did this was rewarded, let them understand that true justice metes out her reward in proportion to merit without regard to individuals ; but that in England one who is successful in the field of literature, without benefiting the country, is equally rewarded with another who annually saves the lives of his countrymen as well as loss to her treasury, besides preserving the efficiency of her fleets when abroad on service where most required ; and that the man who did this was the late Sir William Snow Harris, whose widow has inherited her husband's ill fortune, in having so well served an ungrateful ministry.

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RELATIVE POSITIONS OF MARION AND PRINCE EDWARD ISLANDS  
*on the Chart.*

I WILL take the opportunity of placing on record with your kind permission, a simple but interesting fact about Marion and Prince Edward Islands in the southern part of the Indian Ocean. And it is this, that they are incorrectly placed *relatively* to each other.

I make this statement advisedly and with much caution, because that position is at variance with our great navigator Cook, and also Sir James C. Ross, presuming that the positions are from their reports. And here it may not be improper to venture to give my humble tribute of praise to our English surveying officers for their sterling and uncompromising fidelity to their professional work. No other nation can compare with ours for good charts, and although we frequently see reports from masters of vessels which have struck or grounded on some shoal or rock, complaining that the chart is wrong, and that said shoals and banks, etc., are farther from shore than the surveyors placed them. Notably has this been the case in the Straits of Banca, Gaspar, Durian, Rhio, Mallacca, etc. Yet on re-examination it has been proved that in every instance such positions were absolutely correct as laid down by former surveyors, and beyond all question our surveying officers deserve the most unqualified thanks and gratitude of the Mercantile Marine, for their devoted and unflinching regard to truth in the discharge of their most laborious and too often ill requited duties. As public servants they are unequalled in our or any other nation, and I as a humble member of that community tender my mite in testimony of their worth.

But to proceed to the matter in hand. On Admiralty chart No. 748a, you will find the east side of Marion Island, and the west side of Prince Edward Island, in transit on a true bearing of about N.E. and S.W., making due allowance for the small scale of the chart. And on chart No. 2203, it is about N.E. by E. and S.W. by W. Now I believe I am in a position to prove those bearings in error *three* and

four points respectively, and likewise to give some additional information respecting Marion Island.

On the morning of the 23rd May, 1864, whilst outward bound to Sydney, in command of the *Northfleet*, I made the island, and passed along the south side of it at a distance varying from one and a half to two miles, time between meridians of extremes five hours, and during that time I obtained fifteen bearings of extremes and highest peak, four altitudes for height, viz.— $4^{\circ} 16'$ ,  $7^{\circ}$ ,  $5^{\circ} 52'$ , and  $5^{\circ} 52'$ , five bases by Massey's patent log and twelve altitudes for time, and from these data I find the south side of the island (which is nearly due east and west true) to be in latitude  $46^{\circ} 36' 30''$  S. Longitude of east and west sides respectively  $37^{\circ} 36' 30''$ , and  $37^{\circ} 21' 45''$  E., consequently ten miles long. This longitude is measured from Sydney in thirty-six days by chronometers Barraud 1999, and McCabe 305, with a temperature ranging from  $48^{\circ}$  to  $70^{\circ}$  Fahrenheit, therefore I do not place dependence on it within three miles, in fact my principal reason for delay in sending you this report has been that I might measure its meridian distance from St. Paul's on a future voyage: those two islands being on a convenient great circle, upon which I usually tried to make a course after losing the S.E. trades in the Atlantic, and bound to Straits of Sunda, but I have not had the opportunity yet. To return, the mean of the heights was 3002 feet, and what is perhaps most interesting, the east end of Marion Island and west end of Prince Edward Island, were in one on a bearing of N.E.  $\frac{1}{3}$  E. by standard azimuth compass on break of poop deck (wood ship), which shewed  $3\frac{1}{3}$  points westerly, variation and deviation combined, therefore true N. by E.; and consequently differing three and four points from the charts. The coast was almost precipitous for a hundred feet then gradually rising in ridges to the summit. Very little vegetation, and that of the most stunted kind, growing in a few sheltered places. Altogether it had a most wild, desolate, and volcanic aspect, the summit was covered with snow. Vast quantities of a most gigantic sea-weed surrounded the shore, some specimens we procured were as thick as a man's arm, and about sixteen to eighteen feet long, one single straight smooth stem, strikingly like a snake.

In Mr. Findlay's new Directory for the Indian Ocean at page 289, there is the following passage as a quotation from Ross's voyage,—“ Captain Cook, although at a much greater distance asserts that he saw trees and shrubs, but he was assuredly mistaken.”

Now I have in my possession an old and very large folio edition of Cook's voyages, and at page 418 I read, “ We passed through between both islands in a very narrow channel; and had piercing cold, attended with snow with which the islands were lightly covered, but neither tree nor shrub were to be seen with our best glasses, nor any living thing except penguins and shags, the former so numerous that the rocks seemed covered with them as with a crust.” I should be glad to know where Sir James C. Ross found his directly opposite statement, meanwhile I shall believe Captain Cook to have reported, as I read in my edition of his voyages.

I have not alluded to Captain Cecille's visit to the islands on the 28th November, 1837, a detailed account of which will be found in the *Nautical* for 1841 page 592, but I may say he quotes Cook similarly to Sir James C. Ross, regarding the seeing of trees and shrubs.

Possibly Captain Cecille's rapid survey may have had something to do with their present places on the chart. At all events it is not quite clear to me how they came to be so placed, but I will conclude under the impression that I have succeeded in proving their *relative* positions are incorrect.

Your obedient servant,  
W. SYMINGTON.

*To the Editor of the Nautical Magazine.*

[Much credit is due to our correspondent for his great care in these observations, which shew that the relative positions of the two islands require examination about the allowance for magnetic variation.—ED.]

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#### ANOTHER GLANCE IN A MIRROR AT OURSELVES AND OUR NAUTICAL INSTITUTIONS.

*(Continued from Vol. xxxvii. page 672.)*

THOSE who have been admitted on board the *Chichester* amply justify these hopes. Captain Alston, their chief, supplies his testimony as to their intelligence, their active habits; and even their ready submission to discipline. I have myself witnessed their obedience to order, and their energy in performing them under the direction of three fine seamen. If this experiment succeeds, of which there seems to be no doubt whatever, the scheme will naturally expand itself, and there will be not only one vessel, but some twenty which, moored in the mouth of the Thames and other rivers of England, will receive the juvenile population of the country, and in a time when, from day to day, its Mercantile Marine are becoming more and more scarce of seamen, this will prove an admirable source from which to recruit and renew her naval power.

The idea of a training ship is good, but the course of instruction to be followed in the *Chichester* will be a very much modified copy of some others. It is not supposed that their instruction will be very extensive; when they have been taught to read and write and something of accounts, as well as having a slight acquaintance with a sea life, the time will have arrived to place them on board a Merchant ship to earn their own bread. The intention of the Directors of the *Chichester* is to keep them one year on board that vessel, at the end of which time it may be supposed they will not be entire strangers to the management of a ship. But the novice who embarks from the land has everything to learn, and has but little idea of the instruments and science by which she is navigated. The most remarkable circumstance

among these arabs is the force of early impressions, which from the earliest times has been followed by the seamen of those days. For instance, Jack has named many inanimate objects on board after domestic animals and customs of the shore. That wooden house, the ship, floating on the abyss of waters is a veritable Noah's ark, wherein the sailor has, from time to time, exercised his ingenuity by conjuring up before him the domestic and other animals of every-day life. The horse, for instance, is recognized by stirrups, the dog by the dogvane, the cat by the catheads, and numerous others too many to mention.

How many practical acquirements of a professional kind has the mariner to attain? When two ships meet together they can hail each other. But in bad weather and beyond a certain distance this was out of the question, and recourse was had to converse by signals. This language again was confused and imperfect, when a council was formed by the Board of Trade, the Admiralty, and the Trinity House, for the purpose of examining the system of signals for Merchant ships. Those most in use by English Merchant vessels were Marryatt's; in France those of Reynold; and in those of the United States Roger's were generally used. The Committee proceeded to select, and a code of signals was formed which, without being obligatory as to their adoption, were determined on as being the National code of Great Britain.

There seems to be yet a dislike on the part of the English sailor to enter the Service of the State. There can be no doubt, that neither danger nor privation will prevent those from adopting a sailor's life who like it. In time of war, when Jack was ill-fed, badly clothed, and harshly treated, the ships of the State never wanted hands. In those times a glorious feeling took the lead. In these days men are better paid, and the system of severe punishment has been done away with, and the health of crews is better than it used to be, and yet there is difficulty in finding men. What can be the cause of this anomaly? The maritime regime has progressed, although this progress, in public opinion, is much behind that of the working class of these days.

The shipowner again, is he more fortunate as regards his officers. They say not. A large number of foreigners are serving in the Mercantile Marine of England, and it is more difficult every day to find men for sailing their ships. It would seem that in the eyes of adventurers, the search for this world's good has more merit than their possession. Such is not the spirit of our day, and at present few are disposed to give up the substance for the shadow. Not only does the English sailor, in general, evince less inclination than formerly to enter the Merchant Service, but many of them besides, after having signed engagements and been on board their ships a few days, will desert them. It is not from the sea that they fly, for many of them go and offer their services to the foreigner. The ships of the United States, for instance, are largely manned by British seamen, who have sought on the opposite shore of the Atlantic better treatment, and an escape from certain degrading punishments. What would become of them in case of a war between the United States and Great Britain, would the

English seamen, serving under the American flag, fight against their country? Were it so, deserters so taken under the enemy's flag would be hung! Here would be a source of embarrassment to, and an outrage on humanity. May this consideration alone annihilate for ever a fratricidal strife between two nations who are connected by ties of blood and so many mutual and sacred interests.

Why is the maritime profession looked on as so forlorn in Great Britain as to keep still the prestige with which it was looked on a century ago by the masses. It ought to make good return for the sacrifices which it requires. Jack is both brave and devoted; but will he expect that the dangers to which he is exposed, and the liberty he forsakes will be considered. What are the expectations of a youth who voluntarily enters the Royal Navy? Advancement is certainly not denied to him as it is in the army: but how few sailors rise without favour or protection to an honourable station? The oldest sailor in the British fleet visited the port of Cork lately on board the *Warrior*. John Midgley had served above fifty years at sea, and had served in a good many actions, still he was only a simple subordinate officer. Another, John Ranger, who has forty-six years' service, and was at Trafalgar with Nelson. He is now a poor ignorant man in the workhouse at Guildford. Such instances are certainly no great encouragement to others to enter the Naval Service. Does the Mercantile man recompense the services of his seamen any better? Far from it! Badly paid, living on board in obscure and unwholesome berths, kept with bad dry food, they waste their time in making the fortunes of the merchant who freights their ship. It is true that these men often become themselves the first victims of their avarice, and their total indifference to the comforts of their men. Wrecks go on increasing and there is good reason for attributing the cause of these terrible catastrophes to the inexperience of men in whose hands, in spite of the best pilots, the owner of the ship is obliged frequently to trust his ship.

Who would believe again that the greater part of English sailors (Mercantile) don't know how to swim. The country of all others the most surrounded by the sea is that which, by a curious coincidence, has most of all others neglected this important art, and in cases of accident, loss of life would most likely ensue. And yet Jack loves his country; while he is young he bears up against ill fortune, and defies every mishap. A sea life is a kind of national feeling with him; he longs to carry the British flag over the distant wave, and it is a matter of pride to him to have Britannia for the figure head of his ship. Still the dark days of age will come on. There may be nothing but thorns in perspective, sickness and the hospital are awaiting him.

The most curious of these establishments for sailors is, doubtless, the *Dreadnought* which, off Greenwich, is passed by every vessel on her way to and from the docks. The institution was founded in the winter of 1817 or 1818, a time when a very large number of sick seamen were found in the streets of London. The first ship that was supplied to this purpose was the *Grampus*. In 1830, this vessel was not sufficient for the large number of sick seamen on board of her, and on the other

hand, the resources which had been derived from the charitable had increased. The Committee then obtained from the Government another vessel of the line, named the *Dreadnought*, which ship was herself replaced by another in 1857, the *Caledonia*, but the name of the former being established, it was determined these should severally be called the *Dreadnought*. It was the last new *Dreadnought* then that I proposed to visit.

It is highly interesting to witness the part which this vessel takes in affairs. Who would have supposed that on board of her would be found good lodging for surgeons, a handsome chapel, a museum of anatomy, a doctor's shop, a bandage room, and a variety of other rooms necessary for the affairs of an hospital. The principal apartment of the hospital that is occupied by the chief-surgeon is known by the name of the "accident ward," devoted to the reception of sailors brought on board injured by accident so common to seamen. If it were not for the *Dreadnought* these poor fellows would be obliged to be taken on to London, there landed, and to remain while it was being decided what should be done with them. Happily for them, the *Dreadnought* lies in their way, and all that is asked on board that noble ship is, not where they are from, but the ill from which they are suffering. Sailors from all parts of the world are thus received at once, and without any letter of recommendation. In fact, I have seen there men of colour in plenty, and am informed, that from the beginning of her good work, 94,879 sailors, composed of 2,418 Hindoos, 524 Africans, 53 Chinese, besides natives of New Zealand, and New South Wales, all of which have been received on board the *Dreadnought*. Frenchmen too, on this list, amount to 499. The institution has a revenue of £16,000 per annum.

The length of this principal ward, the numerous beds, each containing their sufferer, the low small windows pierced in the sides of the ship, the small light reflected as it is by the water on the river, produce an extraordinary and depressing effect. Two other decks are assigned for the treatment of different maladies. English hospitals do not contain Sisters of Charity: they have nurses in black vestments, but like other women, who attend the sailors with all the devotion and tenderness which such a person should have. One of the principal features of the institution is that it does not neglect its patients from the moment their ailment is overcome, but is equally careful of their convalescence. Here, indeed, the sailor who has no friends on shore, not a roof that will protect him without payment, here he may recover his lost energies. Yes, I left the *Dreadnought* filled with admiration of English charity, and yet not without something of a sad and painful feeling. Here, indeed, I had found the dark side in the life of the sailor.

And yet from this state of hardship and suffering in which those to whom is committed one of the branches of public industry are found, conclusions too severe must not be drawn. English Maritime affairs are really in a transitory state, they are being renovated. And how can it be otherwise? The material itself of building is all changed.

Steam in a great measure has superseded sail, and in these days gives wing to the iron ship. Man makes the machine, but the machine in its turn, modifies the energies and character of him who governs it. These metal ships, strong as all the discoveries of science can make them, are directed by captain and officers cut out for them, correct, methodical, polished, and determined in their stations. The sailors are not the men they were in former days: they belong to another class. Information has already found its way on board, and will spread more and more beyond the seas, where in former days heroism went hand in hand with ignorance. It is no longer in swearing and blaming landsmen, that the English sailor will hereafter shew his superiority over his shipmates. In proportion as the moral feeling becomes greater, will it not be necessary to modify the Maritime code, and in the ship, the sailor's home, to respect the dignity of the man. The English may preserve in their museum at Portsmouth dockyard some relics of their victories, which relics they shew with pride to strangers;—for instance, the old war-ships, the names of which are connected with celebrated battles—nothing is more natural. But these ancient sources of the thunderbolts of war are no more than shadows of the past; and a really brave people do not live on recollections. It is rather in breaking those ancient maritime customs, and in courageously following up the stream of progress, that the English will far more effectually remind the world of her ancient glorious deeds.

Is there not also another side by which to look at the Mercantile fleet of Great Britain, a high social mission for it to follow? Among her ships which penetrate to all parts of the world are Lascars, Chinese, Malays, and Africans in the port of London. It frequently happens that the commander of a ship abroad has to embark natives of distant lands to fill the vacancies in his ship occasioned by the desertion or demise of English sailors. All goes well on the voyage, and it matters little for the service what is the colour of the hands that hoist the British flag; but once arrived at Liverpool or London, how are these treated? Abandoned in the streets of the great town by the vessels in which they have served, they lead a life almost of beggary. At the docks, the great mart of maritime produce, they prefer the English seaman, and many of them thus lose the chance of returning to their native soil. They then get into some obscure alley in Wapping, blaming their evil stars which led them from their country to the banks of the Thames. Some captains affirm that the services of these men are not to be despised. Accustomed to the sea, they soon adopt the discipline of the British ship.

Can England then allow so good an opportunity to slip of replenishing her maritime strength. The whole world is open to her, even to the extreme East. Experience teaches enough—hands enough are offered to her for the pacific conquest of the sea. Besides, would not this be an excellent means of spreading the blessings of civilization on the best and most intelligent of the different groups which people the surface of the globe. And it is not a point of honour alone which suggests such a course to Great Britain, it is also the great interests of

navigation and commerce ;—for the ocean, that tie of nations however distant, shews at the same time the field of labour wherein the various efforts of the human race may be best directed.

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THE BANE WITHOUT ITS ANTIDOTE. *Chewing and Snuffing.*

(Continued from page 643.)

As a compliment to the ambassador Nicot, the tobacco plant was called by botanists Nicotiana. It is cultivated in almost every country in Europe except Great Britain. The tobacco that could be produced in the British Isles, like that grown in Europe generally, is of a milder and much less injurious character, and of a more agreeable perfume, than that imported from America ; yet in this country the cultivation of that plant is prohibited under very heavy penalties, and an inferior kind imported for which a duty is paid equivalent to ten times the cost of the original article.

Dr. Armstrong, speaking of tobacco as a sedative medicine, observes that it “ has the power of allaying irritation and pain very remarkably.” Sailors on short allowance will live comparatively comfortable on a small quantity of food if they chew or smoke tobacco. The Indians on long journies mix powdered shells with tobacco, and by it allay hunger for many days. I know a gentleman who chews two, three, or four grains of tobacco, and swallows the saliva till he feels sick, and finds that “ it “ allays the pain of gout.”

Thus tobacco may be advantageously employed as a medicine, so may opium and deadly nightshade, and the most rapidly fatal of poisons Prussic acid ; but by continued use and continued reaction after use, the brain and digestive organs are gradually deteriorated by the use of tobacco, till at length the animal frame sinks under the almost imperceptible attacks of the insidious poison, and death seizes its stricken victim.

Besides these effects described by Dr. Armstrong, others are obtained from tobacco in its medicinal character. Its infusion is applied as an enema in dangerous hernial cases ; but it sometimes causes syncope and death. Dr. Armstrong recommends that it should never be administered strong in this form. The leaf is applied as a dressing to verminous sores, and may be used internally as a powerful emetic ; but unless the system be gradually brought to receive it, like opium it is always a dangerous remedy in large doses,—that is, if more than from three to six grains be taken.

The tobacco plant or Nicotiana belongs to the botanical order of Solanææ, a family of plants, many of which are deadly poisonous. Among these latter are the tobacco itself, the henbane, the stramonium, the mandrake, the deadly nightshade, and several others. To this order of plants belong also the potatoe, the capsicum, the tackili or bird-pepper, and the calabash tree.



The proximate element from which arises the narcotic power of tobacco is an alkaline principle termed Nicotina, and by some chemists Nicotia. At thirteen degrees below the freezing point, it appears as a slightly tinged pulverulent matter. Above that temperature, it remains in the form of an almost colourless and transparent liquid, with a pricking and burning taste, which is so difficult to get rid of that it is felt for hours. The nicotiana gives out besides a nauseous and pungent odour. It combines with the acids, with each of which it forms a salt. With a wick it will burn like oil, diffusing a vivid light. It mixes readily with water in all proportions and is soluble in alcohol, ether, and oil of almonds, but not in oil of turpentine. This principle of tobacco is so poisonous, that a single drop of it will destroy a large dog.

Besides its nicotina, tobacco contains ammonia, sugar, bitter extract, resin, albumen, potassa, nitric and muriatic acids, and some other principles, the whole forming different combinations. The free ammonia appears a result of fermentation, and arises from the decomposition of hydrochlorate of ammonia, naturally residing in the plant.

To use the words of the veteran pharmaceutical chemist Gray, the green leaves of the tobacco plant "are detersive, acrid, narcotic, and apophlegmatisant;"—this last formidable word signifying according to Quinney, "any remedy which causes an evacuation of humour." The truth is, that these leaves, besides being sufficiently irritating to blister the skin, if heated before they are applied, yield a very powerful narcotic poison, by an inordinate and excessive use of which an effect is produced upon the animal frame similar to that arising from opium, from ardent spirits, or from malt liquor drugged with either nux vomica or coculus indicus.

The tobacco is prepared for use or exportation by suspending the leaves to dry during four or five weeks in a shed. From this they are moved in damp weather, to avoid their crumbling to pieces, which would be the case were they disturbed in a very dry air. They are then heaped in strata, covered and left to ferment during a length of time proportionate to their quality or the state of the weather. During this period they must be examined often, exposed to the air if necessary, by opening and turning the heaps, and means must be taken to prevent their heating too much; for were this allowed, they might either run into the putrefactive fermentation or take fire. Much skill is required in conducting the process for preparing tobacco; and the talents of a negro who well understands this branch of the planter's art are very highly prized.

When the tobacco has sufficiently fermented, and sometimes without any fermentation at all, it is sent to market, where prior to its sale, it undergoes the inspection of an officer who certifies, by a mark its good quality when sound, and orders it to be burnt when bad.

The volatilising agent of the odoriferous principle of tobacco is ammonia, one of the products liberated by fermentation. This appears from the following simple experiment:—If a green tobacco leaf is

crushed between the fingers it gives out no other than the herbaceous odour common to all plants; but if the same leaf be triturated in a mortar, with a bit of quick lime, or a few drops of caustic solution of potassæ of the *Pharmacopœia*, it immediately yields the well-known odour of snuff. The reason of this is that the lime or the potassæ decomposes the hydrochlorate of ammonia existing in the leaf, and liberates the ammonia; the hydrochlorate acid flies to the lime or potassæ water, whilst the chlorine and the meal uniting, are converted into chloride of calcium or chloride of potassium.

For the purposes of use and manufacture, the tobacconist spreads the fermented tobacco leaves upon a stone pavement and separates the bad from the good. This being done, the good leaves are watered by successive layers one over the other with a solution of common salt. They are then suffered to re-act upon each other during several days, according to their quality and the temperature to which they are exposed. At this period a new fermentation arises, and more strongly develops the odorous principle of the leaf. The salt added to the tobacco is supposed to keep the leaf moist and to temper the fermentative action, which might otherwise run to excess. The maintenance of moisture, however, is best affected by sea water, which contains other salts besides common salt, or chloride of sodium; some of which have still a greater tendency than this latter to deliquesce, or assume a humid condition.

The leaves, after being thus prepared, are sorted and stripped of their middle stalk, when the larger are set apart for making cigars, and the others, together with the stripped stalks, for the manufacture of smoking-tobacco, chewing-tobacco, and snuff.

"Most of the tobacco on sale in our shops," observes Dr. Ure, "are mixtures of different growths; one kind of smoking-tobacco, for example, consists of seventy parts of Maryland, and thirty parts of meagre Virginia; and one kind of snuff consists of eighty parts of Virginia, and thirty parts of either Hamesfort or Warwick. The Maryland is a very light tobacco, in thin, yellow leaves; that of Virginia is in large brown leaves, unctuous, and somewhat gluey on the surface, having a smell like the figs of Malaga; that of Havana is in brownish, light leaves, of an agreeable and rather spicy smell; it forms the best cigars. The Carolina tobacco is less unctuous than the Virginia, but in the United States it ranks next to the Maryland."

Beneficial as, in some cases, tobacco may prove in its character as a medicine, its use as a luxury, in any form, is as injurious as its intoxicating properties are lamentably demoralizing.

But let us take the weed as we find it, in the market, and consider its influence under the three modes of its use,—those of chewing, snuffing, and smoking. But it has been ascertained from experience, that, on first commencing the use of it in either of these ways, the effect is similar to that of opium; it produces intoxication and sickness of stomach. However, by repeated use in moderation, these unpleasant effects subside, and the *aspirant* to its use is thrown into a kind of fascinating dreamy state of semi-intoxication. But let him

mark the consequences: his health is insidiously attacked, disease and disorganization of system creep over him by gradual but stealthy steps, and sap the springs of life, until they become drained, and he left the unconscionable victim of its power. When all moderation is thrown aside in using tobacco, and this has gained all power over its victim, then follows intoxication, with its inseparable companion, delirium tremens, kept up by stimulating drinks which the consumer of tobacco is compelled to take.

It has been observed that, as a nation, we are by no means backward in our share of the consumption of tobacco; and although most nations use it freely enough, none carry that consumption to the extent that we do. It is said that in foreign countries the leaf of the plant is even steeped in rose-water to render it more acceptable, but it is nearly everywhere washed in its preparation. We have seen in our last Number, the care with which it is preserved by its devotee for whatever shape he may use it in. But for the purpose of chewing, the leaf is twisted into a small cord, and rolled up; in which state it is called pig-tail, no doubt from its consistency justifying the comparison between it and the tail of the hog, and this is probably the strongest form in which the leaf is employed. Placed in the mouth between the cheek and the jaw, the quid is installed. The native Indians of Cuba told Columbus that the use of it prevented them from feeling fatigue; and it is said by old seamen who are accustomed to it in this form, that it prevents them from feeling the effects of hunger. We have known even the quid adopted to prevent feeling the pain of tooth-ache. But from whatever reason it may be adopted, the habit remains generally during the lifetime of the individual. The old story about the sailor will no doubt be in the memory of our readers, that says:—

“His head was turned, and so he chewed  
His pig-tail till he died.”

However, the quid in the mouth, the tobacco in fact itself, excites the salivary glands, much as the smoke of it does, and the secretion is nothing more or less than a strong infusion of tobacco. If this passes into the stomach, as may have been the case with beginners, sickness of course soon follows. But admitting that it is discharged from the mouth, the intoxicating and narcotic principle of the plant acts on the brain, and will produce intoxication on those who are not used to it. Still the habit is acquired, and perhaps the weather to which the sailor is exposed may keep him from feeling so much of its effects. Many a time have we witnessed him shaking the wet off his tarpauline hat as he stood at the con, the ship splashing along through the water on a wind and wallowing at times in the trough of the sea, rising and shaking the seas off her sides every now and then, wetting everyone even to her quarter-deck. But after all there is something in habit. The use of tobacco becomes natural to the seaman; he is past all its qualmish effects. Like that of smoking, the habit of chewing tobacco is acquired just as that indeed of taking opium, and its effects are

gradually deadened on the system. But it is said, that those who chew the weed, unless they are actively employed or are enduring pain are always more or less in a kind of intoxicated condition ; many of them displaying an eye which would take little to rouse to a glare of furious insanity. But we do not remember having ever seen seamen so far gone as this, from which probably their exposure to the weather may free them. And yet the observation is no doubt correct, that intoxication, whether arising from tobacco or spirits, is the state of the man that leads him who is in that lawless condition of inebriety, to commit the most dreadful acts of barbarity, in fact to enact the part of the madman.

It is certainly possible that the continual exposure to wet, to which sailors are liable, more especially when the weather is bad, and the strength of the system tried, not only by this, but also by the spare provision which he must put up with, sometimes fever may be averted by tobacco, as well as other ill effects to which he must be exposed, and like the natives of Cuba he may feel his strength called forth by such a stimulant as tobacco. But would not the system under no other pressure than that of mental determination, enable him to endure the same, to put forth similar energies as would be excited by the weed, free from all its influences on the system ? There are still those who do not have recourse to it who undergo also the vicissitudes of weather, and as far as our own observation goes, their energies, from an unpolluted source, have been as active and as powerful for exertion as those which have been called forth by the physical effects of the weed ; and when no longer required the system falls back to its own repose, undisturbed by those after influences called forth by that, requiring further action still to be brought forth by further stimulus, until at length there are no energies left with which to command that action. For, whether such demands for its aid proceed from the humid climate of the country in which he lives, or from the labour which he pursues, a close observation has established the important fact that the man who habitually has depended on tobacco for a renewal of his energies when required or not required, must follow the habit of its use, and this man is found to exhaust the principle of life far more rapidly than he who has no need whatever for the stimulant, In fact, the man who has adopted the quid exposes himself as much to the injurious effects of the weed in that form, as in either of the others : he becomes an old young man ! At the age of fifty he has not the energy of seventy, and why ? Because he has lost his physical powers under the deleterious influence of the dangerous weed !

Let us now turn to the next part of our subject—another use of tobacco in the shape of snuff. And here the force of habit exhibits itself just as immediately as it has done in the foregoing. There may be this difference in the application, that as in the former there is no risk of the saliva it produces getting into the stomach and occasioning sickness, but, we shall see that this is no more free from its evil than either of the others. It appears that the practice of reducing the leaf o a powder for use by snuffing it up the nostrils has long been general

throughout Europe. It is said that the practice originated with the French, perhaps no other nation in the world would have imagined so singular a mode of using the tobacco plant. However, throughout last century, it was indispensable for the French gentleman to have his snuff-box, and the sale of the plant had been found so lucrative that very early in its European history the French Government became the sole manufacturers and indeed it became a monopoly. It is said there are but two qualities of it sold in France, for the duty on all foreign importations of the article is so high as to amount to prohibition. Of course there is an excise duty on the cultivation of the plant which is strictly under the inspection of an officer.

It is yet a question which is the dirtiest mode of using tobacco. Each has its advocates, and these are ingenious enough to find the best palliation for his own choice, and to impugn those of the other two. So we are offered an excuse for the filthy habit of taking snuff, a habit however which has fallen much into desuetude of late years. Among other motives which have been advanced in its favour has been its medical effect in the case of head-ache and sore eyes. But it would appear that the principal effect of thus using snuff has been to lay the foundation of the habit, for even if its aid has been successfully adopted and the disorder has been conquered the patient has persisted in adhering to the practice in case ophthalmia should return. The Germans who are an ingenious race no doubt, it is said, can find five reasons for an extra glass or so of their favourite beverage, all of which hold good on occasions. Their arguments are these, and certainly cogent in principle. We will enumerate them, 1, a friend; 2, good wine; 3, or being dry; or 4, in case one should be by and bye, and 5, or any other reason why! The fourth of these partakes of the nature of a preventative like the motive for continuing to take snuff so as to prevent a return of the disorder which it had cured, but certainly the fifth is the most convenient as it includes any and every possible reason.

And yet the article snuff itself has no such curative power. There are quacks in snuff as well as other medicine. That called cephalic, or Grimstone's Eye Snuff, or any other of them sold as remedies for head-aches, or sore eyes, would have produced the same effects and actually contain no tobacco; being composed of dried herbs of a peculiar kind such as marjoram, flowers of lily of the valley pulverized and combined. Like the tobacco plant they excite and irritate the mucous membrane of the nostrils. But the snuff of tobacco does far more. Like the smoke of the plant as well as the quid it acts on the brain, producing intoxication and sickness. And in addition to this a third of that taken as snuff up the nostrils enters the stomach much to the derangement of this important organ.

It has been found from experience that the effects of snuff are to impair the memory, and almost to destroy the powers of the digestive organs. Hence proceeds dyspepsia with all its distressing sensations, followed of course by emaciation of body, a nervous miserable state, the mind full of wretched doubts and fears, and appeal after appeal

made to the old stimulant, to rouse the energies to action, added to the soreness of the nostrils occasioned by the action of the tobacco. Nor are these effects limited to a few—they are proved to be the share of all who have given way to the desire of snuffing the weed. Still the habit of taking snuff has been overcome and fairly laid aside, much, very much to the satisfaction of its devotee. We have known those who have experienced the irritation produced by the want of it for keeping up the habit, urging the snuff-taker to get anything as a stimulant even to pepper. The man who will chew his pocket, which from containing his tobacco had become so thoroughly impregnated with the weed as to pass for its substitute, would pair well with him who would take pepper, when he could not get snuff, as miserable victims to the force of habit.

And to throw off this habit is after all but a struggle, trying to bear at first, but when once mastered resolution is well rewarded. And its first reward is the return of health, the renewal of its springs take place every day, and the recovered victim looks back and laughs at his folly in having submitted to the mere temporary gratification of a temporary sensation. The desire for even a single pinch of the vile powder is lost. But why? because strong resolution from the beginning had overcome all temptation, and had established a downright hatred of the cause.

There is no doubt much cunning on the part of the manufacturer of snuff to render his preparation acceptable. Thus he provides it with an agreeable and pleasant odour, and the additions which he makes to it, are such as have also the advantage of keeping it moist as well as exciting a new fermentation; thus improving as well as preserving its flavour. The old *Macouba* is a scented snuff, originally said to come from Martinique, but is well known to be prepared in London. Dr. Ure gives us this account of its preparation by a skilful manufacturer in the great city:—In a solution of liquorice a few figs are boiled for a couple of hours; while hot the decoction receives a few bruised aniseeds, and when it is cold a little common salt. A little spirits of wine is then poured into it, and the mixture is agreeably but sparingly sprinkled from the rose of a watering pot over the leaves of the tobacco, as they are successively stratified on the preparation floor." But salt water and even molasses or sugar are frequently added.

Another kind of snuff, the *Masulipatam*, comes from the East Indies in bottles, that is prepared from a tobacco which has a peculiar flavour imparted by the soil in which it was grown. This is really kept moist with sea water, being also salted still, to keep it moist, and even receives a little chloride of calcium which enables it to absorb moisture from the air, accounting thus for the peculiar moisture of this species of snuff. And notwithstanding that great care is taken to keep deleterious ingredients from some snuffs, there are others which contain muriate of ammonia, carbonate of potassæ, and even the grits of pounded glass in the way of contributing to their pungent qualities. And it is even said that in order to minister to the insatiate desire of

mankind for the full enjoyment of that ammoniacal flavour which some strong snuffs possess, human urine is sometimes used in their preparation which it is said that experience will detect in more than one kind of snuff.

That the measure of human depravity of taste may not be left incomplete, there are unprincipled men who deal in snuff that will introduce pearlash, neither more nor less than an impure carbonate of potassæ into their snuff, by way of obtaining the pungency and flavour of more costly ingredients used for the same purpose. Thus Dr. Ure says, "I was employed several years ago by the excise to analyze a quantity of snuff, seized on the suspicion of having been adulterated by the manufacturer. I found it to be largely drugged with pearlashes and to be thereby rendered very pungent and absorbent of moisture; an economical method of rendering an effete article at the same time active and aqueous."

The snuff manufacturer is abundantly supplied with the material of his ware, independent of the adulterating ingredients of which he is so lavish. Every leaf of soiled tobacco falls into his hands which after undergoing some one of the above processes, and receiving one or more of the above cheap ingredients, is handed in its finished conditions with a high price and a fine sonorous name to the admiring public. Verily the gentry who keep up this game must drive a flourishing trade with a very secondary capital.

And now what does a calm retrospect of the foregoing suggest in spite of all legislative enactments. That the snuff-taker is content to receive into his nostrils and through them much into his stomach of a compound of filth! matters which if he were aware of it as forming parts of his favourite mixture, if he did but know we say, what they consisted of, would sicken him at once, and which he would spurn from him with disgust. It has been most truly said that the human senses may be gradually brought to any degree of depravity, and certainly nothing proves it more than the habit of taking snuff. Herein nauseous odours are termed delicious, even the vilest compounds, have they but a winning name are eulogised as exquisite. Snuff after being kept for some years in closed vessels especially when in large quantities gives out a powerful ammoniacal smell, strongly partaking of mould or mustiness. What then? This odious exhalation is a delicious odour in the estimation of the snuff-taker. This quality, the effect of age, is prized by him beyond measure. It is old; its very age is considered to improve it, like old wine; and thus what in any other vegetable production would ensure it a place on the dunghill is prized by the snuff-taker as choice and *recherché*. It is said with much truth that we little know the amount of dirt that we eat. Verily we may say the snuff-taker little knows the filth that he is perpetually thrusting up his nostrils, or in disgust the snuff-box, and all would soon find some other ungracious treatment than being so carefully preserved, silver as it is, in his pocket.

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THE NAUTIC MILE: IN REFERENCE TO CARRINGTON'S TABLES.

SIR,—Objection having been taken by “a correspondent” to “Minute of Latitude and Nautic Mile” being used as synonymous terms, it perhaps would be advisable to ascertain how recognized authorities define a Nautic mile.

For all purposes of Navigation, it is no doubt sufficiently near to *assume* a Nautic mile to be either the sixtieth part of a degree of the great circle, or the *mean* length of a minute of latitude; the former measures 6087 feet, and the latter (in lat. 45°) 6077 feet,—so that the difference, only ten feet, is of no practical value.

Writers on Nautical subjects have never been unanimous as to the exact length of a Nautic mile, but the following show that I am not singular in using the terms as synonymous;—Raper in his “Navigation” states that “a Minute of Latitude or Nautic mile contains 6082 feet. The Rev. John Harbord in his “Glossary of Navigation” says that, “Great care should be taken not to call a Minute of Longitude a ‘mile,’” and under the heading “Mile” states that a “Nautical mile is the mean length of a Minute of Latitude, and contains 6082·66 feet.” In Humboldt’s “Cosmos,” Eighth Edition, Vol. I., page 53, notes, it is stated that “the length of a mean degree of the meridian is 364,596 feet, and that of a geographical mile, sixty to a degree, 6086·76 feet. Webster’s last edition of the “English Dictionary” gives “The Geographical or Nautical mile is one sixtieth part of a degree of latitude, or about 2,025 yards.” All the Admiralty Sailing Directions have the note “Distances are expressed in sea (Nautic) miles of sixty to a degree of latitude. In Kelly’s “Cambist,” a “Geographical or Sea mile is one-third of a Sea league, twenty Sea leagues make one degree of the Meridian.” Rees’s “Encyclopedia,” article “Mile,” “a Geographical or Sea mile is the sixtieth part of a degree of the Meridian, which, in the latitude of 52° equals 2,027½ yards.

In Inman’s “Navigation” it is stated that “minutes of the great circle are usually called nautical miles, or simply, miles,” but he prefaces it with the remark that the earth is *supposed* to be a perfect sphere, so that of course it would matter little if latitude or longitude minutes at the Equator were taken. But on page 26 he gives the *mean* length of a nautic mile as 6,075·5 feet, thereby implying a variable length.

We are accustomed in this country to take the length of a mile for the latitude of the place wherever marks for a nautic or “measured mile” have been erected for testing the speed of H.M. Ships; for instance, the length of the measured mile at Plymouth is 6,083 feet, agreeing exactly with the latitude of Plymouth; although I admit that for this purpose a mile of uniform length should be adopted, as otherwise we do not get the correct relative value of ship’s rates.

On the charts we must always take the length of a nautic mile from the latitude scale, varying of course with the latitude of the place, so that no fixed quantity can be applied for its length.

It is clear then from the foregoing remarks that a minute of latitude



and a nautic mile, are used by some of the best authorities as equivalent terms, but practically the nautic mile or knot, *as used by seamen*, does not require that it should be so accurately determined, though in tables it is necessary to work out the quantities with the greatest precision.

Whatever the objection to the synonymous terms, the tables as published offer to the public,—and more particularly to Map and Chart projectors,—the *exact* proportion of the Longitude to the Latitude for every ten minutes of the Quadrant, thus simplifying projections; but tables giving the lengths of the degrees of Longitude in minutes of the great circle bear no such proportion, except on the true sphere.

Again in using minute of latitude and nautic mile as convertible terms, of course we arrive at the conclusion of there being 60·41 to a degree of Longitude at the equator, but as no distances are measured by Longitude scale, I cannot see how this will affect the navigator.

Though the statement may appear paradoxical, it is nevertheless a fact that a degree of Longitude at the equator does contain 60·41 minutes of Latitude, for as the earth being determined an oblate spheroid (the most curved part of the ellipse, or that which has the least circle of curvature, is that which just cuts the Equator at right angles), it is obvious that we must necessarily have a greater length for a degree of the equatorial circle, than that of a degree of the meridian.

Mendoza Rios, in his valuable "Navigation Tables" states that he has "added for the various cases of Hydrography and Navigation" the meridional parts for the spheroid, and from the spheroidal parts the Charts of England, France,\* and Russia are projected, and assuredly the most perfect projection must be that which most nearly approximates to the true figure of the earth,—that it makes little or no difference to the navigator, I quite agree with "A Correspondent," and for that reason I would most particularly urge its adoption for all Charts.

In the meridional parts of the spheroid is given for the value of the distance  $0^{\circ}$  to  $30'$ , — 29·81 parts, which give for the degree at right angles to the equator,  $29\cdot81 \times 2 = 59\cdot62$  parts of longitude for the value of one degree of latitude, agreeing as near as possible with the tables now under discussion.

Whilst on this subject I would remark that of late years a new idea has been promulgated (see Captain Clarke's paper in Sir Henry James' publications), viz. ; that the equator itself is not spherical but slightly elliptical in form, and therefore the ellipticities of different meridians are slightly different, the major semi-axis is given in Long.  $15^{\circ} 34' E.$ , and the minor semi-axis in Long.  $105^{\circ} 34' E.$

I am, Sir, your obedient servant,

ROBERT C. CARRINGTON.

Surbiton, S.W.  
December 12th, 1868.

*To the Editor of the Nautical Magazine.*

\* The French use M. Bégat's Tables.

[Mr. Carrington has not yet removed the great objection to his tables that is made on the part of the seaman, viz., that, of the *minute of longitude* at the equator being greater than the mile of latitude; and this we consider will always be his objection to them.—ED. N.M.]

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#### THE NATIONAL LIFE-BOAT INSTITUTION AND ITS WORKS.

As usual in these wintry months, our shores are visited by gales, bringing their quota of wrecks from our helpless merchant craft! and the ever watchful life-boats of the Society in the Adelphi are doing the share assigned to them while the elements are doing theirs. And here is a picture of the work done in the Adelphi.

The *Pelican* life-boat, at Withernsea, first claimed attention, and a reward was assigned to her crew of £16 17s. for saving the crew (five hands) of the smack *Mary*, of Hull, stranded about a mile and a quarter southward of that place. Her crew had lost their boat in launching her, and it was well for them that a life-boat was at hand. The next was a reward of £14 to the crew of the *Palmerston* life-boat, of Cullercoats, who had rescued the crew (eight hands) of the brig *Robert and Sarah*, of Blyth, on the 21st of November. And then a life-boat called the *Grover*, at Mundesley, for saving the crew of the brig *Rochdale*, of London, that had sunk off Hasborough, on the 10th of November. Next came the case of the schooner *Mary Jane*, of Padstow, that was stranded near Clay Castle, on the Irish coast. The *William Becket* life-boat, stationed at Youghall, rescued three men, the crew of the stranded vessel, and earned for her services about £13. The *Helen Lees* life-boat, at Kirkcudbright, on the 30th of November, also saved five hands of the schooner, *William Henry*, of Belfast, wrecked on St. Mary's isle, and earned £6 13s. for her services, the vessel having become a total wreck. Another vessel being stranded, called the *Maude*, of Liverpool, her crew was rescued by the Wexford life-boat, named *St. Patrick*, with the assistance of a tug. The vessel had got on the Long bank, and was abandoned by her people. The *Tom Egan* life-boat, of the Cambridge University Club, stationed at Tramore, in Ireland, had gone off to an Austrian barque, called the *Maia*, and with considerable difficulty saved seventeen men from her, the vessel being wrecked in a tremendous storm in Tramore bay on the 29th of November, at which gallant feat, the Cambridge men may rejoice. And on the next day, the Caistor life-boat saved the crew of the barque *Annie Scott*, of Arbroath, which vessel had capsized, and the crew had taken to their small boats, rescuing them from the danger of being swamped and drowned in them. And this same Caistor life-boat went afterwards to another barque stranded on the Cross Sands, and happily brought her to a safe anchorage off Winterton. The recent stormy weather on the coast had occasioned the life-boats of

Donna Nook, Porthcawl, Kirkeudbright, Great Yarmouth, Sunderland, Hayle, North Deal, Sutton, and Tynemouth, to put off on their life-saving errands, in which they had severally succeeded. And the Institution's silver medal was voted to John Freaney for his gallantry in saving the crew of the *Blue Vein* schooner of Port Madock, stranded opposite Ballybrack Railway Station on the 25th of September. Such was the principal business in defraying expenses of life-boat stations. We next must treat on the subject of *means*, as like all other great establishments, that of the Adelphi has its "*ways and means*" also.

Thus it is pleasant to be enabled to record among the latter a legacy of £100, received from the executors of the late David Sinclair, Esq., who had acted as honorary secretary of the Thurso branch for many years. Another of £200 from the late William Danger, Esq., of Bishopsgate Street. Another of £100 from the late R. J. Fydell, Esq., of Morcott Hall, and £50 from the late Mrs. Essom, of Humshaugh, Northumberland. Then Benjamin Heape, Esq., was voted the thanks of the Institution for his gift of the life-boat *Mary Heape*, to be sent to Kimmeridge, on the Dorset coast, and an announcement was received from Count Edmund Bathany of his intention to present to the institution a life-boat in memory of his late daughter, an only child. The Manchester Branch had very handsomely sent a contribution of £270, in aid of the support of its twelve life-boats, presented at different periods to the Society, the last of which had been stationed at the Isle of Man. The Leicester Branch had also forwarded an additional contribution of £50 in aid of the maintenance of the life-boat at Gorleston, near Great Yarmouth.

It appears also that during the last month, life-boats had been sent to Milford, Frazerburgh, and Ramsey, and it was stated that the Turkish Government had ordered four life-boats to be built by Messrs. Forrest, of Limehouse. But it is not a little satisfactory to know in the midst of all these proceedings, that although payments amounting to £1666 were made at this one board, and £18,000 expended this year, that no less than 697 lives had been saved from various wrecks—which lives but for such aid would have been lost. Indeed, as many as 17,684 lives had been saved by the Society. The British Public shall know this fact, and that the labours of the Adelphi people in regulating the affairs of the Royal National Life-boat Institution are well worthy of the encouragement they receive, to save life from wreck.

Having concluded these lines, we had imagined that our task of recording the gallant doings of our life-boats was for this time concluded. But how vain were our conclusions—the task is done but to be begun again: the gales are not over, and if possible are even more severe than before. On our Western and Southern Coasts, the sea, driven by the fury of the wind, has invaded the shore, far transgressing its usual bounds—and to follow the record of its doings, would require limits wanted for other matters. We must, therefore, reluctantly lay aside our wreck narration for our next number.

Still there is an account of a wreck which has shewn out the value of our excellent system of life-boats, that we cannot fail in recording. The barque *North Britain*, lost on the Eastern shore of Mount's Bay, on the 3rd of December, is memorable for the noble service done by the Penzance life-boat, named the *Richard Lewis*, after the zealous secretary of the Royal National Life-boat Institution. The *North Britain* was timber laden on her voyage from Quebec, and seen early in the afternoon of that day off Porthleom in a very perilous situation. Mr. N. B. Duoning, of Penzance, banker and honorary secretary to the local branch of the Life-boat Institution there got news of this at two o'clock. He called together the crew of the *Richard Lewis*, put the horses to the life-boat carriage and drove off to the place, which they reached but ten minutes after the barque had struck between St. Michael's Mount and Long rock. Eleven of the crew of the *North Britain* not being aware of the help coming to them, had put off in their long boat, which was upset half way to the shore, and seven of these men were drowned: the other four were rescued with great difficulty in a very exhausted state.

The life-boat was at once launched to windward of the stranded ship, the ground sea being tremendous. After a pull of more than an hour the boat reached the vessel. As she was pulling under her stern a huge wave struck the boat, capsized her, and the whole crew were at once thrown out. The life-boat turned up again on the self-righting principle and all the crew got into her excepting two. The coxswain, brave old Carbis, was jammed under the boat by some wreckage and nearly lost his life, having to dive three or four times before he could extricate himself. When dragged into her he was apparently dead, in which state he was taken on shore. Another man, Edward Hodge, was nearly lost altogether from the boat, and all were so exhausted that they could not save him. But he was saved by his cork jacket which floated him ashore, when a man swam his horse through the surf and rescued him. The life-boat put off again with a second crew, Captain Cay, R.N., Mr. Blackmore, chief officer of the Penzance Coast Guard Station, and Mr. S. Higge, junior, the French vice-consul, went off as volunteers, Mr. Blackmore, as coxswain. A correspondent describes what followed, "The boat had to be pulled to windward against a tremendous wind and sea. Sometimes as she rose almost vertically to the waves as we looked at her we feared she must go over. Still she gained a yard, and thus inch by inch, and by the excellent management of Mr. Blackmore she gained the wreck." Eight men were saved from this wreck: in ten minutes after they were rescued the masts went, and in half-an-hour more the vessel was broken into chips, and now lies scattered on the shore. On no occasion of saving life from wreck were finer specimens of gallantry ever displayed.

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THE LOSS OF THE HIBERNIA, AND THE VOYAGE OF HER BOAT  
No. 3.

THE following being a narrative of suffering and loss of life consequent on the sinking of the *Hibernia*, New York Packet, about 700 miles at sea, it is the province of this work to serve as a reference as far as we can make it for such matters; and we therefore preserve it for our own readers. Happily such occurrences with passenger ships are rare, although the gales of the present season of the year have been prolific in producing disasters at sea (so numerous now as to be beyond the power of these pages to contain them) yet so miraculous an escape from death of the very few who reached the shore in the *Hibernia's* boat No. 3, is presented in this narrative, that we exert our utmost to make room for it. It will be remembered that the *Hibernia* (s), from New York for Glasgow, foundered 700 miles off the Irish coast, 25th November. The captain's boat and another were lowered, and 51 persons in all were seated in the boats. They were picked up and landed at John o'Groat's. It was reported that one of the boats, containing 33 persons, was swamped. Two more boats, containing 50 persons are missing. A boat has since arrived on the Donegal coast, containing—William Davies, second officer; Peter Blair, quartermaster; and John Reilly, able seaman. The boat originally contained 28 persons.

It is the account of this last boat that is here related.—The passengers and crew of the *Hibernia* who were picked up on the night of the 25th November, arrived in Glasgow. The additional narratives thus obtained, in all essential particulars confirm that of Captain Munro. The upsetting of the boat in charge of the chief mate is attributed to the fact that it was heavily laden, that there were several women and children on board, and that, notwithstanding the difficulty of managing it in such a gale, a sail was hoisted. Two missing boats were commanded by experienced seamen, and as they would naturally steer into the channel of the West India and American traders, it is probable that they may have been picked up. But exposure to the elements in such a storm for any longer period than twenty-four hours would open out before the ill-fated castaways the prospect of a far more dreadful fate than that which befell those in the boat commanded by the chief mate.

Captain Munro, in his narrative, states that the *Hibernia* left New York on Saturday afternoon, November 14th, with 133 souls on board, including a crew of fifty-nine, all told. When leaving New York a pretty stiff breeze was blowing, but it was by no means severe till the day before the accident, which caused the loss of the fine steamer, occurred. On Monday, the 23rd, there was a heavy gale of wind from the south-west, which caused the vessel to labour; and on Tuesday morning, at two o'clock, the screw-shaft broke in the stern-pipe, and the screw, consequently getting loose, damaged the sternpost of the

steamer, to which the rudder is attached. The "pipe" itself was also damaged by the then unconnected screw; and the result of both these most untoward circumstances was the ingress of large volumes of water into the after-part of the vessel. A heavy gale was still blowing. During the whole of Tuesday the crew and others were engaged in throwing cargo overboard to lighten the ship, and the engine and other pumps were kept going, but the effect produced was not material. While this was going on, the passengers behaved admirably. Everything was done decently and in order. On Tuesday night the course was changed to north-west; and on Wednesday morning, the 25th, the situation became so critical that all the boats were lowered. Long before this, the after-hold was flooded with water, and the *Hibernia* seemed to be rapidly sinking—indeed, there was, when the boats were lowered, 10ft. of water in the after-hold. At six o'clock on Wednesday morning they began to embark the passengers in the boats. A certain number of ladies was appointed to occupy each boat along with a proportion of the crew. At seven o'clock all the crew and passengers were in their appointed places. The water in the *Hibernia* was at this time increasing rapidly, but still all was done quietly. The ladies were lowered into the boats by a rope attached to their waists, and the transference from the large steamer to the small boats was effected in the utmost silence. The captain says the passengers went down as if it were a forlorn hope—they seemed as if leaving the ship to go to the bottom—there was no excitement, but the utmost tranquillity and resignation.

The passengers and crew were draughted into the different boats, which were brought round to the lee of the steamer. No. 1 life-boat was under command of Captain Munro; No. 2 life-boat, chief mate; No. 3 life-boat, second mate; starboard-quarter boat, third officer; port-quarter boat, the boatswain. The captain was the last to leave. After getting about a quarter of a mile from the sinking ship, she went down stern foremost. This occurred about twenty minutes past seven o'clock. Up to this very moment the engine pumps had been kept going. They were working when Captain Munro left the foundering ship, as the depth of water in the engine-room was so great that the engineer could not get down to stop them. When the captain left the *Hibernia* the top of the poop-deck was in the water. So far as possible, each of the boats was equally provisioned. Captain Munro states that on board his boat he had two barrels of biscuits, three small breakers of water, each containing fifteen or twenty gallons, with a few preserved meats. At about half-past seven o'clock the chief mate's boat, containing thirty-three persons, capsized. At this time the captain's life-boat was about a quarter of a mile from that of the chief mate; but, owing to the gale then blowing, and the crowded state of his boat, Captain Munro was unable to render any assistance. So critical, indeed, was his own condition, that he had to keep two men working at buckets, a couple more being busily engaged plying hand-basins to keep the boat afloat. To lighten her, the occupants had even to throw overboard one of the barrels of biscuit; and some

of the ladies threw off their shawls and outer coverings to enable the boat to keep her buoyancy.

In the evening Captain Munro and his companions in No. 1 life-boat were picked up by the ship *Star of Hope*, Captain Talbot, from Quebec to Aberdeen. Having been considerably cared for, Captain Munro suggested to Captain Talbot that a look-out should be kept for the other boats. Captain Talbot agreed; and, lights being hoisted, a look-out was kept, when the boatswain's boat was descried between eleven and twelve at night, and the occupants were rescued. A heavy gale still prevailed, but the weather shortly afterwards moderated considerably. The search for the other boats was continued by the *Star of Hope*; but, after cruising about for thirty hours, Captain Talbot gave up the fruitless task, and bore on his course. The two boats rescued contained altogether fifty-two persons.

The rescued passengers are warm in their praise of Captains Munro and Talbot.

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ON Sunday morning the three survivors of No. 3 Lifeboat (the second mate's)—Mr. W. Davies, second mate; Mr. Peter Blair, quartermaster; and Mr. John Reilly, able-bodied seamen—arrived in Glasgow from Londonderry per the steamer *Garland*. Their general appearance was of the most satisfactory character, and evidently showed that every care had been taken of them since their landing on the shores of Donegal, and every means applied to bring them round from their exhausted state. They walked lame, and with the aid of the stick. Their hands and feet are still somewhat swollen and present the appearance of slight sores. They, however, speak of being in first-rate condition, and having good appetites, and are of opinion that in a few days they will be in a great degree convalescent.

Mr. Peter Blair, the quartermaster, has furnished a statement of the sufferings of the crew, in which he says:—"We were the third boat launched from the *Hibernia*. We were very well provisioned at the time we left. There were in all in our boat 28, among whom were the second mate, Mr. Davies, John Reilly, and myself. There were also, as far as I can recollect, Hugh M'Lean, Daniel M'Laren, fireman; Hugh M'Leavie, A.B.; Hugh Robertson, first pantry steward; James Watson, second pantry steward; John M'Kinlay, third cook; John Ross, cook's mate; William M'Kelvie, third engineer; Robert M'Arthur, fireman; Walter M'Farlane, trimmer; Eliza Johnstone, Belfast; Catherine Myers, Londonderry; John Magee, Catherine Magee, Samuel Brewster, Francis Rodgers (supposed to be a schoolmaster), and six or seven women, with three children, one an infant. After we pushed away from the *Hibernia* we fell behind in consequence of our being able to pull only two oars—the boat being so full of people there was no room to pull more. The boat was a life-boat, and was about 22 feet long, with a beam of about seven feet. She leaked badly, and we had to keep at least two persons baling her to keep her afloat.

After being some time on the water we saw the mate's boat making sail and we were going to make sail too, but were immediately afterwards attracted by cries of help from the mate's boat. He was standing up in the boat with his hands up, imploring us to come to his assistance. We rounded as best we could, to see if we could render any help to him and his boat, but found we could not, as it was as much as we could do to keep our own boat afloat. While we were rounding we saw his boat capsize, and all were thrown into the sea. I am of opinion that at that time the third mate's boat, which is reported as still amissing, went to the assistance of the mate's boat, and that some of those unfortunate persons who were struggling in the sea got hold of it, and were lifted in; and, therefore, my firm belief is that that boat also was swamped by the heavy load she had on board. I cannot, however, speak positively of this, as we were not in a position to ascertain exactly.

We soon parted company with the other boats, and put out an improvised floating anchor, consisting of two oars and a tarpaulin lashed together, and lay-to all that night. The next morning we made sail, and proceeded to steer E.S.E., that being the direction of the Irish coast. We nailed canvas around the bulwarks of our boat in order to keep out the sea, and we laid a tarpaulin over the bow to protect the women and children as much as possible. For this they seemed very grateful, but did not want any food during the whole of that day, their anxiety being too great. On Thursday, through the day, a passenger who had become somewhat deranged jumped overboard. He had one boot on and the other off, and he told us he was going into his bed to look after the missing boot. That night we had a strong breeze, and I am sure we went at the rate of nine knots an hour in the direction of land. This inspired us with hope, and everyone became more buoyant; but the next morning was a calm, and all that day we had to work our two oars, and only went at the rate of two knots an hour. This again depressed several of our male passengers.

That morning (Friday) Francis Rodgers, supposed to be a school-master, who had frequently previously exhibited signs of raving madness, jumped clean out of the boat and was drowned. His disposition had been for some hours of most quarrelsome nature, and he begged of us to mend the holes in his trousers, saying that he could not go home with them in that state. The calm remained all that night and the next day, but we still kept slowly on our course. Our provisions, however, began to get very scarce. That was in consequence of our having to throw a quantity overboard on the first day, in order to make room for the passengers. The barrel of biscuits we had had become damaged with salt water on the first day. For the first two days the mate served out a 'dipper' of water to each person, and a little bread and preserved meat; but he found, as day by day passed away, that he would need to limit the supply, and the quantity to each was reduced first to a 'dipper' of water between two, and then the same quantity between four persons.



Sunday night was a nice calm night, but very unfavourable for us to proceed at any pace on our journey to land. All, however, were in tolerable good spirits. The only grief was that the poor women suffered a great deal from their limbs being cramped. It was very dangerous for them to move, but still we did what we could to relieve them. Two of the women were married, with children, and the other two were unmarried. We raised one woman at the time and rubbed her legs to circulate the blood a little. No tongue can tell what our position was as day by day rolled on. We shifted for ourselves as we were able, and all did their best to assist each other. I was occasionally called upon to spin a good yarn to the party, and I did my utmost. I collected my thoughts and told them stories of what I had previously undergone, and now and then would colour the story a little, at the same time telling them that our sufferings were nothing to what myself and others had undergone on former occasions. None seemed to think of their happy homes that they were doomed perhaps never to see more, and no request of any kind was made to either on board to see their relatives if perchance they were saved. All were resigned to their fate, and it was as much as could be done sometimes to cheer up their spirits. One old Irishwoman was indefatigable in her efforts to keep up the spirits of all on board. She would get the women into a line of conversation, and by her drolleries would cause them to laugh heartily. We told her that she ought to wear the 'breeks' if ever she got ashore, and she replied that she was determined to do so. She would say to the women that they were not to sit there and cramp themselves, but should get up and stretch their legs. Notwithstanding the utter resignation all expected to get on shore, and would congratulate themselves on what they would do when they succeeded in doing so. I told them that perhaps we should see a ship shortly, and it was astonishing to see how even that hopeless conjecture cheered them up. It was pitiful to see the dear little infant, which was only about six months old, and whose mother had no milk to give it. We moistened biscuits for it; and sometimes you might see it, young as it was, endeavouring to eat a piece of a hard one. We had on board two bottles of gin, and one of wine, and we gave the women and children the gin to drink, and the bottle of wine was stolen by some one after we left the *Hibernia*. After the water became so scarce some of the men took to drinking the salt water, and notwithstanding all our endeavours to dissuade them from such a practice, they continued to do so. This soon told on them, and they became raving mad.

On Wednesday a passenger named Samuel Brewster, an old man, died from exhaustion, after having become raving mad. In fact, by this time, delirium was apparent in a great many of the passengers and crew, and it was as much as he could possibly do to exercise control over them, in some cases force having to be resorted to. Walter Macfarland, a fireman, was one of those who was continually drinking the salt water, and he became so very obstreperous that we had to secure him to a portion of the boat, in which position he died. Our journey towards the land had continued for some time to be of a slow

nature, and on Thursday we did no better. On the morning of that day a woman and a child died, and were thrown overboard. That circumstance was a matter of grief to us all, and had a terrible effect, especially upon the other women. The shock was, however, soon increased, for another child died immediately afterwards from what we thought lockjaw. The body was also consigned to the sea. The weather remained calm this day; but our tarpaulin sail had bothered us a good deal, it having broken several times.

On Friday morning we calculated that we had sailed upwards of 450 miles. It came on to blow again that day. In the earlier part of the day the poor little infant succumbed to the deprivations it had suffered, and our hearts were heavy indeed. We were one and all wet through to the skin, and large quantities of water came into the boat by the heavy seas that occasionally broke over us. Several of the limbs of the persons began to swell very much, and caused great agony. As night came upon us that day a woman died. We did not, however, become cognisant of the fact till some time afterwards. A little before twelve o'clock that night a high wind arose, and we had our sail up at the time. The sea was very heavy, and all our passengers that remained were completely exhausted. Several of them lay down to sleep a little, and I was dosing at the time. Several of the others afterwards appeared to be sleeping on their hands, when a wave struck us, and caused a number of persons to fall to the lee side of the boat.

Then followed the most unhappy of all our occurrences, for at a moment's notice the boat was capsized and all of us were thrown into the sea. We struggled in the water for a short time, and the cries of some of our number were most pitiful. I saw John Reilly get on to the keel of the boat as she lay bottom up, and I immediately endeavoured to do the same. Reilly saw me, and assisted me to get up, but one of the stewards had hold of the leg of my trousers. I said to Reilly, "Is that you, John?" He replied in the affirmative, and at the same time I shook myself free of the person who had hold of my trousers, and was assisted by Reilly to get on to the keel of the boat. In a moment or two afterwards Davies rose to the surface of the water, and shouted for help. Some one, likewise, had hold of his leg, and it was with difficulty that he was able to float. Reilly caught him, and also pulled him to the keel of the boat. Then I saw William Mack, a seaman, swimming towards the boat, and for a long time he kept above water. I would have assisted him if it had been in my power, as would also Davies and Reilly, but we could not. Maclean, a fireman, had hold of Mack. At the time we heard another fireman swearing most fearfully. He appeared to be raving mad. We three had remained on the keel of the boat for about twenty minutes, when we heard a voice cry from below it, "Hallo!" We answered, but could not by any possible means render assistance to the person, as the waves were breaking over us at the time, and it took us all our time to hold on.

We had been on the keel for about an hour, when we were again washed off by an immense wave. We were not, however, washed far

away, and I managed to get on the keel again. Reilly then came up arm and arm with Davies, and I assisted them both up to the side of me. No one but ourselves can conjecture, I am sure, the awful position in which we were then placed; but, notwithstanding that our feelings were of the most agonising nature, our hopes were still buoyant, for we felt confident that every sea would right the lifeboat. As the sea came on we let ourselves down to the side of the boat to assist it to right, but it refused to do so. About four o'clock in the morning, after having been in that position for above four hours, the boat righted itself. Our feelings while we were on the bottom of the boat were awful, and Davies said that about half an hour would do for him; but Reilly told him to cheer up, for where there was life there was hope. However, we all felt that we could not exist long if the boat did not right itself.

I had hold of a portion of the rigging, and was first to get into the boat again. Davies and Reilly hung on to the sides of the boat, and I assisted them in. Our mast and sail were still left to us, but our boat was full of water. We saw floating by the side two pieces of wood, which we succeeded in getting, and with these we baled a quantity of the water out. Still we were taking in water, and our progress was very slow. Notwithstanding we had had no food from the time the boat upset, we did not feel very hungry, but were dreadfully thirsty. Our anxiety was great, when it came on to rain very heavily during the night. The thought struck me then to tie my handkerchief to the mast, so that it might get soaked with the rain. It did, and I occasionally sucked it, and my throat was relieved a little. Davies and Reilly spread their oil-skin coats out to catch the rain, and caught a quantity of water, which they drank. The mate also wiped the sides and seats of the boat with his handkerchief, and licked it. This was the first water we had tasted since the capsizing of the boat on the Friday evening previously, and during the interval we had suffered such agonies from thirst as reduced us to the extremity of drinking our own urine.

After the rain our spirits grew better, and we felt quite strong again, and confident that we would get ashore in the morning. Early in the morning we again set sail, and steered by turns. We made for the land as fast as we could, remarking that we would beach the boat at the first place that was suitable. We looked at every point, and at last saw a nice sandy spot. No time was lost in making for it. A number of people had observed us by this time, and they hailed us to make in at another point, but we kept our way to the sandy spot, determined to run her up as high and dry as possible. In this we succeeded, for a wave landed us well on the beach. The second mate and myself jumped out of the boat first, and it was not till then we discovered our weak state and inability to walk. The people kindly assisted us to a house, and so anxious were they to supply our every want and pay us every attention, that they placed us before a huge peat-fire, which had the effect of causing our legs, arms, and hands to swell immensely, and gave rise to sufferings more intense than any-

thing I experienced during the whole of the twelve days spent in the boat."

One of the passengers saved from the *Hibernia*, Mr. Patrick Brewster, nephew of the late Sir David Brewster, died at the house of his brother, Dewar Place, Edinburgh, on the 10th instant. Deceased, who was in ill-health when he left New York in the ill-fated *Hibernia*, was in the thirty-ninth year of his age.

It was well for the unfortunate trio who got safe on shore that the westerly winds continued. Had they not been favoured with these nothing could have saved them.

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#### WRECK OF H.M.S. RATTLER.

WE are sorry to have to add to our account of numerous wrecks the following narrative of the loss of H.M.S. *Rattler* on the coast of Japan.

The *Japan Times Overland Mail* gives the following account of the wreck of H.M.S. *Rattler*:—The *Rattler*, steam sloop, 17 guns, 952 tons, 200-horse power, left Yokohama on the 9th of September last, having on board Messrs. Adams and Satow, of the British legation. For some years Russia has been making gradual encroachments on the Island of Saghallen, north of the Japanese Islands proper, to which we have more than once drawn attention in these columns. Lately rumours reached Yokohama that an attempt was making to encroach still further, into the Island of Yesso, in fact, and to establish these or dissipate these reports was the object of the *Rattler's* cruise. They turn out to have been without foundation, but a heavy price has been paid for the information.

The *Rattler* touched at Hakodate, took in coal and wood, and passed up along the west coast of Yesso. The first point at which she looked in was Iwanai, a small port within a couple of miles of which is a coal mine, worked for the Japanese government by an English engineer, Mr. Erasmus Gower. Passing Strogonoff Bay, into which falls a considerable river, navigable for several miles, the *Rattler* proceeded into the Straits of La Perouse, between Saghalien and Yesso, and entered Romanzoff Bay, in which is situated the village of Soya, a point particularly requiring examination. Soya is the extreme Japanese station on the island of Yesso, whence travellers pass across to Saghalien, a distance of 43 to 50 miles.

Romanzoff Bay has for its north-west point Cape Nosseyab, the extreme north-west point of Japan, the other horn being Cape Soya. On entering this bay in the early dawn of the 24th September, everything lay fair and calm before the ship, not a breath of wind ruffled the surface of the sea, and the lead gave nine to ten fathoms in both chains as she slowly and cautiously felt her way in. Suddenly, a few minutes before six—when the leadsman had just given eight fathoms

and was swinging for another cast, she struck. It was soon seen that she was in an almost hopeless *guet-à-pens* (ambuscade of rocks). Under the deceptive calm water lay a series of reefs, stretching in long succession right in front of the port and about a mile and a half from shore. They lay like a comb in the ship's path, and between two of the teeth her bows passed, and she lay imprisoned and helpless. Everything was immediately done that was likely to draw her off; four of the sternmost guns were hove overboard and buoyed, anchors taken out and laid—but all was of no avail. About 3 p.m. it came on to blow, and then was seen how hopeless was the condition of the ship. All round her were reefs, a wash at low water, and as the swell began to lift her, she crashed down upon the rocks and commenced to roll in a manner that threatened soon to break her up.

It was clearly time to think of providing for the safety of 149 people on board, and preparations for landing men and provisions were accordingly begun. The wind was from the S.W., so that there was no imminent danger, but the night of the 24th was an unpleasant and anxious one indeed, communication with the shore being impossible, owing to the dangerous reefs between it and the ship. At 3 a.m. on the 25th, the whole of the engine-room being stove in and the rudder knocked off, the vessel began to fill, which steadied her. On the morning of the 25th the officers' and men's bedding and clothes, with the greater part of the provisions, were landed. In the afternoon, the barometer falling and the wind shifting to the N.W., everybody was landed at sunset. A gale came on from the same quarter, which lasted for two days, rendering all communication impossible, the seas making a clean breach over her. Houses were then prepared on shore for the crew and officers, sentries set, watches kept, and all went on in good order.

The men behaved very well. Perfect discipline prevailed, there were no attempts to break into spirit-room or stores, and all worked hard with a will to save guns, stores, small arms, sails, chains, anchors, and rigging. The engine-room having been stove in, the machinery could not be got out, but almost everything else, to the masts, which were cut out of her, was taken on shore, properly stored, and left in charge of Japanese officials. We need not dwell upon the small events of the sixteen weary days which elapsed before relief arrived. The country is very thinly populated, bare of wood, and apparently holding little game. Quantities of duck and plover were got along the edge of the bay, and salmon was in absolute profusion. Nine miles across from Soya, near Cape Nosseyab, is a small river, and there, at a village called Koito, is a salmon fishing station. Fishing and drying seaweed constitute the trade of the place, and as many as two thousand salmon are taken in a day. The trade is farmed by a guild in Hakodate, and their agent at Soya was the chief man in the place, and rendered good service to the shipwrecked crew.

Meanwhile, a message had reached Hakodate overland, and Capt. Du Petit Thouars, who was there with his Imperial Majesty's ship *Dupleix*, lost not a moment in starting to the relief of the *Rattler*. His ma-

chinery was undergoing repair and his ship was without coal, but by working double tides all through the night he managed to get away the morning after the news reached Hakodate, and, steaming her best, the *Dupleix* reached the scene of the disaster on the 9th of October, forty-eight hours after leaving Hakodate, and embarked the shipwrecked crew. Nothing could exceed his courtesy and attention, or the kindness and consideration of his officers and crew. He insisted on giving up his own cabin to his guests, creeping himself into some berth down in the cockpit, and the whole starboard side of the lower deck was given up to the *Rattler's* crew. All arrived in safety at Yokohama on the 17th. There is generally some redeeming point, some cause for cheerfulness in most misfortunes; and in this one we may certainly greet through this illustration of the *entente cordiale*. Altogether, to use a common phrase, the very best was made of a bad job, and, though England has lost a ship, the intelligence of her officers, the good discipline of the men, and the exertions of a truly friendly ally have saved a fine crew without a single casualty, and we have every reason to congratulate ourselves that so little harm had been done.

[Although we wanted no occasion for the display of those friendly feelings towards us on the part of the French navy, such noble conduct as that of Captain Du Petit Thouras must secure him the admiration of every one.—ED.]

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NOTES OF NOVELTIES.

THE *Hants. Telegraph* gives the following concerning the New Board of Admiralty:—The right honourable gentlemen constituting the new Board of Admiralty, resulting from the late change of Ministry, commenced their official duties, at their offices in London, yesterday, 22nd December. We believe the constitution of the new Board is as follows:—Mr. Childers, M.P., First Lord; Vice-Admiral Sir Sydney C. Dacres, Senior Sea Lord; Vice-Admiral Sir R. S. Robinson, Second Sea Lord; Lord John Hay, Third Sea Lord; Mr. Trevelyan, M.P., Junior Lord. We (*U. S. Gazette*), understand that it has been arranged that the houses at the Admiralty, lately occupied by Admiral Sir A. Milne, and the Secretary, are to be prepared for the occupation of the Steam Department, now located in New Street, Spring Gardens. Thus the Constructors and the Steam Departments will now be contiguous, and business will be thereby greatly facilitated.

In the course of his speech, on his re-election, at Pontefract, Mr. Childers is stated to have said, he had accepted office on the clear understanding that the responsibility should be placed distinctly on himself as the Minister responsible to the Crown and to the country

for carrying out the public wishes: and those who were associated with him at the Board of Admiralty fully recognised this fact, and would, while he was in office, perform their share of the departmental administration in direct subordination to himself. He should endeavour to increase to the utmost the efficiency of the navy, to put or continue the navy of England in that state in which the country expected the navy to be—the navy being her especial pride, and her first protection in the event of foreign difficulties; and he should be the last, from false motives of economy or from any other cause, to allow our navy to fall below the standard at which it ought to be. But he should do all in his power to lop off those excrescences and redundances of administration which, in his opinion, were sources of weakness instead of strength. What we wanted was a strong navy, a navy in which the appliances should be the best that could be obtained from the improvements effected by modern science, appliances placed in the hands of men thoroughly trained and disciplined, and, above all, made contented with their positions, and this he believed could be effected without interfering with such reforms in the administration as would lead to such economy and reduction of the the public burdens as would be satisfactory to the taxpayers of England. More into detail he felt sure they would not ask him to go, and more into detail it would not be right that he should enter. If he failed, it would not arise from any want of anxiety to do his duty, and if he succeeded he should have the satisfaction of knowing that he had been able in office to carry out those principles and opinions to which he had given expression when out of office to Parliament and to his constituents.

Such sentiments could but meet the approval of every one, and the new Board has our cordial wishes for success.

In our last Number we noticed the proceedings, before the Lord Mayor of London, in a case of discipline in one of our merchant ships that reflected no credit on the system by which that was carried out, but which we fear has become too common in that service. The case of the mate of the *Mofussilite* is given there in some detail; but the brief manner in which it has been disposed of in a court of law is thus summarily despatched in a recent number of the *Daily News*. Thus we read in the paper of the 19th of December:—"In the Common Serjeant's Court a case was heard, in which it was proved, that on the 23rd of June last, while the *Mofussilite* was conveying troops from Bombay to Calcutta, the second mate committed a violent assault on a midshipman, a youth nineteen years of age. On the vessel arriving at Calcutta the young man was taken into the hospital, where he died a few days afterwards. A sentence of two years' imprisonment with hard labour was passed."

We promised not to lose sight of the transaction, and are glad to find that justice has overtaken the oppressor.

## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 707.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen Mls	[Remarks, etc. Bearings Magnetic.]
106. Gambia	M. River	Barea Point	...	...	...	And also on Cape St. Mary, not lighted nor to be depended on.
107. Plonguer-neau	France, N. Coast	Lanvam	F.	170	12	Est. 15th November, in lieu of Plonguerneau S. E. by E. $\frac{1}{4}$ E., $\frac{1}{2}$ -mile from Isle Vrac'h Light.
Platus and Jumeuto rocks	... ..	... ..	...	...	...	These rocks are now marked by beacons.
108. Strutt reef	Algoa Bay	... ..	...	...	...	See Notice No. 108 for marks.
109. Mauger Cay	Belize	17° 37' W. 87° 46' W.	F.	53	13	Est. Three Lights facing N.E. and S.W., two lower 49 feet, the upper 53. See Note 109.
110. Roche Douvies	... ..	49° 6' 5" N. 2° 48' 9" W.	Fl.	144	14	Est. 15th December, 1868, Eclipsed every five seconds.
111. Chanak Shoal	Dardanelis	Buoys	...	—	...	Two red buoys $\frac{1}{4}$ cable from shore. Within the buoys only 8 feet water and eddy current.

F. Fixed. F.f. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

No. 107.—This light in one with the Vrac'h isle light, bearing S.E. by E.  $\frac{1}{4}$  E., is (as formerly) the leading mark for the outer part of the main Channel of Abervrac'h.

No. 108.—The shoal, named *Strutts reef*, is about 50 square yards in extent, and has 15 feet water on it at low water springs. The shoal lies with the Water pipe and reservoir house in a line with the two southernmost houses of the town bearing W.  $\frac{1}{4}$  N.; Scotch Church spire in a line with square tower of St. Mary's Church; Bird rock S.S.E.; Harbour lighthouse N.W.  $\frac{1}{4}$  W.

*Clearing Marks.*—The tower of the Mosque (which is red) open of the North end of the breakwater, and the tower of the Grey Institute open to the northward of the harbour lighthouse, clears the shoal in 25 feet water.

*Variation 29 $\frac{1}{2}$ ° Westerly in 1868.*

No. 109.—The lights can be seen above the trees from all points of the compass, but the lighthouse is seen from seaward alone from N.E. to S.W. by W.

An American barque named *Java the Second*, has had the temerity to run through the Sooloo Sea, skirting in her way a nest of rocky shoals that have long had their place on the chart. The commander of this craft may consider himself very fortunate that he did not leave her bones there, for there is not a more dangerous sea in the whole world, one more



abounding in rocky shoals of which we know little or nothing. However, we preserve his account of what he saw, merely remarking, that the bottom which he saw alongside belonged to that series of small islands called St. Michael's, to which he alludes, and as no part of this little troublesome archipelago of rocky islets has been surveyed, we recommend all navigators to give them a wide berth in future, and not to attempt taking any liberties with them, for they and their outlying reefs are all unknown.

Here is the account which *Java the Second*, has given of her adventurous escape from—

A DANGEROUS SHOAL.—“Captain Kempton, of the bark *Java the Second*, New Bedford, reports the following in the *New York Herald* :— ‘On my passage from Singapore to Samboangan, after passing through Balabac Straits, I steered to pass between St. Michael's Island and the Island of Bancarin (I have James Inray and Son's chart). At 7 p.m. was surprised at seeing bottom alongside; cast the lead, and got 6 fathoms coral. There being a very light air at the time, stood along a-piece and got 5 fathoms. Lowered a boat, and went around and found out ahead of the ship quarter less 5 fathoms. I let go my anchors and laid there during the night. The next morning, it being calm, I took a boat and sounded on different parts of the reef; in some places I got as little as 2½ fathoms; the most water 5 and 6 fathoms; it appeared to be steep, too, on the side I was on, the south edge, as in about two ships' lengths, it deepened from 5 to 25 fathoms. The southern edge of the reef made about S.E. and N.W.; I went to masthead and looked over it, and should think it N. and S. about half a mile, N.W. and S.E. about a mile. By observations I made, it is lat. 7° 52' N., long. 118° 28' E., not very good observations, as it was cloudy and overcast weather. The most northern of the St. Michael's Islands bore S.W. by S. ½ S.; the Island of Bancarin N.E. ¼ N., and Mount Mantaleengahan (or Pelwan) N.W. 9 a.m. a breeze sprung up; took up our anchor and stood to S.E. between the reef and the most northern portion of St. Michael's Island. Saw no more dangers.

Shanghai, October 14th.

A lighthouse is being erected on the Gubleaf Island (at the mouth of the river Yang-tse-Kiang), and will be completed in May next. Attempted outrages on foreigners are again reported from Formosa. The anti-missionary mania is spreading as far as Shanghai.

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#### NEW BOOKS.

NAVIGATION AND NAUTICAL ASTRONOMY, ETC., for the use of Students and practical men. By John Merrifield, F.R.A.S.; and Henry Evers, Author of “Navigation,” etc.

RESUMING the thread of our notice of this work from our last Number, we have now to glance through that important branch of navigation formed by nautical astronomy,—the unerring foundation in fact to which all the results of what is called the “dead reckoning” must be subject for correction, and forming the second part of this work.

Notwithstanding a fair elementary education is tolerably sure in these days, including the knowledge of spherical trigonometry; the

student here is initiated into the circles of the sphere (being perhaps expected to know less of them than of geometry), and he is exercised in them as well as on the nature of time, projections of the sphere, azimuth and altitude, when he is introduced to the principles and use of instruments employed at sea for obtaining these elements, and first, of reflecting instruments, the quadrant and sextant. These are fully treated on with their necessary adjustments, how obtained with all those disturbing influences affecting observations, refraction, parallax, dip, etc., the corrections for which are essential to truth in results. And in all these subjects and their numerous collateral attendants, care is very judiciously taken to exercise the student at the end of each portion of a subject with a series of questions, throwing him at once on those resources with which he has stored his mind as he has proceeded through them. This is a new feature in works of this kind, essential when tuition is the object, and applicable as a valuable test of his thorough knowledge of his subject as he advances.

The management and use of the chronometer are well treated on, that invaluable problem of Captain Sumner is also explained, without which no treatise on navigation would be perfect; the Lunar theory and the observation of occultations, as well as Jupiter's satellites complete the latter part.

The authors have evidently neglected no process employed by the Navigator for the perfection of their work; leaving him to adopt any tables of logarithms to his taste (all essential as they are) on which tables he must depend for his calculations. Thus the work before us is more adapted for students *on shore* than the Navigator *at sea*, who would be disappointed if he expected to find the tables which generally accompany works on navigation. But they have produced a work which will *make* the navigator, and by the excellent system (which we have seen in no other work) of that examining process at the end of every separate portion of their subject, they compel the student thoroughly to comprehend the rationale of his progress, and in fact oblige him to see features which he would otherwise pass by unnoticed. We cannot too highly commend this most important measure, as signalizing the work before us from all others on the subject.

We have always considered the Navigator fortunate who has to use Raper's concise and elegant work on the practice of navigation. And in conclusion we may observe, that as explaining thoroughly all the problems of navigation, the student will find in the work before us ample enlargement of examples as well as questions for exercise, and which to prepare him for the future navigator contain everything that can be desired.

**GERMAN SIMPLIFIED: A SHORT AND PRACTICAL GERMAN GRAMMAR for English Students.** By Harriet M. O. Ward. London: Simpkin, Marshall, and Company, Stationers' Hall Court; and T. M. and A. Warren, 1, Edwards Terrace, Kensington, 1868.

It was not proposed that the *Nautical Magazine* should be an authority for Grammar! much less that of the great German race! and

yet our word is claimed for making known to our own readers the virtue in the art of teaching that language possessed by the fair authoress of these very moderate pages. Well, we can pronounce on an authority high in scholastic learning and teaching, that, so much is such a concise grammar of German as this wanted, that it has forestalled the intention of producing one for a great English school. The fact is that English grammars produced by Germans are too minute, and main principles become difficult to extricate from the minutest of multitudinous small matters abounding in that language. The grammar of our fair countrywoman has won admirers by the straight road it marks out for the student; initiating him into the difficulties he has to surmount by "not perplexing him (as she says) with nice distinctions, but laying down for him well defined laws on which a more intimate acquaintance with the niceties of the language may at a later period be based."

Thus the road is clear, safe, and easy, especially for the English student, and the rules which he finds in his way are each admirably illustrated by appropriate extracts, and capital elementary dialogues: contained we may add within the compass of about one hundred and thirty post octavo pages. We can safely add for our readers who desire to learn German—"adopt it."

We know from a high authority at a College that this Grammar is an admirable introduction to the German Language, and are satisfied that its size and cheapness are no obstacles to its general adoption.

WE are glad to announce the appearance of the Admiralty list of Lights of the British Islands *corrected to January, 1869*, from the industrious hand of Commander E. Dunsterville, R.N., of the Hydrographic Office.

CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in December, 1868.—Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill. London.

2403 DE and  $\frac{DE}{2}m = 0.66$ . Singapore Strait, 1867. 3s. 6d.

930  $\frac{DE}{2}m = \text{various}$ . Moluccas Anchorages, Limbo Strait, Sannana,

Wahaay, Haliling Bays, Ternate Road, etc. Dutch Survey, 1847. 1s. 6d.

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LIGHTHOUSE BOOKS, Ten in Number, corrected by Com. Edward Dunsterville, R.N., to January 1st, 1869. From 6d. to 1s. 6d. each.

EDWARD DUNSTERVILLE, *Commander, R.N.*

*Hydrographic Office, Admiralty, 21st December, 1868.*

THE  
NAUTICAL MAGAZINE

AND

NAVAL CHRONICLE.

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FEBRUARY, 1869.

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NOTES ON THE VOYAGE FROM SOUTHAMPTON *via* PANAMA TO NEW  
ZEALAND, WITH AN ACCOUNT OF RAPA ISLAND.\*

STARTING from England by the Royal Mail Steam Packet Company's splendid screw steamer *Tasmanian*, after a most delightful passage of little more than sixteen days from Southampton Docks (pleasantly breaking the voyage by touching at Water Island, near the harbour of St. Thomas), we found ourselves moored alongside the wharf at Colon.

This part of our voyage has been so often described and is so well known—that it were “twice tedious” to enter into more particulars,

\* “14, CANONBURY PARK SQUARE, N.,  
“December 31st, 1868.

“*To the Editor of the Nautical Magazine.*

“DEAR SIR,—The enclosed notes have been forwarded me by a passenger from Panama to New Zealand; and as they refer to matters of interest to the Nautical profession as well as to the general public, probably you may deem them worthy of insertion in your valued publication. You will observe that very particular mention is made of the Island of Rapa, about which little has hitherto been known, and you will also notice that an important change has come over the dangerous natives of Easter Island, a matter certainly for congratulation.

“Yours,  
“NEWMAN VINE HALL.”

[The English Company who run their boats from Panama to New Zealand and Australia may be well pleased to see so interesting an account of this voyage from the pen of a gentleman who shews himself to be fairly qualified for the task. It was time that their progress was published and that British subjects who are so much interested in the route should know something of the diary of these voyages and their belongings. And this being the first we have seen, and which we owe to the consideration of an old and valued correspondent, we congratulate the Company on their success. ED. N.M.]

than that we had a fine fast ship, a jolly captain, good officers, and a voyage thus far, which in remembrance seems more like a pleasant dream than a reality.

But my destination, and that of several of my fellow passengers being by the comparatively novel and less known route, *via* Panama to New Zealand, it seemed to us as if we were only now beginning the real business of the voyage, and thus these few notes of this part of our journey are jotted down for the information of those who may be travelling hereafter the same road.

In our passage through the region of the West Indies we felt the heat—so much dreaded—but little, if anything, greater than that of the English summer we had just left behind us. Indeed, the thermometer had never been above  $85^{\circ}$  in the shade, whilst in England, before leaving, it had stood  $3^{\circ}$  or  $4^{\circ}$  higher. But the damp atmosphere of the Caribbean Sea brings it closer round you as it were, creating a sensation of sultriness. However, we were approaching Panama—where, heat being the normal condition, they say it is always hotter—never cooler.

It was not yet daylight, when our experienced captain guided the good ship into the silent harbour of Colon; and the enterprising amongst us who were awoke by the cessation of the accustomed beat of the screw, came on deck, all curious to watch the new scenes around us when revealed by the approaching dawn. As objects became gradually visible, there was but little of the picturesque to admire, though it was all new to most of us, for we were in Central America. It was a dreary morning, and we were first saluted with a heavy shower, which, with an important day's work before us, was not promising. Happily it cleared up soon after (at least the rain kept off), but the clouds shrouded the hills at the back, and beyond the immense wharf encumbered with coals—the iron lighthouse being the nearest and most conspicuous object. We soon made out the street, or row of some two hundred white-washed houses with green balconies and venetians, which, together with the native mud and thatched huts, formed the town of Colon (or Aspinwall, as it is sometimes called), built on a small coral island named Manzanilla.

The shore is fringed with dense mangrove trees, and immediately in the rear of the houses commence swamp, jungle, and the primeval forest, amid which the graceful form of the cocoanut tree is everywhere seen, adding beauty to the rich masses of foliage, which seem impenetrable. Near us were several sailing vessels and steamers, the various crews of which bustled into activity as the day commenced. We had come to a place where there was no news to receive; the world's news we had brought with us; but we were anxious to know what our movements were to be, how long we might have to look about Colon, and when the train was to bear us across the isthmus. We soon learned that a "special" would be arranged for us; so the mails, cargo, and baggage were bundled on shore as quickly as possible to the railroad-cars, not fifty yards distant; and, about eleven o'clock, being "all aboard," we moved along the line of hovels, shops, and stores,

with their nondescript loungers, catching a glimpse of the pretty stone Episcopal Protestant church, built by the Americans (the only one in the country). Then, leaving the island, we cross the channel, about 200 yards wide, by the artificial railway dyke to the swamps of the mainland. These are quickly passed, and we then enter the forest.

At once the attention is engaged by the novelty of the situation (for we had been the last few days between sea and sky), and by the endless variety of luxuriant vegetation, elegant in form and brilliant in colour, heightened by the rich scarlet of the palm nuts hanging in clusters of two feet in length just below the leafy foliage, and numberless other blossoms of large size and gorgeous tint, among which is the celebrated *Flor del Espiritu santo*. Trees of gigantic dimensions are to be seen enlaced by creepers of redundant growth, and hanging, as they do, in variegated festoons and extending in every direction, they seem to bar, by their long fibrous tendrils, all passage into the heart of the forest, which is only cut through by the iron road—a noble triumph of American enterprise. Many birds of bright plumage, new to our European eyes, occasionally flitted among the foliage; and the warble and twitter of some of the smaller kinds was very pleasant to hear as we stopped at the various stations. About seven miles from Colon we arrive at the station of Gatun, where we first come upon the Chagres river, and stay a few minutes to take in wood and water.

It would occupy too much space to transcribe from my note book all the objects of interest in this very novel railway trip; and to do justice to this specimen of tropical forest life would require a special talent which the "sketcher by the way" possesses not. So I do not attempt to describe it; but, glancing back at the infinite variety met with in this forty-seven miles journey from ocean to ocean, one cannot help feeling that perhaps there are few localities in the world where there apparently is so large a field of observation and research for the botanist, geologist, naturalist, or engineer. But ordinary travellers, like ourselves, can only catch a hasty glimpse of the many objects of interest claiming notice—now on this, now on that side—so many indeed that the three hours' transit seems but one, and that of brief pleasurable excitement.

The celebrated Chagres—up which the travellers across the Isthmus formerly toiled in the frail Indian canoes—was passed over several times on our way (once by a superb iron bridge, 625 feet long) till reaching the base of the central elevation, and beginning to ascend, we finally lost sight of it near the spot where, before the railway was made, the adventurers to California left its muddy sinuous waters to complete the journey to Panama by land at an expense and fatigue, of which the river part, with its discomforts and dangers from malaria, alligators, and noxious reptiles, was but an earnest. For though the entire distance from this point to Panama is but twelve or fourteen miles, passengers proceeded on foot, or were hence conveyed on mules, floundering through mire and rapid streams—along the edge of deep ravines and over steep hills—exposed to the rain in the wet season, a broiling sun in the dry, with all their consequences, and not in-

frequently attacked by robbers. These *were* the items of travel across the Isthmus of Panama, which is now traversed with ease, safety, and comfort, at a fraction of the expense which travellers formerly incurred from difficulty, danger, and discomfort.

Ascending to the summit range by a gradient of 1 in 60 we reach the greatest elevation, about 260 feet above the ocean level. From some higher hill in this neighbourhood it probably was that Vasco Nunez de Balbao first saw the Pacific in 1513. The descent is very perceptible, and with accelerated velocity we approach Panama, crossing over many deep ravines, beds of rivers, skirting steep hills, till the lower lands and swamps of the Rio Grande are reached, and soon after, passing frequently by native huts and more cultivated ground, giving evidence of denser population, we suddenly sweep round and find ourselves under the long terminus shed at Panama, through which the Pacific is visible, and on the right the churches and buildings of the city. At the end of the station, which forms a wharf, we found a small steamer all ready to carry us to the larger Pacific one, our home for the next month. At this part of the journey the only inconvenience that can be felt is when the tide is too low to embark, but by starting the train from Colon at the proper time, there need be no difficulty or trouble whatever.

Soon after leaving the wharf our steamer, the *Ruahine*, becomes visible about two miles off, looking trim and ship-shape, and on getting on board we find her equally neat, clean, and comfortable inside, so that without any disloyalty to our swift and larger *Tasmanian*, we like her at once, and some prefer her to her bigger sister of the Atlantic. As we had still to await the arrival of the mails, etc., we felt a little disappointment that we could not have devoted some of the time to the exploration of Panama. We were obliged to be content with the view of it from the sea, admiring the fine outlines of the fortifications, churches, and public buildings, about which, although time has laid the ever defacing hand, there is still a certain grandeur of design, consistent with the old Spanish character, which, with all its faults, was not destitute of nobleness. The city is admirably placed on a projecting point, fronted by an extensive reef, and is a fine object seen from seaward, with the high thickly wooded hills behind. More to the south is the site of the old city, sacked by Morgan in 1670, and afterwards deserted. Close to us are the pretty islands of Perico and Flamenco, the rendezvous of the California and Central America steamships. We amuse ourselves as best we may, arranging our cabins, looking at the prospect around us, but all longing for the time of departure, which we hoped would be soon after we had watched the sun set beneath the waters of the Pacific. Our party had become considerably varied—several had diverged one way and another, whilst others had taken passage with us and supplied the places of those we had left behind.

Panama ought to become again a flourishing place, since it is the centre of so large a part of the world's passengers; traffic being connected by steam lines with New York, and also with San Francisco, etc.,

four times a month—with all the West India Islands, and Liverpool, and London, as often—with France, once a month—with the South Pacific, and Brazil coast, twice—and also with China, Japan, New Zealand, and Australia, once a month. The traffic through it will probably be much diminished again, when the Central Railway of America, from ocean to ocean, New York to Francisco, is finished and in working order. The variety of news we receive at Panama by this system of converging steamers adds this much to the interest of the voyage. By the last American steamer we get the latest telegraphic news from England, Europe, and America, and here we learnt the sad catastrophes of the terrible earthquake and vast wave, which had but a few days previously devastated the coast of Peru.

At length, our cargo, baggage, and mails are on board, the welcome order "up anchor" is given, and we start forward on the broad Pacific, somewhat satisfied at having done a good day's work, yet without fatigue, everything having been well arranged. We pass in about an hour the island of Taboga, where the Panama Company have their spare steamer and coal hulk. Next morning we have the land still in sight, and towards noon are pretty close to Cape Mala, the last point of the great bay of Panama. The white beach makes a beautiful edging to the rich tropical foliage, and in the distance are the mountainous ridges of Central America. This is our last bit of land for many days to come, and in the afternoon all is lost to view.

Now 6500 miles of ocean—the longest steam trip ever attempted, have to be crossed, and at ten knots (about twelve English miles) per hour, without stopping, except at the Island of Rapa. But the ship has just completed (and also many times before) the entire distance without any break, and perhaps the *Ruahine*, and her three sister ships, are the only steamers in the world at present capable of performing so long a passage with the punctuality they have done these two years and upwards. It is considered no small stride in advance to have produced four ships thus able to bridge the Pacific; but the time is probably not far distant, when even this feat in engineering will be thought nothing of, and that ere long it will also be looked upon as a gross expedient for a steamer to be obliged to take in a ship load of coals to propel her but a few hundreds of miles.

About the third day from Panama, we passed to the southward of the Galapagos Islands, though we did not sight them. The temperature had already become cool and pleasant, probably affected by the Humboldt current sweeping up from the south—the thermometer ranging no higher than 75°. The first day from Panama it was 84° at noon, the sun being then vertical, the second 79°, and until our arrival at Wellington it was never higher than 77° nor lower than 60° at noon.

We now settled down to our various pursuits; for without some such, a voyage of any length becomes insufferably tedious. The lounge chairs are ranged along every morning under the nicely-spread awnings, and each person seems to have a favourite nook about the deck in which to esconce himself (not forgetting the little smoking rooms) after



the first business of the day—breakfast—has been performed. The matutinal cup of tea at six, though very welcome, goes for nothing. We now got into the S.E. trade wind, in the influence of which we found ourselves till near Rapa; and very pleasant it was day after day, assisted by the steady fair wind, to be sweeping along at the rate of ten to eleven knots an hour. Our good ship had little or no vibration, owing, probably, to the neutralising action of the two screws moving in opposite directions.

One day is very like another, of course, on board ship as on shore, yet there are incidents continually arising which, though simple in themselves, considerably vary the otherwise monotony. Great events are not necessary; but a change of wind—seeing some strange birds or whales, porpoises, or the ever flitting flying-fish—serve to engage the attention and divert the thoughts into a new channel; and at night the unfamiliar stars which come in sight as we get more southward, amongst them the Southern Cross, are in turn objects of interest and subjects of conversation.

The noontide meal, luncheon, terminating the forenoon *idlesse*, unnecessary as it seems so soon after breakfast at nine is an excuse for assembling and discussing the ever interesting subject, the amount of the day's run. This concluded,—a somewhat lazy interval succeeds, and dinner at four o'clock is looked forward to as the affair of the day; to which as a supplement, tea is served at seven, some not even despising sandwiches afterwards. Our evenings were passed mostly below, especially when it was not moonlight, and then cards, backgammon, chess, and books were the amusement, according to individual fancy. Occasionally a concert or a theatrical performance was got up, and thus absorbed an evening. One of the former, given by the sailors in the fore-castle, to which all the passengers were invited, was very good.

The once-a-week baggage day was in some sort a distraction or small event, getting a new stock of linen or changing the tropical dress for something warmer, as we felt the fresher air of the Southern Ocean.

Sunday is as distinct from the rest of the week as on shore. The crew and officers, all in their best, muster on the quarter-deck at half-past ten, after which Divine Service is performed in the saloon. The ship is cleaner and quieter, no work being done except what is absolutely necessary; but the evenings of this day are *un peu triste*, the usual amusements being suspended.

We had been eighteen days smoothly cleaving the Pacific, when at daybreak, the next "event" of the voyage, "Rapa" (sometimes erroneously called "Opara") was reported ahead. Here is the coal depot of the Panama steamers, in case of their getting short of fuel. Going from Wellington (New Zealand) towards Panama, in order to benefit by the favourable westerly winds, a more southern route is taken; whilst returning from Panama, to avoid the same belt of winds and profit by the S.E. trades, the track leads close by Rapa. This island, about eighteen miles round is of very irregular form, having many indentations, two of which are considerable bays, having each its little

village, whilst a third and larger one forms a beautiful snug harbour, the only thing which gives a value to the island. It was discovered by the English navigator Vancouver in 1791, since which time little was known of it till selected by the Panama Company for their stopping place.

The appearance of Rapa, as we approached it in the *Ruahine*, was very picturesque, with its sharp peaks thrust up as it were into the air through the irregular but more rounded forms of the mountainous hills of the island. The harbour lay just before us, with two coal ships securely moored about two miles off, there being seemingly no obstruction between us and them. But beneath the quiet-looking surface lay the treacherous reefs which, difficult and dangerous as they are to approach heedlessly, form the security of the harbour. We stopped some time close to the entrance waiting for a boat to come off, the captain prudently hesitating to enter lest the buoys might by accident have become displaced, and the event proved how wise this precaution was, for we found afterwards that one of the principal buoys had been driven by a recent gale quite across the channel. At length the expected boat came, with the captain of the company's coal ship, and a native pilot. We moved cautiously ahead, and very soon the bottom was clearly visible under us. Then we approached the entrance of the narrow, tortuous channel among the reefs, the rocks glistening just below the surface, ominously close to the ship at times. The captain and our two pilots were all on the *qui vive*, as we threaded the crooked passage which appeared like a blue line amid the black and green patches of the reefs. It was with a feeling of relief we at length saw that we were safely through the line of buoys, and found ourselves in the most romantic snug harbour imaginable, the land rising on three sides like the walls of an amphitheatre, and protected by the reefs and a beacon islet on the fourth, or eastern side; with the advantage of having fresh air from the open sea. Twenty ships might moor safely here, with small craft innumerable. The endless variety of form and colour around us was most enchanting. Near our anchorage was a very small village rejoicing in some thirty inhabitants; but farther off on the opposite side was another larger village, which we called the capital, where the king and the French Resident lived. We only regretted to see the French flag waving there instead of the English, and there is not the slightest doubt but that the natives would have themselves preferred it. It is perhaps matter of legitimate regret that the simple manners and customs—the primitive feudal sway of the native chiefs—should be interfered with by either flag.

The French have assumed the protectorate of Rapa, on the ground, I believe, that it is a dependence of the Tahitian group. But in a recent French map of the world dedicated to the Emperor, there is a circle described round the Society group as the limits of their protectorate. Now this line appears to be more than 200 miles distant from Rapa, and had the Panama Company not established a station there, I fancy they would never have gone near it. But the French having made an unsuccessful effort to induce the company to adopt Tahiti as the

half-way house, and hearing that they were in search of a place more in the track than Tahiti, fancied it must have been at one of the Gambier Islands, lying considerably to the north-east of Rapa, and included in the protectorate circle. Accordingly they sent a Resident there to watch proceedings. Finding, after some time, that no one appeared, and hearing that Rapa had been selected for the port of call, the same Resident was sent to that island in the early part of the present year (1868) on board the French war transport, *La Dorado*. A few months previous to this, and subsequent to the company's ships first coaling at the island, another French steamer, *La Touche Treville*, called at the island. They make out for the first time that Rapa, though 300 miles out of the magic circle, drawn by themselves round the Society group, belongs to the Tahitian protectorate. We were informed that they made nearly all the inhabitants drunk, and got the King Tapanua (a most powerful toper), and two chiefs, Miroto (the man who betrayed the Tahitians to the French), and Eitou, to sign away the island to the French. Many of the influential chiefs being absent, kept sober on the occasion, and deny the king's right to alienate any lands not his personal property. His dusky majesty having drunk all the rum, now begins to repent his bargain, and hopes the English will come to the island and preserve him from all intruders. The object of the French was, as one of their captains told us, simply to *embarrass the operations of the company*, but to do this they incur a useless expense of about £600 per annum, to watch their coaling merely. It is only due to the supineness of the *English Government*, that this fine harbour is not under their control, for three years ago the advantage of it was represented, and a suggestion made to the Admiralty to send a man-of-war there. However, nothing was ever done in the matter!

Our coaling was of course proceeded with at once, and the greater part of the passengers, anxious to escape for a while from their iron prison, gradually dispersed on shore, whilst those who remained made bargains with the natives for coral, tropic birds, feathers, bananas, etc. I began doing a little sketching, and after securing some of the very peculiar features of the land, my next object was to determine with a moderate degree of accuracy the height of the most prominent of the aiguilles which jut up in this curious island. This had never been done; and previous to arrival, I had received so many different guesses at the height of the Rapa peaks—varying from 400 to 1400 feet, etc.—that I was the more anxious to arrive at something definite. The difficulty was to secure a sufficiently level space to measure a base line (not the most easy thing to do with precision, even under favourable circumstances). However, finding the shore was impracticable, I selected a spot on the beach nearly in a line with the ship and the mountain. Then I ascertained the length of this in three ways—one by measurement from the chart, another by sound, and thirdly by the angle subtended by the ship's whole length with sextant. The average of these gave me a tolerable base; and, of course, by the angles at each end of the same, and a little triangulation, I arrived at the height of one of the highest peaks, viz., 2100 feet.

My short experience of the inhabitants, together with the testimony of others, gave me a very favourable impression of their peaceful simplicity of character and honesty. They number now only about 125 to 130 men, women, and children. Formerly it was thought, and indeed according to their own account, there were 1200 to 1500. But it is said that internal wars in the first instance, and then the ravages of the various epidemics brought amongst them have reduced the inhabitants to the present limited number. They are, in appearance, a fine, manly, well-made race, and looked very Maori-like to me. The wonder is that living as they do principally upon an esculent root called "taro," somewhat tasteless and insipid to us, with a scanty supply of meat and fish, they keep up so good an appearance. The language generally, the names of the points of land, mountains, etc., seemed to my ear also very Maori-like.

The climate of the island must be to a European very delightful; for, surrounded as it is by the sea, the temperature is very equable, and though close to the tropics, the thermometer seldom shows more than 75° in the height of summer. The weather, for the most part fine, is yet changeable with occasional sudden showers, as might be expected from the effect of the high peaks arresting the clouds, and causing them to precipitate their suspended moisture. The winds are, for nearly nine months of the year, from S.E. to N.E., and westerly the remaining part; for, of course, lying so near the tropics, the trade-wind is swayed southward by the sun in the summer time (November, December, January, and February), when the island is embraced by it; and left in the winter to the northern limit of the regular westerly current of air, which then extends more northerly. The meteorological department in England intend to make it a station for observations, and have just sent the necessary instruments there, so that Rapa may become a point of great scientific interest and utility. In fact, the Southern Pacific being an almost unknown sea to us, meteorologically, the importance of this fixed station of Rapa in conjunction with the observations on board the Panama ships, and in New Zealand cannot be too highly estimated. There is already a tide-gauge there, showing the extreme rise and fall to be two feet six inches, and the establishment of the port or time of high water at full and change, 12.15. The wave which recently swept along the coast of Peru was also felt at Rapa; indeed it partly washed away the company's coal wharf. There was also a slight earthquake, the impulse of which came from the south, coinciding very nearly in point of time with the disturbances which, on arrival at Wellington, we found had been experienced in New Zealand as well as South America.

The peculiar irregular form of the land, with precipitous mountains and deep gullies, causes sudden gusts and eddies of wind in the harbour, to vary continually in direction, so that it is difficult to say exactly what wind is blowing outside, unless it happen to be from the eastward or directly in. There is a remarkable absence of surf, I am informed, which is not easily accounted for. They say "that landing is easy anywhere, and boats can lay alongside precipitous cliffs exposed

to a swell which rolls in unchecked over thousands of miles without breaking."

The resources and products of the island are at present but few in number or quantity, excepting, perhaps, goats, which abound, and are to be seen everywhere delighting in the most inaccessible places, where, seen with a glass, their forms, moving to and fro on some knife-edged mountain, stand out in relief against the sky. Small vessels occasionally take a cargo of them away to Tahiti. I was told that the Governor of that island had ordered the French resident at Rapa to have them all destroyed—upon what enlightened principle it is difficult to say,—but the resident had too much good sense to comply with the order. The *Ruahine* had the previous voyage landed on trial some sheep, but they did not thrive, for on taking them on board they had lost considerably in weight. A few pigs are procurable, good but dear. There are some fowls wild in the bush; some widgeon, and of course seagulls. There are no reptiles or snakes, although one of our passengers told me he had been in bodily fear of them all day, and his enjoyment had thus been very unnecessarily marred. Rats are very numerous. It is curious that when the company's coal ship first went there they were troubled with mosquitoes, though none were found on shore; they were in fact taken there in the ship, and have now disappeared. There is an abundance of fish—some very beautiful, especially the parrot and gold and silver fish; good mullet and some other kinds are readily procurable; of sharks plenty.

The taro root, the chief support of the inhabitants, grows abundantly, but requires attention to its culture, as it will not grow without plenty of water. We left a quantity of English vegetable seeds, and hope they will succeed. Water melons are plentiful and cheap; bananas grow well, and are very good; oranges are produced, but of poor quality; pineapples also very inferior. The sugar-cane likewise grows well; and there were cocbanuts formerly on the island, but a blight destroyed them all some years ago. I could not ascertain if they thrive well, but I believe the cocoanut tree will not flourish out of the tropics. Cabbages abound; maize is tolerably easily raised; potatoes as yet but indifferently.

Coal of very inferior quality has been found in the interior; the natives use it occasionally for cooking, etc., but it is useless for steam purposes.

The land is generally covered with thick scrub and fern, showing here and there clear spaces of a kind of coarse grass, which grows five or six feet high. There are a few beautiful flowering shrubs; and whilst the tree and smaller ferns abound, trees of tolerable size are found in the northern part of the island, but only small ones near the harbour. The cultivation is limited, because the requirements are so small, still vegetation is most luxuriant, and the soil appeared to me of the richest kind. True, the level ground is comparatively of small extent, but there are many hundreds of acres which might readily be cultivated. They profess to like the English and only await as they say the arrival of a British ship of war to surrender their island to

England. However, the French have been beforehand, and will stick to their protectorate as they term it, but which in plain English means taking what they like and compelling the natives to work without paying for either. They have a king, and half-a-dozen chiefs, with but little authority; in short, they live like one happy family.

In the *Ruahine* we were at Rapa nearly two days, the second of which being Sunday, it was not without interest to find the day strictly kept, and that in that quiet place it was sensibly quieter than the previous day, women and men donned their best attire, and the former whatever little fineries they had to display. There is a building set apart as a church at each village, that at the larger one being in very good condition; but at our village, of some thirty inhabitants, it was in a sadly dilapidated state. Being on shore close to this, about seven in the morning I heard some singing inside, and at once entered—stooping under the projecting thatch—by one of the numerous breaches, only too practicable, in the wall. At a sort of rude reading-desk was a native, conducting the singing, he only having a book. It was a dull monotonous chant, in which the congregation (seated crouching on the rush covered ground) joined. The congregation consisted of thirteen females, of all ages, and two men; and, although in the census of Rapa, women are sadly in the minority, yet they have the advantage of being at a premium, and, as it seemed to me, had the privilege of doing the religion for their husbands. The service was very simple—consisting of singing, reading, prayer, and an address. They are Protestants and the Bible used was translated by the missionaries at Tahiti, and printed in England. I was told that the people of the larger village had, not long ago, managed to purchase an harmonium for their church, and waited for the lucky chance of some one coming in due time to play it. In the afternoon I was on shore again near the same spot; and, hearing a bell ringing continuously, I found it was the summons for church. Almost at the same time a horn was blown at the opposite village—the capital—as their summons also to afternoon service.

There are curious remains of apparently fortified places at Rapa, said to be the defences of the earlier warlike times. On the summits of many of the steep hills are to be seen these square fortresses, some of them of very elaborate construction. But what is very singular, they are mostly solid within; the stones are well squared, of very large size, and well cemented. Around, or on the top of one, in the interior, are still the bones and skulls of a number of warriors to be found, who, they say were starved out by their opponents. I regretted much that I had not time to make an exploration of those and other places myself. I felt I could readily have stayed a week on the island with plenty of interest and amusement. However, though not indulged in this, we found our visit a great break to the voyage, and I think we all enjoyed the novelty of the scene and the quiet retreat very much. I may just mention that the remarkable group of rocks called the Four Crowns, and which on many charts are marked doubtful, not only exist, but may be seen on a clear day from Rapa, some forty miles off. The

French Resident, Mons. Caillet, gave me one piece of information which is generally interesting, and to navigators valuable. It is, that Easter Island, the natives of which have hitherto been found fierce and treacherous, rendering any attempt at communication dangerous, may now be visited without apprehension, and supplies obtained. This happy change has only recently been effected by the influence of some courageous and benevolent French priests, who ventured upon the difficult task of endeavouring to civilise these hitherto savages.\*

But the coaling is done, the signal gun is fired, and the *Ruahine*, by the fiercely blowing off steam, seems impatient to be away again. So the stragglers get on board with their spoils of coral and fern, etc. We cast off from the hulk, and, with captain and pilots once more at their posts, we move slowly ahead towards the sinuous pathway amid the reefs, and which, at a distance, is only indicated by the buoys on either side of it, looking like small red spots on the north of the channel, whilst black ones mark the limit of safety on the south side. The light gleams again on the scarcely covered rocks, here and there, which we have to pass, and the general interest in this short but intricate bit of navigation is greater than ever. We at length pass between the last of the black and red buoys and are once more in clear water. We bid adieu to our skilful pilots, their boat returns to the harbour; we again go "full speed ahead," and then have a capital view of this interesting little island as we sail and steam round it.

It was a beautiful sight, to watch the many varied and varying forms, and tints of colour too, of the needle-like peaks and crags, and deep valleys with their exuberant vegetation, and here and there a dark precipitous cliff having a sparkling stream of water, like a silver thread, running down its face. But we rapidly left all behind; this our last stopping place, becoming very soon too distant for us to admire it any more; † and Rapa at length melted away from our view,

\* This is the first information of the kind that we have had of the natives of Easter Island and shall be thankful for any notes of them from any visitor hereafter. ED.

† It appears that Rapa has become the current name of the island instead of Oparo under which it appears on the chart. The following is Vancouver's account of the island, as we find it quoted by Findlay, and seems to comprise all the information we have concerning it.

OPARO OR RAPA ISLAND—Oparo was discovered by Vancouver, December 22nd, 1791. At first it bore N.E.½N. and then appeared as three small islands, the easternmost much resembling a vessel under sail. They did not land but saw nearly round it; they considered that anchorage might probably be found on both sides of its N.W. point. To the southward of that point is a small bay with a stony beach, through which there was the appearance of a considerable stream of water falling into the sea. The shores in most parts were so perfectly smooth, that landing might have been effected without the least difficulty. Round to the North of that point is another small bay in which are a small islet and some rocks; behind these, the shore may be approached with great ease at any time. Indeed, there was not any part of the island which appeared to have been acted upon by heavy violent surfs, as the verdure in many places reached to the water's edge. The South extremity of the island appeared in some points of view to form a right angle without the least interruption in the sides; about half-a-mile

absorbed in the purple haze of sunset, leaving us to turn our thoughts, hopes, and expectations exclusively to New Zealand.

And now the entering upon the last stage of our journey, when each day's run bears a large proportion to the part of it yet to be accomplished, acts as a general refresher to our spirits; and what with recapitulating our several adventures at Rapa, looking forward to the approaching termination of the voyage, under the healthful influence of the cool fresh atmosphere of this southern ocean, we felt an exhilaration which dispelled all *ennui*.

"At length our path was crossed by an albatross," followed by others, sweeping majestically along, with their broad wings, and the Cape pigeon, with its neat black and white mottling, accompanied by whalebirds, Mother Carey's chickens, and other petrels, all rejoicing in the fresh breeze, and reminding us of our progress southward, and engaging us for hours watching and trying to catch some of them.

We have done more than two-thirds of the distance between Panama and New Zealand, and the remainder seems nothing. The few intervening days pass swiftly—we have our baggage to arrange—think more definitely about our plans—square up various accounts—and finally we are startled by the captain telling us that we are to lose one day, that actually Wednesday must remain blank in our diaries, or we should find that we were a day behind our antipodean friends in the date; so without attempting to understand the captain's (no doubt) excellent reasons for this sudden jump, I see the only entry I have in my diary for that day is "this day lost."\*

The next morning, the dark-looking cloud ahead we were told was New Zealand. By noon we were steering close round Cape Palliser, the sea mews screaming over our heads their shrill welcome. We next make out the signal station, and before we fancy they can distinguish us we see with the glass the flags fluttering to the summit of the signal staff announcing our arrival. The baggage and her Majesty's mails are got up ready for delivery—we enter the capacious

to the S.E. is a small detached islet; the shores are interspersed with sandy beaches; its greatest extent, which is N. 18° W. and S. 18° E. direction, is about 6½ miles, and it may possibly be about 18 miles in circuit.

Its principal character is a cluster of high craggy mountains, forming in several places, most remarkable pinnacles, with perpendicular cliffs nearly from their summits to the sea. The valleys, or rather chasms, between the mountains, were chiefly clothed with shrubs and dwarf trees. Neither plantations nor other tropical plants appeared, neither fertility nor cultivation were evident.

The natives who appeared not to have seen Europeans before, resembled others of the great Polynesia nations. They were estimated to above 1,000 at least. On the tops of six of the highest hills some native fortifications were observed.

Captain Bellinghausen places it in lat. 27° 37' 40", and long. 144° 15' W. (Vancouver, Vol I. page 75—76.)

\* The author forgets that in reality he has himself been lengthening the day since he left England, and as if he were to continue on Westerly till he reached England he would still be lengthening it, he would find that altogether his additions to the twenty-four hours would be just sufficient to make another day, and must be content to suppose that he has lost a day by skipping over one in imagination.



harbour of Port Nicholson—the straggling town of Wellington comes into view—boats swarm out to meet us—we announce our arrival by firing two guns, and the response to the order, “Let go the anchor,” completes our voyage.

All eager for news, and some to see old friends, our decks are soon peopled with an unaccustomed number, and we hear in turn of the political strifes of New Zealand, the fierce and prolonged debates in the House of Representatives, commercial depression, the recent earthquake, and, worst of all, the renewed Maori war. Poor New Zealand! let us hope that her intrinsic resources may set her right again some day.

It is curious to watch the close of a voyage. Those whom a common interest but yesterday in some sort linked together, now disunite. A general dispersion takes place; each wends his own way, absorbed in that which caused him to cross the ocean to the antipodes. And I, too, must attend to the business that brought me here, and as I row on shore bid a mental adieu to the good ship which has carried us safely over. There she lies, looking none the worse for all her buffetings, a little travel stained or so, perhaps, but ready to start again to-morrow for Sydney, with those whose lot is in Australia. Another 1200 miles and then she rests a month to prepare for again bridging the Pacific. So farewell to *Ruahine*, her worthy commander and officers, who will each and all in connection with our pleasant voyage long remain in our memory amid the toil of business and the ills that flesh is heir to.

W. W.

[In reference to the absence of date in the foregoing, we are informed that the *Tasmanian* left Southampton on the 14th of August with Atrato's mails and passengers, so that the *Ruahine* would have left Panama very early in September.—ED.]

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NOTES OF A VOYAGE BY THE SHIP ISABELLA BROWN FROM  
MELBOURNE TO JAPAN AND CHINA;

*Returning by the Bashee and Gilolo Channels, the Banda Sea and Ombay passage West of Australia from the 5th of March to the 29th of August last. By her Commander, A. E. Brown.*

SIR,—As my former humble communications\* to the *Nautical* have met with so much courtesy, I am emboldened to send you my experience of a trip from the Colonies to Japan, China and back. I am quite certain that if masters, making the same passage at different times of the year, were to make known their experience, we should

\* In our number for July last, wherein we give our correspondent no more than his due.

know more of the winds and currents on that passage, and might do away with a great number of those phantom islands and shoals which so thickly stud the Pacific (both north and south) on the chart. Surely all must know that the *Nautical* is always anxious and eager to diffuse nautical knowledge, and I really do not see how the *Nautical* can get it, but from men navigating, as yet, unknown seas. I am not much of a scribe myself, but I try to do a little in that way.

On the 5th of March, 1868, I left Newcastle in command of the Colonial ship *Isabella Brown*, bound to Yokohama, Japan, with a cargo of coals and cows, and ten passengers in the cabin. The wind being light at S.S.E. At mid-day the wind hauled more easterly, but I managed to clear Port Stephens, and stood on with starboard tacks on board till the 11th, when the ship was in lat.  $22^{\circ} 30' S.$ , long.  $160^{\circ} 6' E.$  I found that we were in the westerly set which passes the south end of New Caledonia at a rate of about two knots per hour to the N.W. The wind still remaining easterly, I gave up all thoughts of passing east of New Caledonia (which was my original intention), so stood to the northward, and at six p.m. was twenty-eight miles east of the South Bellona reef.

As the current had shown itself strong, I deemed it prudent to ply to windward all night under reduced canvas. Wind at mid-day hauled to S.E. with a sea running like a tide rip, breaking all round us for a few hours, and then becoming quite smooth. Considering that this has now become one of the most frequented routes from Australia to China, it is to be regretted that it is not better known, so that merchant shipmasters might take it with confidence, and not be under the necessity as they are of heaving to all night instead of making their passage. Findlay, Cheyne, Horsburg, and the charts are all at variance with each other, so that one comes to the conclusion that a good look out is the best substitute for sailing directions here at present, and to do that well one must have daylight. I know very well that the passage west of New Caledonia, between it and the reefs, is universally dreaded by shipmasters, but I really think that when it is better known, this fear will be entirely removed. It is not the danger of the reefs, but the *uncertainty of their positions* that perplexes the mariner.\*

On the 12th at daylight, stood on to the northward, wind E. by N., and at intervals of an hour or so, a tide rip would come along with us as bad as I ever saw at Port Philip Heads. Noon, lat.  $20^{\circ} 55' S.$ , long.  $160^{\circ} 40' E.$  At two p.m. the sea was absolutely in pyramids all round us, and breaking on board in all directions. I had to knock out the ports to free the main deck of water, and also to keep her before the wind to prevent the seas tumbling in to leeward. After reducing sail, I kept her course again, and at sundown it was as smooth as a mill pond!

\* There never was a more just observation than this difficulty of navigation beset by dangers, the correct positions of which are unknown, and there seem to be many between New Caledonia and the Bampton and Bellona reefs.

On the 13th, in lat.  $17^{\circ} 39' S.$ , long.  $160^{\circ} 43' E.$ , the wind hauled to N.E. by N. with a confused sea; ship labouring much. On the 14th, wind strong at N.N.W. with heavy sea. This weather continued till the 17th, in lat.  $12^{\circ} 48' S.$ , long.  $162^{\circ} 27' E.$ , when the wind shifted to S.E. by S., light, with torrents of rain. On the 18th passed between the Solomon Isles and the Santa Cruz Isles. On the 19th, in lat.  $10^{\circ} 30' S.$ , long.  $162^{\circ} 43' E.$ , wind N.W.; and from this till the first of April the wind was variable between W. by N. and N.N.E., with torrents of rain.

On the 1st of April, not having had an opportunity of determining the ship's position by observation these last four days, I find her 120 miles to the eastward of the D.R. This is the effect of the equatorial current. Noon, lat.  $3^{\circ} 44' N.$ , long.  $170^{\circ} 30' E.$ , so had to proceed to the eastward of the Marshall group, wind still holding on to the westward with much rain till the 5th, when in lat.  $12^{\circ} 50' N.$ , long.  $172^{\circ} 0' E.$ , the wind shifted suddenly to east, blowing fresh, with a heavy sea. Thus it will be seen that from lat.  $16^{\circ} 35' S.$  to  $12^{\circ} 50' N.$ , the wind was almost constant from the N.W. quarter with heavy rain. This is anything but what I expected. I thought perhaps I should have a line monsoon extending about  $5^{\circ}$  lat., but west and N.W. winds to extend  $29\frac{1}{2}^{\circ}$ , and as far east (and how much farther of course I cannot say) as long.  $174^{\circ} E.$ , I never heard of before.

On the night of the 7th, I passed over the assigned position of the Island of Bartolomeo marked (?) as it was the night of full moon and very clear it could not have been near, and as it is laid down as a bold island, I am inclined to think it one of the Pacific bugbears. From this date till the 21st, when we sighted St. Peter's Island, we had light winds from N.E. to S.E. round by east, and a current on an average of  $1\frac{1}{2}$  knots per hour S.W. Passed to the eastward of the islands which extend south of Jeddo Bay, with the wind variable. Strange to say, that although in the very heart of the Japan stream we felt very little N.E. current until the 23rd of April, when becalmed the greater part of the day off Vries Island (the volcano of which was in action), there was no mistake about the current then. We were set to the E.N.E. seventeen miles during a calm of seven hours, with the water breaking all round us, and sluing the ship in all directions.

Fishing boats were now very numerous, and several came to us, but would not come on board when invited. They had but very few fish, and some none at all. All were bound in shore towards Jeddo Bay. They nearly all tried to impress on us the necessity of keeping well to the *westward* to avoid being set past the Gulf. At 3 p.m. a fine breeze sprang up from the S.W., which took us to the entrance of the Uraga Channel, where I took a pilot, who conducted the ship to her anchorage at Yokohama at midnight; having been forty-nine days on our passage from Newcastle, New South Wales.

Rapid changes seem to be taking place in Japan. A year or so ago no native could leave the country, but while we lay in harbour a ship full of coolies was despatched to Honolulu. I had no difficulty in getting a servant to leave the country with me. In fact I had many

applications when it was known that I wanted one; and when I did get one, he proved to be an excellent servant; in fact the best, and most faithful native servant I have ever had; ten to one better than a Chinese boy. He is most anxious to learn to read and write English, and is very grateful when I give him a lesson. He makes wonderful progress; learned every letter of the alphabet in one day, and pronounced them well; his temper is all that could be desired, and I should be sorry to part with him. Unlike the Chinese, as soon as he left Japan his hair was cut European fashion, and he put on European clothes with great satisfaction. He is always now taken for a Portuguese, so altered is his appearance.

Certainly, Japan is the most beautiful country I have ever visited, not even excepting my own native *Devon*. In the country one never sees a yard of waste land: all is in the highest state of cultivation. I went a three days' journey inland, and everywhere was delighted with the hospitality of the people. Seldom can you pass a house in the country without being asked in to rest, and you never depart without kind wishes for your welfare. But I am afraid I am spinning this out too long; so good bye, Japan.\*

On the 18th May we left Yokohama Bay, bound to Foo-Chow. Had the winds from W.S.W. to S.S.E. with very little current till making Oho Sima, when we got a breeze from the N.E., which took us to the coast of China, where the current ran  $1\frac{1}{2}$  knots per hour to the northward. We had much rain and heavy squalls during the first part of the passage. Arrived at Foo Chow on the 5th June, thus making the passage, with adverse monsoon, in eighteen days.

Having completed my loading on the 18th of June, we started at daylight of the 19th for Melbourne. Previous to starting, I had made up my mind to try the eastern passage, as this is the very worst month to get to the southward in the China Sea. On leaving the White Dogs Islands, a breeze came from the N.E., so kept away and passed down the Formosa Channel. During this passage through, we had fine weather and light variable winds mostly from the eastward with no perceptible current.

On the 25th, passed through the Bashee Channel with wind fresh at S.S.W., from which point to S.W. it remained to July 1st, with fine weather, when we were in lat.  $15^{\circ} 7' N.$ , long.  $131^{\circ} 44' E.$  The wind here came from the eastward light, and remained so till the 6th, when it became variable, and remained so with calms till I entered the Gilolo passage. We had also much rain, that would pass over the ship in dense black clouds, and descend in torrents. But there was little or no wind in these squalls, never enough to render a reduction of canvas necessary. They would soon pass over, and then it would be fine again. On the 11th, sighted Current Island, the position of which

\* Our correspondent was never more mistaken. Japan is yet a new country, and the next time he goes there, we hope he will send us an account of his observations and adventures among that very interesting and intelligent people. He need not be afraid of their being too long, and may safely leave that concern to us.

agreed with that of the ship to a mile. At midnight, sighted Pulo Mariere, a current setting to the N.E. two and half knots per hour, which continued till lat.  $2^{\circ} 15' N.$ , when it changed one knot per hour westerly. On July 15th, in lat.  $2^{\circ} 25'$ , had a set W.N.W. sixty miles in twenty-four hours; 16th. W.N.W., sixty miles; 17th, N.W.  $\frac{3}{4} N.$ , thirty-two miles; 18th, N.W.  $\frac{1}{2} W.$ , thirty-seven miles; 19th, N. by W., thirty-eight miles; 20th, lat.  $2^{\circ} 40' N.$  by W.  $\frac{1}{4} W.$ , fifty-six miles; 21st. W.N.W., forty-five miles; 22nd, N.W. by W., forty-six miles; 23rd, Asia Isles in sight, bearing N.E. fourteen miles, current N.W. forty-seven miles. during the time of these rapid currents, ship was between the meridian of  $129^{\circ} 30'$  and  $132^{\circ} 30' E.$ , and from lat.  $2^{\circ} 40' N.$  to the equator; much drift wood floating about: several large trees were seen that if a ship going nine or ten knots was to strike end on might do some damage to a hull.

On the 24th, sighted Syang Island at daylight passed between it and the Wang Group, a very good and clear channel, current one and a half knots per hour, W.N.W. The last ten days were a tedious and wearisome time. Crossed line about four p.m. During our passage through the Gilolo passage we found constant current or tide rips, but strange to say, when past Geby Island, little or no drift was experienced until the 26th, when we reached the Lawn Islands, and had a drain in our favour. We had variable winds during our passage through, but chiefly from S.E. and south, and were two and a half days from entering to clearing the passage.

I consider it good and safe, and far preferable to the Carimater or any of those western passages in point of safety. We passed out between the Button and the Three Eastern Lawn Islands, heading S.W. by S. This appeared a good passage and free from dangers. It is about four miles wide, but the chart\* would make it appear less than two miles wide.

Taking a departure from these islands, I stood across Pitt's passage, heading S.S.W. Had light S.E. winds and calms during our passage across. At daylight on 28th, sighted the north coast of Ceram; wind was strong from south to S.S.E., so had to beat through Manapa strait. There were two ships and a barque in company all from China. The two ships were bound to London, myself and the barque to Melbourne, a pretty good sign that this passage is becoming more general, and that masters are finding out that the China Sea is not the proper route at this season of the year.

We had a splendid current in our favour through the strait, which enabled us to clear it on the 29th at daylight. I found that keeping in the middle of the strait as much as possible was the best, as there I found comparatively smooth water; but as soon as I approached either shore a confused topling sea was met with.

At four a.m. took our departure from Amblaw Island, and stood across the Banda Sea, heading S.S.W. and S.W., with no perceptible

\* We would thank our correspondents always to name the author or name of the publisher of the chart alluded to. Whether it be that of the Admiralty also—as then it will be known what chart is referred to.

current (neither was there in Pitt's passage). At two a.m. on the 30th, the water appeared quite light, as if we were on soundings. It was not a phosphoric light, but more milky in appearance. The water was as smooth as oil, and the ship going about twelve knots through it. Knowing that we were not on soundings, I attributed it to one of those strange phenomena of discolouration, occasionally met with at sea, and the disappearance of the same *gradually*, as daylight approached confirmed my surmise. When daylight was fully come no trace of discolouration could be seen from aloft. I could detect no insects in a bucket of the water with the aid of a sextant reading glass.

Entered Ombay Passage on the night of the 31st, with a fine S.E. breeze, which soon fell light after passing the east end of Ombay. August 1st, the wind came fresh from the W.S.W., continued working through the strait all day with a favourable current of at least one and a half knots per hour. Signalized the ship *Derana*, which left Foo Chow eight days before us bound to London. The captain reported that he attempted the passage down the China Sea, but could not succeed, that after being out twelve days he lost a suit of sails, and bore up for the eastern passage.

At three p.m. stood close into the Timor coast, abreast of a Portuguese settlement called Liefouw. They hoisted a white flag, and I supposed it was meant for an invitation on shore. I have several times seen the Malays hoist a white flag (when I have landed on various islands in the Java Sea) as a token of friendship. I have no doubt that the inhabitants of Liefouw would have been delighted to have heard a little of the outer world, cut off from the same as they must be. August 2nd, sighted the Island of Savou, bearing S.W., distant twenty-five miles, wind S.S.E., fine weather.

On the 3rd, Sumba Island east end bore north, distant twenty-eight miles, from which I take a departure and steer S.W.  $\frac{1}{2}$  W., with wind steady and fresh at S.E. My experience has taught me always to steer at least 400 or 500 miles clear of the coast of Australia for the sake of keeping a steady trade; no matter what time of the year, it is always the best plan. Had I steered to pass the N.W. coast of Australia within 100 miles or so, I should certainly have shortened the distance, but as certainly have lengthened the passage. I will give a couple of cases that I have known to occur. In the latter part of last year, a fine barque in splendid trim left Singapore nine days before me. She was bound to Swan River and I was bound to Melbourne. Of course *she had* to approach the coast; the consequence was that I arrived in Melbourne the day after she arrived at Swan River! I was thirty-six days and she was forty-four, and I had to make double the distance. Again, on my arrival at Melbourne, a fine barque (quite as fast as the *Isabella Brown*) arrived the day before, sixty days from Anger, I was thirty, but I found out that if the vessel broke off to the westward of S.W. she was put on the other tack to make Easting, and so at last got under the influence of the land. On the contrary, I stood on the port tack, often heading W. by S., and always have found that the further you are to the westward the more easterly you will get the

trades. On the above passage I got as far west as long.  $90^{\circ}$  E., but then I was in lat.  $30^{\circ}$  S., so that when I *did* get the westerly winds, I soon made up lost time. I edged into  $39^{\circ}$  S. as soon as possible, and after that rarely made less than  $5^{\circ}$  long. per day. The last 1700 miles was performed in six days.

But to continue the present trip: I had steady trades till August 11th, in lat.  $26^{\circ} 38'$  S., long.  $106^{\circ} 22'$  E., when the wind hauled to east and N.E., and continued till the 13th, in lat.  $31^{\circ} 4'$  S., long.  $107^{\circ} 40'$  E, when the wind hauled south with the barometer at 30.50. Had a continuation of light variable winds till the 19th, in lat.  $37^{\circ} 33'$  S., long.  $114^{\circ} 50'$  E. I now had north and N.W. winds, barometer still standing at 30.40 to 30.50 till the 26th, in lat.  $39^{\circ} 34'$  S., long.  $140^{\circ} 21'$  E., when the wind shifted in a squall to W.N.W., gradually hauling round to W.S.W., blowing a gale till the 27th, when at daylight rounded Cape Otway, at the entrance of Bass Strait, and at four p.m., was within three miles of Port Philip Heads, when the wind backed to N.W., blowing in terrific squalls as it always does here when the wind backs or hauls against the sun.

I was now sixty-one days out, but could not enter the Heads as no canvas could stand the squalls. I stood off and did not enter the Heads till the evening of the 29th, when the wind settled into a S.W. gale; thus lengthening the passage to seventy-one days.

I fear this communication is too long; but if so, I shall not feel offended by its non-insertion.\*

I remain, yours very truly,

A. E. B. BROWN.

Melbourne, 10th Sept., 1868.

*Ship Isabella Brown.*

P.S.—To show you that we can do work at Melbourne pretty smart; I may here mention that my cargo of 500 tons of tea was discharged in eleven hours.

A. E. B. B.

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### THE COMMANDERS OF OUR MERCANTILE MARINE AND THEIR EMPLOYERS. *Spirituuous liquors, Marine Boards and their construction.*

SIR.—Through the medium of a provincial paper my attention has been drawn to a correspondence between the Board of Trade and a Local Marine Board, with reference to a proposed alteration in the dietary scale for sailors; and in consequence of a most libellous report on our profession from one of those Boards, savouring much of Liverpool, I have been induced to make some comments.

\* We can assure our Correspondent that his remarks on the passage he here relates are by no means too long. There are many seamen in command who will profit by them, and thank him for them. When such passages become as well known as the hurricane theory, which was given to the world in these pages years ago, then, they may be suspended; but not even then when they may present us with interesting information of islands and islanders.

In the newspaper from which I quote it is stated,—“ In the opinion of one Board, ‘ Experience has fully demonstrated the necessity of keeping temptation out of the way of shipmasters, and this can only be done by having no spirits on board.’ ”

There, Sir, print that paragraph in capitals if you please, and I wish we could circulate it throughout the length and breadth of the land, to make patent to all our complete degradation. Let us tell our loving fathers and mothers throughout Britain, what this worthy, honourable Local Marine Board says of a hitherto considered honourable profession, and occupation: so that they may pause before consenting to allow their educated and high spirited boys to become members of a body unfit to be trusted with—a bottle of brandy!

There is a fund of humour about this said report which is positively enchanting. We can picture to ourselves a few high-minded educated men seated round a board not a hundred miles from Liverpool. Possibly they are neither unctuous, pharisaical, nor uncharitable, and doubtless they never tasted spirits in their lives. They are so immensely superior to sailors, in morals and good behaviour, that we might leave unlimited dozens of old Cognac under their very noses without the possibility of their being tempted by them. We can suppose them to say, “ We thank God we are not as other men are,—those sinful shipmasters, who are so weak in the flesh.” Oh! ye “webfeet,” why will ye be so thirsty? and when thirsty, why do ye partake so much of brandy. Don’t you see, ye have aroused the ire of a right honourable Local Marine Board. Henceforth take to water pure and simple, and conduct yourselves—(us!—we!)—like respectable men.

We thank these gentlemen very much. We thank them for their brotherly love and charity. Having our frailties and shortcomings exposed in this manner, we are very likely to improve, and when improved they may amend their report, and tell the world, sailors are pretty much like other men, neither more nor less fond of liquor than their superiors (ahem!) who sit at Local Marine Boards.

Now it has occurred to me that this “rigidly righteous” Board may not have completed its report, and therefore I will try to supply an appendix, telling our shore cousins, that we can’t afford to be consigned to perdition in this wholesale manner, without emphatically protesting against one of the grossest, most ungenerous, and illiberal reports that ever was levelled at any class of men, a report that could not possibly have emanated from gentlemen, or from educated men.

The appendix might proceed somewhat after the fashion of this outline:—My Lords, We have also to report, that the shipmasters most addicted to intoxicating liquors, and least able to resist temptation, are receiving the highly remunerative salaries of £12 or £15 per month, which multiplied by twelve, will give the munificent sums of £144 and £180 per year, either of which my Lords will at once perceive, is ample and adequate to support their families and give a good education to their children. We have also in this renowned port some firms which give £20 per month to their shipmasters, and to the



latter certainly we might possibly trust a few bottles of brandy. We also notice that as the salaries of shipmasters are raised in amount we are able to procure men of unquestionable sobriety, men who are also proof against *temptation*. There are also men commanding our first class steamers, such as belong to the Peninsula and Oriental, Cunard, West India Royal Mail Companies, and a host of others, whom we are constrained to admit, cannot be placed in the same class as those against whom we have made such a sweeping assertion in the body of our report. An assertion as unwarranted as it is devoid of truth: but as *we* do *not* like to pay sufficient salaries to procure a better educated and more refined class, and one for which brandy will have no allurements, we desire the assistance of my Lords in legislating so as to make our £12 and £15 captains sober, honest, and respectable men. My Lords will not fail to see from our appendix, that there is no difficulty in finding men who may be trusted with—"spirits on board"—if we pay sufficient salaries: but to this we are decidedly very much averse. In fact our aim for a number of years has been to reduce wages to a minimum: the consequence has been—and we cannot help expressing our surprise—that the moral standard of our shipmasters has correspondingly deteriorated, as they have approached that desideratum. We have taken much pains to *suppress* these facts in the body of our report because we had an object in view, that object being to defame the *entire* class as unworthy, and unfit to be trusted at sea even with a single *bottle of brandy*.

"It has occurred to this Board that in maliciously slandering a body of men, perhaps not worse than their neighbours in the matter of drinking, that body has somewhat exceeded the demand made on it by your Lordships. To remedy such defect this appendix has been prepared,—imperfectly indeed—and forwarded, and it is just possible that it may contain truths which this Board would rather suppress and conceal from the world at large."

I wish, Sir, we could only frame a report something after the above style, signed by every master in the kingdom, as a feeble protest against those who are trying by powerful means to crush us in the estimation of our countrymen. I am but too well aware that there is much truth in that report, and I have endeavoured to give a reason for the sad deterioration of our profession of shipmaster. But I indignantly protest against it, as being untrue and unjust to the majority of us. I would only ask our *good* friends to note the conduct and behaviour of the commanders of our large steamships, the masters of our finest London ships, and not a few belonging to Liverpool, and I say it, with all becoming pride and regard for honour;—they will compare favourably in morals, refinement, and sobriety with their employers, and in very many cases *are immensely their superiors!* Will they—(the members of this charitable Local Marine Board)—dare to tell us that "experience has fully demonstrated the necessity of keeping temptation out of the way" of these men; men who are surrounded by everything which can tempt them to commit themselves. We are proud of such men, and they are an honour to the profession. I also

make bold to say thousands of such men are to be found who would and do give the lie by their daily conduct to such base calumnies as that under notice. If this one Board had been but honest, it would have qualified its wholesale condemnation, by telling us that if there are many who justly merited the expression used by it, there are also a far larger number who are above temptation of alcoholic fluid called brandy.

That there are so many in the first lot, we have to thank our Liverpool shipowners for being so energetic in keeping down wages. They have tried it most persistently, and managed it so successfully, that now that they are finding out that the *article* they have got is not so good as they expected *at their price* they are beginning to cry out in earnest.

Liverpool is notorious for low wages as compared with London, and it is equally as notorious and conspicuous throughout every foreign port, that the London shipmasters are gentlemen as compared with their Liverpool contemporaries in the proportion of two to one! Every firm abroad, every government official, every consul, in fact every one who does business with both ships, that is of London as well as Liverpool will assuredly corroborate my assertion. I trace the fact to the low wages and the special treatment from our Liverpool employers, which very soon disgusts right-minded educated men, and as a consequence they wend their way to London, where such men are better appreciated, and a fair remuneration given to them for their services. This is no imaginary statement, but one which takes place daily!

Probably many of your readers, Mr. Editor, may say I have invidiously exalted the London captain, over his Liverpool brother. Possibly it may be so; nevertheless they will concede, that I have in all honesty and integrity of purpose stated the truth. My first desire is to sustain the position of the shipmaster in society in that estimation which is accorded to it in London, and to which we may justly lay claim; and then to contribute my mite, however small, to defend our characters from such Local Marine Boards as that one which has just told the world that we are unfit to be trusted with a *bottle of brandy!* As a humble member of the "cloth," it behoves me, and every master also who possesses any self-respect to raise our voices, and point our pens to refute such base aspersions of our entire body.

It appears we must look to ourselves to uphold the honour and dignity of our profession, always popular and esteemed generally throughout the country. We have training ships lately established by means of the noble efforts of many gentlemen desirous of keeping up the status of the British shipmaster, and it will require their utmost endeavours, and we wish some of their pens also, to counteract the evil produced by such a report as that under our notice. We do not pretend to say, we are better than our neighbours, but we do contend, all things considered regarding the peculiar life we lead, that we are not worse, and possibly in very many cases something better than those who throw stones at us. Let the *employers* try honestly to elevate our characters, and most assuredly they will succeed. I am in

a position to state that there are firms in Liverpool which will not allow their captains to take any spirits whatever on board. Now surely this is a most degrading condition in which an educated man has to serve. He may be a most temperate man, perhaps an abstainer, and even one who abhors brandy; nevertheless we can imagine his desire to take some on board his ship, but his owners refuse, and thus—to be candid—they place him in the scale of brutes—as a being who is unable to regulate or control his appetites. Can you, Sir, conceive anything more degrading to an honourable man, or more depressing to the moral state of our profession than such treatment from our employers. It is, to my mind, operating equally against themselves because simple logic will tell me, that if I could not trust my captain with spirits on board, most assuredly I would *not* trust him with my ship. Such a proceeding would appear to be plain to the most ordinary mind. Then why is it that they will take men as commanders who cannot be trusted with brandy, and whose noses proclaim that fact to men of the most ordinary penetration?

Surely, no one will pretend to say that sober men are not to be had. Alas! there are too many idle at the present time, able and willing to serve if properly remunerated. No, sir, the real fact is:—The majority of our Liverpool shipowners will not pay wages to secure good men, but will rather trust to strong measures to keep those sober, whom they are perfectly well aware are not so, if spirits can be had. They start them off from home under the vain belief that they cannot have anything of that nature with them, as if it was possible to stop brandy from finding its way on board a ship if the master desires it. I might also ask such shipowners, how can they prevent those masters from indulging in a foreign port, as they most assuredly do? We have only to look at Bombay or Calcutta, and I assert we shall find the most drunken captains commanding ships owned by our very considerate friends of Liverpool, who in their wisdom do not allow spirits to be taken on board. The fact is notorious, especially in Bombay, where we shall find these British shipmasters loafing about the back premises of the “Dubash,” indulging in the proscribed liquor to an extent, which would open clearly the eyes of our short sighted Liverpool owners, and convey to them a truth which appears to be unknown to the majority of them, viz., the man who cannot keep himself sober of his own accord, will never be so under any kind of restraint when he can evade it. This fact seems to be ignored by them; for rather than pay good salaries to first-rate men, they will try to make *sober ones* by insufficient remuneration.

There is another matter not to be passed by without notice that tends much to depress our service, and prevents our best and most sober men from being recognised as they ought to be. In my estimation it is a grievance which should be taken up by the legislature for the sake of honest men of our profession. Is it not the fact that Insurance offices and Underwriters generally, will as readily—(notwithstanding a popular opinion to the contrary)—insure a ship commanded by a second or third rate man in the matter of temperance, as one commanded by the

best in the profession? Now this being the case, the majority of owners are under no obligation or pressure to secure the services of high classed sober men. Indeed, it may be questioned whether there may not be a demand for *indifferent characters* to take charge of ships, well insured, for a purpose, it may be surmised, for which honest men could not be found. There are unfortunately also honest men out of employment, and in needy circumstances, probably with their families in want, who are compelled not unfrequently to take charge of ships, which they know but too well are notoriously unseaworthy. As an instance, I would refer to the case of the *Utopia*, doubtless familiar to most of your readers. Such a case cannot be made too public, and with your permission I will quote from the Journal of the National Life-boat Institution of July last year, a few remarks relative to the pressure put upon shipmasters by our worthy Liverpool ship brokers. It is there stated—"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:—

"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, etc.'

"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 shipowning, which should so harden a man's heart as thus to steel it against the common dictates of humanity."

The editor\* may well remark, the letter to Captain Dickie "is a

\* Had our correspondent our volume for the year 1867, he would have found the whole case in our July number, with the history of the ship and her captain, which appeared simultaneously with the Life-boat journal. A more disgraceful case it would be difficult to find—or one more convincing of the wretched state of the laws regulating our merchant shipping that admits of such cases occurring—and we then enquired to no purpose, "is there never to be a remedy for such

precious epistle." I hope the writer's name is well known. I like his candour, it is to the purpose. There is no mincing matters, go you must, or I'll ruin you. Splendid fellow that. I somehow fancy our Local Marine Board must have secured his services when it penned the report to which I have alluded. He ought to be presented with a testimonial. I admire him—I do—and congratulate Liverpool on the possession of such rare goodness. I recommend the clergyman of his parish to present him with a Bible in which he may find some truths—useful to remember, when he again writes such letters to men placed as Captain Dickie was. By a careful perusal of such a Book, doubtless he would improve in his correspondence. We shall be glad to hear of his improvement.

I repeat, sir, that if we could get the Insurance offices and Underwriters to take an interest in having the best men selected for commanders, there could hardly be a more potent method of elevating our profession. We might then be quite certain that the right men would be in the right places. At the present time, half of our employers manifest the utmost indifference with regard to their captains. So long as they can get the vessels insured it is a matter of little moment. In short, I consider the element of Marine Insurance, as at present constituted, to be our greatest enemy.\*

It may not be out of place here, to say a word in conclusion, regarding these said Local Marine Boards, so that we may be sure whether the Board of Trade has adopted the best means of getting the most valuable opinions on an improved scale of provisions for sailors. If we look at the constitution of these Boards, I think we shall find that SHIPOWNERS represent three-fourths of their members. This being so, it is illogical to expect an impartial opinion, or even a recommendation on such a subject. Their interests are directly against improving the diet of their sailors, and we have only to fall back on their feelings of benevolence and justice. Whether or not such attributes are likely to prevail against their worldly interests I leave to the judgment of your readers. Unfortunately, my experience is not favourable to such a conclusion. That there are highly honourable men on these Boards I frankly admit, and would be only too glad to proclaim them. There may be names also, which do not bear such high reputation, presuming that I have honestly stated the facts. We may ask ourselves if these Boards are

evils?" We suppose not, for nothing like it appears, but more cases occur, and one only the other day, that of the *Culmet*, registered at Liverpool, in which the master is reported to have abandoned his ship prematurely, and by the Court of Enquiry condemned to lose his certificate for one year. A curious state of things came out too in this enquiry, said to be "by no means uncommon" at the port of sending ships to sea without "davits on which to carry boats," so that in case of "any one falling overboard some time must necessarily elapse in getting out a boat stowed inward, thus lessening the chance of saving life." We shall take some opportunity of printing this interesting report.—ED.

\* Here indeed our correspondent has exactly pointed out the evil,—he has hit the nail on the head; but who will do the rest? not England while she thrives under the present system.—ED.

in reality the best formed bodies of men, from whom to seek information on such a subject as an improved dietary scale! I think not, unless we have a qualifying element introduced of a nature to reduce *shipowners* to the minority.

To me it appears highly absurd, and we might as logically ask "Jack" what *he* would like by way of a change. Probably his desires would be as much *above* a just and reasonable allowance, as the shipowners will be below it. My opinion is that sailors would prefer the present scale of the *best quality*, and to be made legally so by a proper inspection, far more than an improved scale of provisions without legal means of causing them to be in reality of a better quality than what is found to be now generally placed on board ships. I may refer to Captain Toynbee's recent lecture before the Society of Arts, wherein he has shewn what prices are usually given by our benevolent shipowners for ships' provisions, and how impossible it is they can be good at the prices quoted by him.

I repeat that *quality* is the grand desideratum, and if there should be a change we do hope our legislators will insist upon *quality* rather than *quantity*. I might almost venture to say we would willingly pay a small tax to provide an honest and upright inspector of ships' provisions without any bias or prejudice whatever, so that we may not be left to the mercies of some employers, who delight in feeding us with *nice* mahogany looking beef, out of which we could carve them idols, which they would prefer to worship, rather than to eat.

I remain, sir, etc., etc.,

QUOD VERUM TUTUM.

*To the Editor of the Nautical Magazine.*

[We again repeat that our correspondent's remarks, having for their object the benefit of the mercantile marine of this country, are such as should command attention. If they do not receive that attention their constant repetition must follow.—ED. N. M.]

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## THE BANE WITHOUT ITS ANTIDOTE.

(Continued from page 36.)

It has been observed, and perhaps with much truth, that although all nations consume tobacco in various ways, yet none follow the habit with so much avidity as this;—and that no people suffer more from the deleterious effects of the weed than we do. In all countries the leaf undergoes more preparation, and consequently the injurious principle of it is very much lessened. But to come to the fact of its use, and the reasons for using it: in our last number we gave five reasons which perhaps were rather of a general kind. The Dutch say they require it because their climate is too damp, and the Germans use it

because theirs is too dry. The French are candid and honestly say they like it, and as for ourselves, let us take the reasons of the oldest and the youngest. The elder of the community use it from habit, and habit must be obeyed; and the younger, in fact the juveniles, use it because it is *manly*! Urchins are therefore seen with a pipe or even a cigar in their mouths like men, and yet half a century ago these would never have dreamed of such a thing, and if they had been caught at it by their parents, who should be their guardians, would have paid dearly for their timidity. But parents indeed, of the lower class especially, have lost all the wholesome rule and authority in these degenerate days that they formerly had, and seem to care little what their descendants do in that way, and very many others. And hence, these labouring classes suffer more in proportion in this country than in any other, for the tobacco they use is coarse and very strong, being *unwashed*, like those who patronize it, a fact which accounts for the brutal conduct of this class, much more than the beer and spirits which add theirs to its effects. Teetotalism and the pledge have done much in reforming some from the habit of taking the former; but it is yet wanted to keep down that worse habit of using the latter, so that its work is but half done, and that it will be ever entirely done we must not look for. And it is said, that tobacco smoking has increased among those who have taken the pledge to abstain from fermented or spirituous liquors; like the followers of Islamism, to make up for the loss of the prohibited wine,—they have had recourse to the stimulant of smoking tobacco. And thus, intoxication is even found among teetotallers to be increasing by the mere habit of smoking the weed.

It is very well known that there are two ways of smoking tobacco—the pipe and the cigar. Let us look into the former, and by way of amusement the mode of its construction. We mean, of course, the article of clay. The German wooden pipe extemporized out of the nearest hedge, we may leave for an after remark. But the use of the clay pipe has become so general, that its manufacture as a branch of industry is one of no small importance. The common tobacco pipe is made of a fine grained white clay, known by the name of pipe clay, and has much affinity to that plastic clay used by potters for making the common stone ware. It is composed of alumina, silicia acid, iron, and water; is beautifully white, and has strong detergent qualities, in consequence of which it is used to clean white leather garments and the belts of soldiers. It is, moreover, remarkable for adhering strongly to the lips and tongue after it is baked, owing to the large proportion of alumina it contains.

After being thoroughly washed and dried, this clay is ground to powder, and with water made into a thin paste, which is passed through a sieve to clear it of any impurities, and to remove from it all siliceous or other stoney matter, and is then allowed to subside in properly constructed clay pits. Having sufficiently rested, and a portion of its water disappeared by evaporation, the remainder is got rid of by exposing it to the sun's warmth, or by artificial heat, until the clay has the consistency of dough for the oven. It is then well kneaded, until

it assumes a firm plastic condition, when it is divided for use into moderate separate heaps.

It is now ready for the manufacturer, and a boy takes a portion of the clay from a heap and first rolls it into a ball, and, still by rolling, lengthens it out on a board into the form of a long slender cylinder; all these operations being effected by the palms of the hands. Thus, the stem of the pipe is fashioned, to the end of this stem, the boy sticks another lump of clay to form the bowl. This roughly formed pipe is then laid aside for a day or two, that it may acquire consistence. In this condition the pipes, as fast as they are made, are arranged by dozens on a board, and are thus handed over to the pipe maker.

This workman, as soon as they have acquired the requisite consistency, places each pipe separately into a mould of brass, divided longitudinally into two parts, and so constructed that each part exactly fits the other. This mould is of the exact shape of the stem and bowl of a pipe divided lengthwise into halves. The ends are made to be opened, and to secure the exact fitting of the halves of the two moulds into each other, there are pins in the one half fitting into holes in the sides of the other. But before he places the pipe in the mould, the maker perforates the stem with an oiled wire, beginning at the end of it furthest from the bowl. Thus, with this wire he forms the bore, directing its point by feeling it with his left hand as it passes through the clay. The pipe with the wire in it is next placed in one half of the mould, and the other is made to fit upon it, the two being smartly closed together with a jerk, and then firmly united by a clamp.

Now comes the dealing with the bowl. This is perforated with an oiled metal stopper, and forms the cavity, the pipe still remaining in the mould. In this operation the stopper is pressed into the clay by means of a lever, during which operation the wire in the stem is forced forwards and backwards until it appears through the bottom of the bowl from the stem, and then the pipe is considered as done. The mould is now opened, the pipe is removed from it, and the superfluous clay still remaining is taken off with a knife. The pipes are then left to dry for a couple of days, when they are scraped with a tool, and polished with a piece of *lignum vitæ* or other hard wood. After this, they are placed in the kiln and baked, and the rate in which this can be done will include fifty gross, as many as a man and a boy can produce in ten days, are finished and come from the kiln in from eight to twelve hours.

Thus, are the pipes in ordinary use produced, although they may not be all of the same size. The long stem may do very well for companionship at the tavern door, under the designation of "a yard of clay;" but for the working class this does not answer, and its length is soon reduced to suit their views, and that the heat of the bowl may warm their noses also, for they prefer a short pipe, and so much also is it preferred in France, that the new pipe is never used there when an old one can be had. Indeed, the Frenchman delights in a pipe well stained with the juice and smoke of the tobacco. His is never more than five or six inches long in the stem, and should this be downright



black half-way from the bowl it is all the better. Of course, such a condition is only obtained by length of age, for the age of a pipe, in proportion to its extent, is always a recommendation to the inveterate smoker. These short affairs are termed *pipes culottes*—and we have seen one of these purchased for as much as ten francs by a lover of tobacco smoke, while the original article, in its pure condition, cost no more than one penny. Such pipes are made much of: they are frequently tipped with silver, especially when they present that handsome dark brown colour from the effect of the tobacco smoke which so much delights the eye of the French pipe fancier. It has been observed above, that from the excess of alumina in the pipe clay, when baked it will stick to the lips and tongue, and it is on this account that it is tipped with sealing wax at the end of the stem for about an inch. Indeed, the effect of the baked pipe clay by adhering thus to the lips has often produced very awkward sores, and not unfrequently has occasioned cancer in the lip.

It is considered that the most expensive and highly prized tobacco pipes are those generally known as German, though they are really Turkish, being manufactured in Anatolia and imported into Germany. The substance of which these are made is called *meerschaum*, signifying *seu scum*. The term used by the French is *ecume de Mer*, a literal translation of the German *meerschaum*. This is nothing more than a species of magnesian stone, somewhat plastic and fond of sticking to the tongue. It is, in fact, a silicate with carbonate of magnesia, and water. When it is first dug from the earth, this meerschaum will make a lather like soap with water, and being detergent is used by the Tartars in washing linen. The pipes made of it are fashioned and then baked in the kiln. But as soon as they are imported into Germany, they are prepared for sale and exportation by being first soaked in melted tallow, then in melted wax; after which they undergo their polish; and in this condition they are received in Great Britain and France.

The Germans are no less fond of their pipe than they are adepts at constructing it; but it will be one of their own fashion. We have had the opportunity of witnessing the German soldier who happened to be at a loss for a pipe when on a march. At the evening bivouac or halting place, he would soon spy out a bit of the root of some tree in the neighbourhood of his tent, and this he would take and fashion into the bowl, which was soon bored for the reception of the weed, and a hole made at the base of it for the insertion of the stem. Then, in order that it might withstand the burning tobacco, it is carefully lined with tin. The stem comes next, but this manufacture was a short affair, for a mere piece of stick from the same or any other tree answers very well for this purpose. It is cut to the required length, according to the idea of the workman, a wire rids it of the pith, leaving the necessary tube, one end of which is cut to the size of the hole for it in the bowl, and the other is shaped flat for the mouth; and then the bend in it peculiar to the German pipe by which it hangs down from the mouth almost vertically, is given to it by first making it (as it yields

easily, being green wood), and then submitted to the action of fire it becomes fixed with the bend that is given to it. Thus, in the course of about an hour, the German soldier lights his newly constructed pipe, which he has improvised with the rudest of materials, but with which he has produced an article which lasted the author of these lines for many a month afterwards. Then, of course, the finishing touches to their German article were made at leisure. A silver coin is converted into a covering or door for the bowl, which has received various shaping of its outside, and being tinted with a solution of sulphuric acid received afterwards, bringing out the beauties of the wood, it has then a kind of polish, and assumes a varied brownish colour, soon looking as if it had been for a long time an old and valued companion, as it really performs the part of one. There is much ingenuity displayed by the German in the construction of his pipe, which is not carried so far in other countries.

The cigar is an independent way of smoking tobacco requiring no kind of trouble. But the luxurious and *recherché* likes a gold or silver mouthpiece for his cigar; perhaps one of amber is better, like the Turkish pipe. The Spaniard again has his own fashion of dealing with the subject of smoking, and commonly has a straw inserted in the end of his cigar. He will also find a substitute for the outer leaf of the cigar by cutting the tobacco into minute pieces as one does mincing meat, and roll them in a kind of dry Indian grass or paper, thence calling the cigar a *papelito*, like those made at Guayaquil in South America. The tobacco they use is of the mildest kind, but they have the disadvantage of the smoke of the paper or straw as well as that of the weed.

The real cigar is made with a prepared tobacco leaf which is rolled over its contents principally of stem and other loose parts of the leaf, and the end of the outside leaf simply twisted to keep the whole together. It is said that the best cigars are made at the Havana in Cuba, but it is also said that the greatest number of cigars sold in London as Havanas are really made in this country and of the strongest and rankest tobacco, reduced in strength by being merely soaked in water. Even does deception go so far, that it is no secret to find that this same water is so strongly impregnated with the tobacco flavour that it is used to impart that same flavour of tobacco to dried cabbage leaves which are soaked in it, and which afterwards serve to make the interior part of the cigar!

This may be well considered the very height of deception among those mysteries of trade, and with which tradesmen only are familiar; but is well worthy the attention of our smoking readers. Each person who smokes six cigars of the best kind every day (and there are many who consume far more than this number), bestows about £36 a year on the revenue. So that it is an expensive indulgence not justified by the resources of many who nevertheless encounter this expense. True it may be that cigars pass for Havanas, obtained also at a moderate price more suitable to the resources of those urchins of the lower classes to be met with in the streets of our metropolis and

other towns, but which on being examined would be found to contain that choice substitute of cabbage for the real leaf. In a domestic point of view the cigar is mostly objectionable; but there are those given to smoking who are the most selfish of human mortals. Their object is to gratify their own propensity, caring little how much it annoys their families. In the estimate of these it may be but a trifle that they inflict on their wives and children, the offensive odour of their clothes and their breath, or that they signalize their abode with the nauseous odour of stale tobacco smoke, but it is a degrading state of things to find a member of society squandering his money in the purchase of cigars, and obliged to deny himself articles which to him are of far more importance. Who could suppose that such a propensity would be gratified in preference to the satisfaction of sending his boy to school, or even supplying his daughters with clothing in order that they make a respectable appearance, or the satisfaction of seeing his family happy around him!

The cheroot is the name of the cigar produced in India formed with a mild flavoured tobacco, which being previously steeped in rose water has a very fragrant odour. Previous to being used for the cheroot, the dried leaf is spread on a table and covered sparingly with a light paste made with arrowroot starch, and so formed into a roll as to leave a channel for the smoke through its central part. The best cheroots are brought from the Philippine Islands, where at the capital town each resident family manufactures his own cheroots. There is a miserable kind of cigar called a cheroot, which is manufactured in this country of ours, but it is a very inferior article, and is sold at a low price to those who are ignorant of the nature of the cheroot, participating no doubt in the advantage conferred by the cabbage leaf!

As for reasons, or shall we call them *excuses* for smoking—perhaps those of a medical caste might be advanced as quite substantial. No one perhaps of the faculty itself but acknowledges the medicinal qualities of tobacco. Indeed we should not be far wrong in saying that there are but few medical men who have not themselves recommended, and many of them have themselves patronised the use of smoking. And admitting that all their reasoning for recommending it to be perfectly just and true, and that their recommendations are attended with good effects;—yet we may ask in our turn what do they leave behind? We fear that in too many cases the answer must be a confirmed habit seldom or never thrown aside, and in many cases followed to the great annoyance of families. Would that the effects were no worse, but we shall have to shew in the sequel cases more serious than these.

This class of smokers (juveniles) the individuals of which are in themselves each a reproach to their parents, has been specially alluded to by a lecturer on chemistry belonging to London, Mr. T. A. Smith, who has thus raised his warning voice to them. “I am grieved (he says) to see mere boys smoking cigars and pipes in our streets. These boys know nothing of the poisonous nature of tobacco, or the dangers connected with its use. They commence smoking from imitation of

others, more from force of example, some from the false notion that it makes them look manly. They do not know that the practice is especially injurious to the young. It involves them in expense, and leads to other evil habits." The effects of smoking on the health of boys has recently been investigated by M. Decaisne. The *Medical Times* of the 18th of July gives a summary of the results of this investigation.

It appears that M. Decaisne was struck with the fact of seeing smoking so common among boys; boys between the ages of nine and fifteen. He selected several cases of lads belonging to the "well off" class, who resided either in Paris or in the country. Of thirty-eight of these lads he found notable effects in twenty-seven, eleven of them having had the habit for not more than six months, and sixteen for more than two years; eight of the lads being from nine to twelve years of age, and nineteen from twelve to fifteen. In twenty-two of these lads he found various disorders of the circulation, palpitations, difficulty of digestion, etc. In twelve the blood exhibited a deficiency of globules, and M. Decaisne states that even a limited use of tobacco produces a pale, bloodless appearance, and that ordinary medical treatment is of no avail while the practice of smoking is continued. He also states that boys who smoke, exhibit a degree of stupor and dulness of the intellect, and a more or less marked propensity for strong drinks. However he found that on their giving up the habit of smoking these symptoms disappear.

It is much to be desired, he adds, that every boy who has adopted this useless and dangerous habit of smoking should give it up at once. It is a habit that cannot afford either profit or honour; but one which can injure health, causes a waste of time and money, and tempts those who follow it to the use of intoxicating drink.

And then M. Decaisne feelingly adds, if he could speak so as to reach the ear of every boy in the kingdom, he would say, "before you begin to smoke ask yourself what good you are likely to derive from it? Will it make you more healthy, more wise, or more useful in your generation?" Any intelligent boy who would ask himself these questions must inevitably come to the conclusion that smoking is better avoided entirely than taken up even lightly. And then he adds, whoever will look at the boy who smokes tobacco and will contrast his appearance, his general complexion, his general behaviour and pursuits with all these particulars in the boy of the same class of society who does not smoke, must inevitably come to the conclusion that smoking does not lead to physical or even moral excellence. The evidence as to the evil connected with the practice of smoking by boys when fairly examined is irresistible: and he concludes by exhorting every boy who reads his lines to have nothing to do with either cigars, or pipes, or tobacco in any shape.

M. Decaisne has spoken well, he has done his duty towards the juvenile class of smokers, he has pointed out the inevitable evils resulting from the pernicious habit, and if they cannot see the danger ahead, if they cannot perceive the enervated condition to

which it is inevitably leading them the fault is not his, it lies with them—and why? because neglected by their parents or else setting them with their advice or their admonition at defiance, they continue headstrong in gratifying an evil propensity. In former days parents would follow a very different course with these ill-disposed urchins.

Dr. Ure observes on smoking, that “some seek in the inhalation of tobacco smoke, a pleasurable narcotism; others imagine it to be beneficial to their health. But generally speaking smoking is a mere dreamy stupefying resource against *ennui*, which soon becomes an indispensable stimulus.” And he adds with admonishing truth, that, “the filthiness of this habit, the offensive odour which persons under its influence emit from their mouths and clothes, the stupor which it too often occasions; as well as the sallow complexion, the black or carious teeth, and the impaired digestion, all these prove that the great consumption of tobacco is really akin in working evil influence on mankind, to the use of ardent spirits.”

A Saturday Journal says on the same subject, “tobacco smoking on the whole is a mere idle and nasty habit, and as generally practised, is too often associated with low and dissipated taste. This opinion is given with reference to the strong and filthy tobacco used frequently as cigars in this country. But smoking like bathing is an eastern luxury of which John Bull with his clouded bearish tendencies has but a very faint idea. To persons whose minds undergo excitement nothing can be more soothing and grateful than to inhale the smoke of mild fragrant tobacco. It is in fact a tranquillizing sedative, and to sedentary persons especially, frequently gently stimulates a languid stomach, and it also aids in quieting nervous irritation. But the tobacco used generally in this country is a two edged sword acting as a stupefying narcotic and creating unnatural excitement, by irritating the stomach and provoking thirst. And there can be no doubt that the temperance and abstinence societies should direct their efforts as much against British tobacco as against British gin or whiskey.”

Now, although there is much truth in the foregoing that has our cordial concurrence, still there is one point on which we most decidedly differ. It is our opinion, and we assert it distinctly, that smoking in any degree and form, and with any kind of tobacco is really injurious. For a brief period it may give ease to the solitary or to the sedentary, most of whom are afflicted with dyspepsia. But by slow and small degrees it makes an inroad into the system that nothing can repair, and this of necessity by the manner of its action. It corrodes and destroys the teeth, it maintains, even in its mildest form the throat and its glands in a state of constant irritation, exciting an unnatural thirst. By causing an excessive secretion of saliva, which is generally discharged, or in more polite language expectorated, it deprives the stomach of a fluid necessary to the deglutition and digestion of food, and thereby the agents of digestion are robbed of natural and necessary aid. By its effects on the brain it produces loss of memory and also general deterioration of intellect. And lastly, by its general action on the nerves it generates not only depression of

mind but also considerable infirmity of temper. It may also be added that although for a short time it may prove a stimulus to the workings of genius, like the all potent alcohol, it excites but to destroy, and many a naturally highly gifted member of society given to smoking has survived the loss of that mind which once had rendered him the delight and ornament of his day and his country.

Ere we leave this part of the subject we will quote an extract from a lecture of Dr. William Parker, delivered (we believe) at New York, in the course of last year, that was preserved in our September number, and it is so important that it could never be too often repeated. He is stated to have said that nictorine, the alkaloid of tobacco, which imparts to the weed all its power as a stimulant, is one of the most deadly of poisons. A single drop of it would cause immediate death. A skilful eye and touch can easily detect its presence even in the skin. The *reaction* from this as from every stimulant, occasions a depression of spirits, which craves more, other stimulants. A striking confirmation of this is found in the fact that no inebriate person in our asylums can be reformed till he abandons the use of tobacco. Thus experience shows that to the reforming inebriate, the depressing effect of the weed makes the temptation to drink irresistible.

In France, he adds, it was ascertained by the government that from 1812 to 1832 the yearly revenue from tobacco was twenty-eight millions of francs, and the number of lunatics and paralytic persons in the kingdom was 8000; while now this revenue is one hundred and eighty millions of francs annually, and the lunatics and paralytics number 44,000.

The Emperor in order to discover whether there was any real connection between these two statistical items ordered, that in all the colleges a competitive examination should be instituted between smoking and non-smoking pupils. The non-smokers as a rule were found to be vastly superior to their competitors in all attainments, and an edict from the emperor broke in one memorable day 30,000 pipes!

Dr. Parker also said that in all his medical practice he had never known a man among the employes of a tobacco manufactory to be perfectly sound and healthy. To all outward appearance they seemed strong, but let them meet with an accident or from any cause need medical treatment, and it was found their recuperative power was greatly enfeebled. The offspring of the users of tobacco also inherit the taint of their parents. This latter consequence is indeed one of a very serious nature, and it is hoped has something of exaggeration about it. But we will here record some further medical opinions on the effects of using tobacco.

We have read somewhere lately that a certain Dr. Potter, a wealthy physician of Cincinnati in Ohio, recently deceased, attached a condition to the bequest of a great part of his property that the legatee should always abstain from the use of tobacco in any form; a habit, he says, that "dwarfs the intellect of every man who adopts it." There can be no doubt that the opinion of this testator has its value, whatever others may think of it, and they should not forget in forming

their view of it that it was the opinion of a physician. Again it is stated that a German doctor has traced several instances of lead colic and paralysis to the use of tobacco held in leaded boxes. And a French doctor asserts that tobacco held in leadfoil (improperly called tinfoil which it is not), will gradually become impregnated with a poisonous salt of lead. But we firmly believe that the more we look into the opinions of medical men on the effects of smoking, the more shall we find recorded against its use, and we have perhaps urged some formidable testimony on that score already.

There is a paper in the Magazine of Domestic Economy, with a quotation from which we will conclude our present notice, reserving the conclusion of our views concerning it to another number of our work. It says, "the fascinations of this deadly plant appear irresistible as the gaze of the basilisk, or the tuneful voice of the syren. He who has once acquired a taste or desire for the excitement it occasions, can seldom under the depression occasioned by its reactive effect, resist again seeking relief from its stimulating power. Smoking tobacco is of all acquired habits the most difficult to get rid of: and yet with what discomfort and uneasiness has it been attended ere it has occasioned pleasure to its advocate. If some persons have become smokers of tobacco for a remedial purpose, that is for medical effect, many more have acquired the habit from mere bravado, when only boys, aping the habits of men, following their bad examples; indeed, by all when it is acquired this has only been done at the expense of sickness of stomach, and disturbance not only of this organ, but of the whole system. We have known youths who have begun this filthy habit become imbecile ere their intellects had time for their full development. The author then observes, we ourselves well remember after being persuaded once in our boyhood to smoke a pipe, the anguish we suffered at the time, and the distressing depression of spirits attending it for several days afterwards. And can such an effect, he asks, produced in persons of delicate and perhaps already over excited constitution ever be pronounced wholesome? Most assuredly not: it will perhaps assuage pain for a moment and the weed judiciously administered may do so in future paroxysms. But when taken every day it soon shews that it is death's magnet, drawing man to his grave by as unyielding an attraction as that by which the loadstone draws iron filings to itself.

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#### THE SUEZ CANAL.

[The following account of the *Rob Roy* canoe through the Suez Canal, by its commander, is from the *Times*, and with the extract from *Mitchell's Register* will be interesting to our readers, who will remember our plan of the Isthmus in page 260 of our last volume.]

THE Suez Canal Company have been fourteen years at work upon their gigantic labour, and as they announce positively that the canal will be opened within a year from the present time, perhaps you will allow me to give a brief account of its present appearance, as seen during a very careful examination of the whole line from my canoe. The canal is to be 100 miles long, and 100 yards wide (at the water's edge). The depth throughout will be 25ft. in the middle. The direction is nearly north and south, with a few turnings, but no locks or bridges. There will be a slight tidal current along it, but no one can say at what intervals. Already about 50 miles of the cut is filled with salt water, and is traversed daily by numerous small vessels and some steam-launch mailboats, while the countless barges, dredges, and coalboats, all worked by screw propellers, which ply day and night, make a din and bustle in the sandy desert very unromantic, indeed, but exceedingly interesting to observe. Of this 50 miles many parts are not wide enough yet for large vessels, and only a small portion is excavated to the full depth. The remainder of the canal is more or less dug out. While some parts are quite dry, others are put under water to moisten the sand; others have great blastings of rocks, and one long section of 20 miles has to wait until the sea is admitted into the great dry basin of the future lake.

The sensation of wonder at the prodigious scale of the operations in progress increases day by day as one moves along what seems to be a wide river with villages on the banks and smoky funnels and white sails on the surface. The hydraulic machines which groan and snort and rattle their chains as they work, are of enormous size; and though each of them seems to be pouring forth a volume of mud, yet the mind finds it hard to believe that all of these together can lift up and throw over the banks enough to make any appreciable progress between yesterday and to-day. The sand dredged from below is either carried out to sea in barges or (further inland) is delivered in a stream from a lofty iron tube, 220ft. long, with its mouth over one bank, or it is hoisted up an iron inclined plane and cast upon the shore, until the heap on each side of the water is 50ft. high. The engines for this purpose are 40 in number, and each of them cost £40,000. The expenses at present amount to £200,000 every month, and the work has already absorbed eight millions sterling.

Port Said is the little town at the north entrance of the canal. It is built of wood, with wide, straight streets, and houses that look like brown paper, and that would burn from end to end in ten minutes. Hotels, cafés, shops, and bazaars are crowded by 6,000 people of every nation, but with the Greek and Levantine element largely preponderating. The two long piers of the harbour stretch their white arms into the sea, but the area enclosed seems very small and completely exposed to the northerly gales. These piers are made of blocks of sand, cemented with lime, each block being cast separately in a mould, and then carried out to its place in a barge. The magnitude of this part of the work may be faintly estimated when we know that each block weighs ten tons, and that there are 25,000 of them,



Ismailia is the pretty town half-way along the canal, which here enters the Lake Timsah ("crocodile lake"). Here the Arabs and their camels and the jackals of the Desert are alongside the steamboats, the whirring lathes and sounding forge-hammers of the company's workshops, the tall poles of the electric telegraph, and the hot rails of the railway, while a cool and sweet draught of Nile water may be had from the fresh-water canal which comes hither all the way from Cairo, and then branches out north and south along the whole extent of the salt water canal. The fresh water canal is already a blessing to Egypt. It is from 30 to 40ft. wide, and boats with all sorts of cargoes are towed through it by men on foot, or sail along gaily if there is a breeze to fill their snowy wings. My canoe excited the greatest delight among all this river population, both when she skimmed over the water with her blue sails, or rested by the bank with her cabin rigged up, and my dinner cooked, and my little reading lamp and mosquito curtains arranged for the night. I managed to sleep thus in the canoe very comfortably, though the nights were cold; and on the Lake Timsah a jackal paid me a visit at a very unfashionable hour by moonlight. During one day a violent gale swept across the canal. To look at the Desert was to see a vast yellow picture of men and camels dimly floating in a sea of sand without any horizon. The quantity of sand whisked from the plain and cast into the canal water by a wind like this will be a serious matter to deal with. One ounce of sand per square yard amounts to 500 tons on the whole canal, and the wind sometimes blows in this way for a month together. At Chalof I found 14,000 men at work. They labour very hard indeed, running up the hill with baskets of sand on their heads. About 1,000 donkeys walk in long lines with neat mat baskets on their backs. In curious and close contrast to these simple carriers the mighty power of steam toils and puffs as it hurls up huge bulks of heavy clay, and it is, perhaps, only in Egypt one could see human and animal power exerted in such competition with steam power. The labourers are sent from all parts of Egypt. They must come, but they are highly paid—from 2*l.* to 3*l.* a day. Prices both of labour and of food have risen very much since the canal has been begun, but the supply of fish has rapidly increased. The salt water canal teems with fish—one of them leaped across my canoe a few minutes after I first set sail; and on the fresh-water canal I stopped once to receive a letter from a messenger, and while putting it into my breast-pocket as I sat in the canoe a beautiful little fish sprang from the water into the same pocket with the letter. The spectators were loud in their congratulations at this "lucky omen," and I had the fish broiled for dinner. The officers of the *Malabar* troopship were very kind to me, also the captain of the *Feroze*, which is waiting to take Lord Mayo to India. The expedition for the survey of Sinai left here a few days ago, and we expect Dr. Livingstone to arrive next week. The interest felt about this great man is intense. A special correspondent of a well known American newspaper is waiting in readiness to telegraph all he can gather on the subject to New York.

At this, the Red Sea end, the works of the canal seem very far behind. The entrance port has all the obstacles of a shallow mouth, soft and shifting sand for bottom, and a crooked irregular tide eddying about in a most puzzling way. When the passage from the Mediterranean to the Red Sea is open to the world it is intended to tow vessels through by tug boats working along a chain which lies at the bottom of the water. Steamers are not to be allowed to use their own paddles or engines for fear of damaging the soft sloping banks of the canal by the "wash" thus created. The difficulty of towing a vessel of 2,000 tons in this manner when the wind presses her to one side is an objection to the whole scheme which I have heard no feasible answer to and as I have been towed in this way for hundreds of miles in my yawl, and was compelled to tow my canoe myself for a whole day on this canal, I cannot help urging this point distinctly, while carefully abstaining from expressing opinions as to the probable return which the outlay on the whole scheme may reasonably expect to receive in the future.

During the fortnight I have passed on the salt water canal, the fresh water canal, and the two lakes, Menzaleh and Timsah, I have been most kindly treated by all the officers of the company and by hundreds of Arabs, Nubians, Greeks, and even Chinese, who always cluster round my little canoe. Sometimes, it is true, I found it advisable to show, among other things, my pistol capped and cocked, but all of us were good-humoured in our intercourse, and the friendship commenced by a pleasant laugh together is, I always find, the best in the end among barbarians of that sort. I have now brought my former dragoman from Syria, and intend to paddle down the Damietta branch of the Nile while he takes my heavy luggage in a boat. Then, having crossed Lake Menzaleh, I shall take the canoe to Damascus and launch her upon the rivers Abana and Pharpar, which have never had such a thing as a boat on them, and then to the sources of the Jordan and Lake Huleh, where there must be something to discover, before I descend the Jordan into the Lake of Gennesareth.

To the above we add the following further information from *Mitchell's Maritime Register* :—

THE President of the Suez Canal, M. F. de Lesseps, some time ago charged a Commission of Naval Officers and Engineers, and other practical men, to examine and report on sundry questions relative to the navigation of the Canal. The Commission, among the members of which were M. Dupuy de Lome, of the Ministry of Marine, and Vice-Admiral Mares, has just presented a report which sets forth in detail the questions propounded, and the conclusions come to on them. The following is a translation of the principal part of this document :—

I. What is the minimum speed consistent with safe steerage?

It has been admitted that an effective speed of three knots per hour, or five and a half kilometres, would be sufficient to steer in the Canal; but as for some engines the number of revolutions corresponding to it

would not permit them to give a regular movement to the vessel, it has appeared advisable to increase the minimum to four knots, or about seven kilometres.

II. What maximum speed might be permitted without endangering the works of the Canal ?

This question has appeared to depend on local circumstances—that is to say, the nature of the ground and the section of the Canal ; but, without entering into details, we may state that the necessity of effecting, as rapidly as possible, the passage of the mail steamers from one sea to the other without delay, has determined the Company to admit for the steamers an average speed of ten kilometres per hour, which will enable them to go through from end to end—a distance of about one hundred miles—in ten hours. Sailing vessels may effect the passage at an average speed of from six to eight kilometres, or in all in twenty-four hours, under ordinary circumstances.

III. How many sailing vessels may be towed in a single convoy ? Which is the safest method of towing ?

The Commission has not thought it advisable to enter into the measures of detail concerning those questions. It has thought preferable to leave the best solution to be discovered by practice.

IV. On what parts of the Canal should the width be increased to permit vessels to pass each other in opposite directions ?

The plans of the works comprise already three large wharfs, the one at Kantara, a second in Lake Timsah, and the third in the Bitter Lakes. That number of basins has not appeared to the Commission to offer sufficient facilities for the service, and, without in any way prejudicing the ulterior liberty of passing in any part of the Canal, its members have considered that, to assure the rapidity of the passage and the security of the traffic, it was advisable to create ten other basins of smaller dimensions, at an average distance of eleven or twelve kilometres from each other, their exact position to be ultimately fixed in conformity with local circumstances and the requirements of the service.

V. What will be the influence of the tides at Suez on the navigation in that part of the Canal between that Port and the Bitter Lakes ? Should that influence compel the Company to modify the service of sailing ships, in dividing the time into periods of twenty-five hours, instead of twenty-four.

The interest which vessels will have in taking advantage of the movements of the tide appears incontestable. There does not, however, appear to be any necessity for subordinating to it the movement of navigation. This question can only be solved when the effect of tides in that part of the Canal shall be known, and experience only can decide on that point. A decision at this moment would therefore be premature, and would possess but little interest, as a good organization of a service, founded on a day of twenty-four hours, might easily adapt itself to a day or period of twenty-five hours, the large number of wharfs offering every facility in that respect.

VI. Should the objection to take a pilot on board be extended to vessels of thirty tons ?

The Commission, sharing the idea expressed by the President Director to adopt a most liberal decision in that respect, has been of opinion that the necessity for towage and pilotage should be restricted to vessels measuring over fifty tons.

As for vessels of a smaller tonnage, it has thought that they might be allowed to navigate, on their own responsibility, without being towed or piloted, the Company reserving to itself the right of putting an end to that liberty if found by experience to be necessary.

VII. Is it necessary to light and lay down buoys in all parts of the Canal, and where required? What is the best method to be adopted? In the Canal proper? In Lake Timsah? In the Great Bitter Lakes? In the Smaller Bitter Lakes? In the Ports?

**THE CANAL PROPER.**—The Canal proper consists of all those portions in which the banks are at a certain elevation above the water—that is to say, the whole Canal, with the exception of those portions which pass through Lake Timsah and the Bitter Lakes. The existence of the banks, the view of which is very apparent, as they are of a minimum height of six feet, has appeared to offer to the pilot a sufficient indication to enable them to keep the largest vessels in the deepest part of the channel, and to raise a doubt as to the necessity for buoys by day and lighthouses by night. Prudence, however, requires that a practical experience should be obtained on this subject; and it has been decided that essays at navigation should be made by day and night in that part of the Canal, terminated as early as possible, so as to ascertain, long before the opening of the Canal to large vessels, what measures there may be a necessity to adopt.

**LAKE TIMSAH.**—This lake having naturally only a draught of eight metres (twenty-six feet) of water, has had to be deepened in the line of the Canal. But, with the exception of the extremities towards the shores of the lake, a system of buoys will be necessary to mark out the line of deep water. This will be effected by means of buoys by day and lights by night, the former at a distance of five hundred metres from each other, and the latter placed at every two kilometres (one and a quarter miles).

**GREAT BITTER LAKES.**—With the exception of those parts near the shores, the Great Lakes have naturally a depth of water equal or superior to that of the Canal, and for such a width that the line of navigation will not require to be buoyed in the interior of the lakes. As to the extremities where the sides of the channel are hidden by the water, the Commission has been of opinion that the entrance should be marked by two ordinary beacons opposite to each other on a timber framework, and by a light at least thirteen metres high, placed in the line of the axis of the channel at about one kilometre from each extremity. At the points where the Canal enters the lakes, those parts of the channel submerged will be buoyed, as for the similar portions of Lake Timsah.

**SMALL BITTER LAKES.**—Like Lake Timsah, these lakes do not offer naturally a sufficient depth, and have had to be deepened for the passage of the Canal. As in Lake Timsah, also, the sides of the

channel are submerged, and will be buoyed in the same manner in those parts forming a straight line. As to those two parts forming a curve in this part, the one, destined to become a large basin, presents already a breadth of forty-four metres for a large portion, and which is to be extended throughout its entire length. The other has but a slight salient, and extends only a short distance. To overcome the obstacle it will suffice to remove the centre of the convex part, commencing the widening at the tangents. The curves will have to be lighted on the land-side at the prolongation of the straight line, and the channel will be marked out on the opposite side.

PORT SAID.—The Commission has adopted the following system of lighting:—Two port lights of the fourth class on the salient points of the eastern and western jetties, one on each. Two small lights at the entrance of the Canal proper—one on the Asiatic side, at the western angle of the projecting part of the outer port; the other opposite, on the African side. A lighthouse of the first class, visible at a distance of twenty miles, erected inland at a distance of a kilometre from that existing at present, so as to form the summit of an angle from the channel which gives access from the roadstead to the port, and from the great straight line of fifty kilometres which the Canal presents, from Kantara to Port Said. The whole of these lights will enable vessels to guide themselves, either to pass from the roadstead into the channel of the outer port, or to keep in the channel, notwithstanding the distance of the jetties, or to pass from the outer port to the inner and *vice versa*. It will also light the long, straight line of the Canal which commences at Port Said.

The Commission also calls the attention of the Company to the importance of the lighthouse to navigation; and to the necessity of considering the provisional measures to be adopted, previously to its erection, to assure the line of direction in entering the channel, in case that apparatus should not appear likely to be ready before the definite opening of the Canal for the transit of vessels.

SUEZ.—The system of lighting adopted by the Commission here is as follows:—Five small lights—the first at the head of the transversal jetty on the east; the second on the salient point of the western dyke, at the southern end of the terreplein; the third at the entrance to the basins of the arsenal on the northern side; and the two others at the entrance of the channel properly speaking, one on each shore. The Commission also believes that there will at some future time arise a necessity to complete that series of lights by a large directing lighthouse on land: but it remarks that there already exists in the roadstead a floating light maintained by the Egyptian Government, and considering it sufficient for the present, simply recommends the creation of the five above-mentioned lights.

VIII. and IX. What system of measurement should be adopted as a basis for levying the tolls? What is the relation between the ton chosen as a type, and the official tonnage of the different nations?

The Commission admits that the English official ton would be the best standard to adopt. But it bears witness to the fact, that no exact

relation can be established between the English and the official tonnage of the different nations, the measurement not always admitting of a comparison, even between vessels of the same country. The question of the unification of tonnage being at present before an International Commission, and there being a probability of a solution at a not distant period, the present Commission is of opinion that, while awaiting the international settlement, the Isthmus of Suez Canal Company should adhere simply, for levying the tolls, to the tonnage fixed by the papers on board, without distinction of flag.

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THE LATE COURT-MARTIAL ON CAPTAIN WILMSHURST,—*Ascension.*

[We had intended preserving in our pages the defence of Captain Wilmshurst on the late court-martial at Portsmouth, but are obliged by want of space to confine ourselves to the following view of it from the *Daily News*.]

FROM the 11th to the 20th of January, the public has seen in the daily papers long reports of a court-martial which has been sitting on board the *Victory* at Portsmouth. The trial has not made as much noise as some similar trials have done, and the public interest in it has not been great. But to all who serve under the British flag it has been of first-rate importance. To the outside public it appeared something like a feud between the Royal and Merchant services; or between the underwriters at Lloyd's and the captain of one of her Majesty's vessels. It was, however, very much more than this. The charge against Captain Wilmshurst was almost equivalent to that of playing the part of a gentlemanly wrecker; and the honour of the whole service would have been compromised had such an accusation been true. The undisputed facts were these. On the 11th of last August the ship *Bremensis* was on her voyage from Bombay to Liverpool with 6,181 bales of cotton on board, and a quantity of seeds, dye nuts, and coir, when she struck on a reef off the Island of Ascension, and eventually became a wreck. Captain Wilmshurst, commander of the *Flora*, was at that time in command of the island in consequence of the absence of the Commodore, and was living in the official residence. Hearing of the wreck, he sent a tug with fifteen of the *Flora's* men to help, and the eventual result was that a large portion of the cargo was saved, though the ship herself became a wreck, and was broken up. The charges against Captain Wilmshurst which arose out of this transaction were, that on the 19th, eight days after the wreck, he suddenly suspended the salvage operations, and forced the captain of the *Bremensis* to apply to him to survey the ship and have the wreck and remaining cargo sold; that the ship and cargo being then sold by auction were bought by Captain Wilmshurst himself for £20; that he then resumed salvage operations and got six hundred

more bales of cotton ; that he sold some of this afterwards for £365 ; and that he did all this, not for the advantage of the underwriters, but for his own personal profit. In support of this serious charge a large number of witnesses were brought—the chief being Lieutenant Molloy, of the *Flora*, and Captain Webster, of the *Bremensis*. There was not much conflict of evidence. The main facts were admitted on both sides, the question was as to their meaning. It was not disputed that a large portion of the cargo had been saved and sent off upon another ship—the *Rajasthan*—nor that the salvage operations were stopped on the 19th of August, and resumed after the purchase by Captain Wilmshurst ; while the captain of the *Rajasthan* admitted that £20 was the fair commercial value of the wreck, and it was also admitted that the property saved after the sale of the vessel had been appropriated to the payment of the salvors, and the surplus had been handed over to the underwriters. The real question therefore was not whether Captain Wilmshurst had acted wisely, but whether he had acted honestly ; not whether he had been high-handed, but whether his high-handedness was for his own benefit, or that of the men who were working under him. The court-martial, expressing, as we understand it, no opinion on the wisdom or propriety of Captain Wilmshurst's course, believe that he acted with entire honesty and honour. After a long and most tedious investigation they have honourably acquitted Captain Wilmshurst on both the charges brought against him, and on Wednesday afternoon Admiral Pasley, as President of the Court, returned him the sword which he had done nothing to dishonour.

No amount of wading through the weary columns of the evidence will enable the outside public to get a clear view of all the points in dispute. Two or three things are, however, quite evident. This trial was only an incident of a quarrel which began over the wreck itself. The captain of the *Bremensis* and Captain Wilmshurst quarrelled who should save the ship. The one wanted to be master on board his own vessel and over all his own cargo, the other required that his own authority should extend wherever his men were at work. Then, to complicate the quarrel, Captain Wilmshurst and the agent of Lloyd's were on bad terms. The people who had to do with the wreck wanted to have all the public servants on the island set to work to help them, and the head of the public service did not choose to send them. Then there seems to have been some difficulty about the pay of those who had been employed ; a difficulty which Captain Wilmshurst probably tried to settle by selling a portion of the salvage on their behalf. The Captain himself, in a statement which we, following the court, receive as entirely true, spoke of the irony of his position. It was through him that £30,000 had been saved for the underwriters, yet he was the object of a prosecution. The cost to them had been only £325, and he and the men under him had lost by the transaction. The cotton recovered after the purchase of the wreck had been recovered unexpectedly, owing to the extraordinary fineness of the weather. He had certainly expected that his men would receive a bonus on that cotton from the underwriters, but the only bonus he had got was this

prosecution. Captain Somerset, in his evidence, gave glimpses of the quarrel as to jurisdiction, which curiously peeps out here and there all through the trial. He thinks Captain Wilmshurst was right in insisting on being captain of the island, and not allowing other people to interfere; though he thinks he was foolish to interfere so much about the women, as they made their husbands hostile. So that there were evidently women in the dispute, and some hysterical proceedings in consequence. Captain Somerset, however, in the matter of buying the wreck, thinks he should have done as Captain Wilmshurst did, and have bought it for the benefit of the island; but after this dispute he would leave masters and underwriters to take care of themselves. The prosecution was evidently a mistake; and the wise course would have been to have settled the dispute without bringing it before the public. But there were more passions than interests involved, and where there is passion there are always complications, amid which all interests suffer.

The public cannot be expected to understand the disputed questions as to salvage and jurisdiction, out of which these quarrels rose. But what they can understand is, that one of our most cherished services has had its fair fame challenged, and that in the result that fair fame is vindicated. The accusation against Captain Wilmshurst struck at the character of the British Navy. His honourable acquittal vindicates that character. Had he been guilty, the service would have received another and less satisfactory vindication. The British people are proud of the men to whom they entrust the honour of their flag. Their honour is the honour of the nation, and they must be, like Cæsar's wife, above suspicion. It is our national boast that wherever the flag waves or the uniform is seen right and justice have a representative in the world; and though the boast is one which cannot always be justified, it marks out the ideal towards which the national aspirations tend—an ideal which inspires the best and noblest of our public servants, and from them spreads a sentiment of honour down to the humblest ranks.

#### THE LATE COURT-MARTIAL ON CAPTAIN WILMSHURST.

SIR,—I observe in the report of the late court-martial at Portsmouth on Captain A. Wilmshurst, R.N., that he in his defence stated as follows:—"On the word of an officer and gentleman, although he could not be sworn, he (Captain Wilmshurst) made no proposition to abandon the wreck. Captain Webster made no complaint to any one at Ascension—he had, in fact, nothing to complain of. He wished the cotton saved, and it was done. He wished to load the *Rajasthan*, and it was done. The most signal proof of Captain Webster's satisfaction of what had been done at Ascension was the absence of any letter of complaint by the mail leaving Ascension on the 1st of September, for had such a letter been written it certainly would have been forwarded from the owners or underwriters to the Admiralty for the use of the prosecution." I beg to inform you, and through you the public, that on the 31st of August I. wrote from Ascension to the owners of



the *Bremensis*, complaining of what had occurred, stating that, in my opinion, many illegal transactions had taken place by order of the authorities. This letter was received by the owners in due course, and why it was not produced at the trial, or why the owners were not called as witnesses, I am unable to say. With regard to the other remarks made by Captain Wilmshurst, in his defence, I can only repeat what I stated at the trial, on oath. But I presume matters cannot remain as they are at present, and that ample opportunity will be afforded to ventilate and clear up the whole affair.—I am, etc.

THOMAS WEBSTER,  
*Master of the late ship Bremensis.*

18, Hicks-road, Seaforth, Liverpool.

CORRESPONDENCE.

GIBRALTAR.

*To the Editor of the Nautical Magazine.*

“9th January, 1869.

SIR,—Doubtless you have read and deeply reflected on the proposition, made by the Honourable Admiral Grey, that we should give up the Rock-fortress of Gibraltar, and take instead the port of Centa, on the African shore! The arguments adduced by the honourable and gallant Admiral have been very sensibly opposed by a writer in the *Times*, under the signature of *King Coal*,—who has shown himself quite an illuminator of the subject without exhibiting any degree of unnecessary warmth! The black sovereign’s letter, and that of *Gladio*, another correspondent of equal powers of reasoning, must have accomplished the important task of relieving the British public from all apprehension that the cession of Gibraltar would ever be contemplated by a *sane* English Government.

For the sake of Spain herself, it ought to be deprecated, for the possession of Gibraltar by a power whose interest and ambition is the preservation of the peace of Europe is a “*guarantee*” and a most “*material*” one of the protection of that *often imperilled* country from the designs of France. If the port for steamers *be* imperfect, have we not abundant *unemployed* labour to render it all that is needful, and Royal Engineer officers who might be most beneficially occupied in directing such works? Now that such numbers of our working classes are miserably dependent on Parish relief, the opportunity should be seized upon to open such fields of employment as would strengthen the outworks of our country’s dependencies and contribute to the safety of our Royal and Merchant Navy so constantly traversing the Mediterranean Sea. Certainly some works of national importance should be devised by our rulers to employ the energies of the great

numbers of able bodied men now pining on parish resources, and often sinking into paupers or thieves for want of a healthful exercise of their bodily and mental powers.

We greatly, undeniably, require a minister of PUBLIC EMPLOYMENT to take cognizance of the great question, What shall England do with her involuntarily idle? The Poor Law Commissioners cannot answer that question, and never will. This is a truth no more to be conceded than the fortress of Gibraltar. We are overwhelmed with poverty, and fearfully threatened by crime, the consequence of that insufficient employment which the State ought to supply, if private sources of occupations fail! And as the people must be fed, why not employ them?

I leave the question to the common sense of your readers,

And am, Sir, yours faithfully,

NO MATTER WHO.

[It appears much has been said lately about restoring the important post of Gibraltar to Spain. What for? But we have not yet heard of any ministry as having even entertained an idea of this suicidal character, nor can we believe that any one ever will.—ED.]

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#### THE JANUARY "NAUTICAL."

SIR,—The first paper in your January number commends itself to your readers as doing credit to the writer, and as doing honour to you for its insertion, and I venture to say that the *Nautical Magazine* with its steady advocacy of whatever can better the condition of seamen, has a special claim upon the goodwill and support of the entire nautical community, and I venture also to think that in whatever estimation your journal may be held for the value of its nautical information, it will be felt that the best and highest distinction you have achieved during a long and arduous editorship, has been your labour of love for the sailor's safety, health, and well-being.

I fully endorse what is contained in your correspondent's letter, and have little doubt that with your aid it will meet with attention, at the same time, it is too much to hope that our merchant seamen will be cared for as they ought to be while it continues to be in the power of shipowners to send their vessels to sea at the risk of others, and whenever there may be a government wise enough and strong enough to pass an act limiting insurance to two-thirds the value, we should see a great change for the better, both in our ships and in all on board. Not the least important change would be that commanders would cease to be looked upon as they are now commonly done by owners, and I see reason to expect that commanders themselves would be led to take a truer view of their responsibilities, and be reminded that they have a duty to the crew equal in obligation to that to the owner. No one who is acquainted with the sea services of England, both naval

and mercantile, can doubt that among the causes of "Wreck and Wrong at Sea," one of the most fruitful is the *one sided way* in which the men in command do their duty.

Recurring to the letter of the *Latin signature*, I hope the author's suggestions will have the effect of inducing his nautical brothers to bestir themselves and help to fill the pages of what he rightly calls "our professional magazine," and I would make the suggestion whether it ought not be looked upon as both a privilege and a duty to do so.

In a case where the crew of a ship in port has been weakened by bad or insufficient food—say where two or three are in the sick list, from such a cause, I would advise the crew to refuse to go to sea until the complement be made up, and as the cost and delay of doing this would fall upon the owners, that is just what it should be.

W. C. P.

*To the Editor of the Nautical Magazine.*

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#### THE EARTHQUAKE IN CALIFORNIA.

HARDLY less startling than the late eruption on Hawaii, or the still more recent convulsions in South America, is the news received from San Francisco by the late mails, chronicling the most disastrous shocks that ever occurred within the United States since their establishment as a nation. It has been so fully described in the numerous California papers received that we need not give the details at length. Suffice it to say that hundreds, if not thousands of houses in the city, and as many more in the villages about, received more or less damage from it. In a few instances it resulted in the total destruction of buildings. But such instances are not numerous. If we take into consideration the cost of repairing and reconstructing the buildings on which the earthquake has left its marks, the cost can only be covered by millions of dollars.

Private letters, which give fuller details, estimate the general loss to be larger than what the papers give it. But whatever it may be, it shows the terrible convulsions going on in the earth, which have successively broken out in various quarters—first in the West Indies, then on Hawaii, then in Peru, and lastly in California. Whether they are to cease now, or extend to sections hitherto considered entirely exempt from them, remains yet to be seen. The fact, however, that severe shocks have been felt lately in Ireland, Australia, and other countries where they were before unknown, may indicate what may follow.

There can be no doubt of some connection between these various volcanic convulsions, or that they all originate from one source; but, under some law not thoroughly understood, the seat of action moves from one section to another of the earth's crust. The disturbance of

the internal forces is undoubtedly greater and more general than at any time for many years, perhaps for a century. So long as that continues, there is no telling where earthquakes will next be felt, nor can any section of the globe be considered exempt from them.

The late remarkably smoky atmosphere, which extended from Puget Sound to Cape St. Lucas, and as far west as this group, unquestionably had a volcanic origin. Where the smoke came from no one appears as yet to have learned. It certainly did not originate in or near this group. But it may have come from the ocean, between this group and the mainland.

Our own belief is that there is a submarine range of mountains now forming, some two or three hundred miles distant from the California coast, and that in this range there are submarine volcanoes, which are occasionally active. Some two years ago when the *Comet* was 250 miles distant from the coast, opposite San Diego, a very heavy earthquake shock was felt, which gave the idea to all on board that the vessel was aground. Again last week we quoted an item from the *San Francisco Times*, giving the report of the ship *Broughton*, which experienced similar shocks on her passage to this port, and met the dense smoke referred to, which appeared to rise out of the sea.

When Lieutenant Brooke, in the *Feanimore Cooper*, surveyed the bottom of the ocean between San Francisco and this port in 1859, he found a range of mountains, about 250 miles from the California coast, running parallel with it, which reduced his soundings from two and a half miles to about one half that depth. This submarine range, if more accurately surveyed, might be found to approach still nearer the surface.

So far as we are able to learn from California papers, there is no active volcano in that State, or on the Pacific mountain ranges, which can be considered as the seat of the volcanic disturbances, and of the phenomena lately observed there. May not the theory then be plausible that the disturbances arise from a submarine volcano located a few hundred miles from the coast?—*Sandwich Islands Paper*.

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#### ABOLITION OF WOOLWICH AND DEPTFORD DOCKYARDS.

AN Admiralty order has been received at Woolwich dockyard, directing the yard to be finally closed on the 1st of October next. An order has also been received at the Deptford Dockyard, directing all the warehouses in the yard to be cleared by the 1st of April, the removed stores to be transferred to the transport department of the royal victualling yard. It was proposed to transfer the Deptford Dockyard to the War Department, the extensive buildings to be utilised as stores in connection with the Military Store Department, and a careful survey has been made with a view of carrying this arrangement into effect, but it has resulted in a decision that the dockyard is unsuitable for the purpose, and it will, it is believed, be accordingly rejected by the War Department.

## THE ROYAL NAVY IN COMMISSION.

The following list does not include all the Store Ships, Despatch, and Surveying Vessels.

Name of Vessel.	No. of Guns.	Horse Power.	Commander's Name.	Station.	Name of Vessel.	No. of Guns.	Horse Power.	Commander's Name.	Station.
Aboukir.....	86	400	Com. Karl H. A. Mainwaring (bearing brd. pendant of Com. A. Phillimore)	Jamaica	Dromedary..	2	100	Staff-Cm. J. Kiddle..	W. C. Africa
Adventure...	2	400	Capt. H. J. Raby	China	Dryad.....	4	300	Com. P. H. Coiomb..	East Indies
Agincourt...	26	1350	Staff-Com. J. Symons	Sheerness	Duke of Wellington ...	49	700	Capt. T. Cochran.....	Portsmouth
Algerine ...	1	80	Staff-Com. H. R. E. Grey	China	Duncan .....	81	800	Capt. C. Fellowes ...	N. Britain
Antelope ...	3	260	Lieut. J. Buchanan...	Mediterran.	Durham (late Active) .....	20	...	Com. G. G. Duff.....	Sunderland
Arethusa ...	35	800	Capt. R. Coote.....	Sheerness	Dwarf.....	4	120	Com. C. F. Walker...	China
Argus .....	6	300	Com. F. W. Haller...	China	Eagle .....	16	...	Com. E. C. Symons..	Liverpool
Asia .....	...	...	Capt. W. C. Chambers	Portsmouth	Eclipse .....	6	350	Capt. H. Harvey.....	N. Amer. and W. Indies
Ariadne ....	26	800	Capt. C. A. Campbell	Part. service	Egmont .....	4	...	Cpt. H. F. W. Ingram	R. de Janeiro
Avon .....	4	120	Com. G. D. Fitzroy...	China	Elk .....	2	120	Capt. A. G. Wotton..	Portsmouth
Barracouta ..	6	300	Com. G. D. Bevan ...	N. Amer. and W. Indies	Endymion ...	21	500	Capt. C. Wake.....	Mediterran.
Basilik .....	6	400	Cpt. W. N. W. Hewett, v. c.	China (o. h.)	Enterprise ...	4	160	Com. G. S. Bosanquet	Mediterran.
Beacon .....	4	120	Com. E. T. Parsons...	S. C. America	Excellent .....	...	...	Capt. A. W. A. Hood	Portsmouth
Bellerophon..	14	1000	Capt. R. J. J. G. MacDonald	Channel sqd.	Favourite ...	10	400	Capt. J. D. McCrea..	N. Amer. and W. Indies
Black Prince	41	1250	Capt. A. C. Gordon...	Greenock	Fisgard .....	42	...	Com. J. M. Jackson	(bearing brd. pendt. of Commodore W. Edmonstone, c. b.)
Bianche .....	6	350	Cpt. J. E. Montgomerie	Australia	Flora .....	42	...	Capt. A. Wilmshurst	Ascension
Boscawen ...	20	...	Com. R. O. Leach ...	Portland	Fly .....	4	120	Com. H. H. Knocker	Devonport
Brilliant .....	16	...	Com. F. M. Prattent	Dundee	Formidable..	26	...	Capt. D. Mc L. McKenzie, Vice-Adm. Sir B. W. Walker, k. c. b.	Sheerness
Brisk .....	16	250	Capt. C. W. Hope ...	Australian Sta. (o. h.)	Fox .....	2	200	Staff-Cm. J. H. Allard	Part. service
Bristol .....	31	600	Capt. F. W. Wilson...	Par. service	Forre .....	29	400	Capt. J. H. I. Alexander, c. b.	East Indies
Britannia ...	8	...	Capt. J. Corbett .....	Dartmouth	Galatea .....	26	800	Capt. H. R. H. the Duke of Edinburgh	Part. service
Rullfinch ...	3	160	Com. E. F. Lodder...	East Indies	Ganges .....	20	...	Com. J. E. M. Wilson	Falmouth
Buzzard.....	6	200	Staff-Cm. J. G. H. Thain	Part. service	Gnat .....	4	120	Com. C. B. Theobald	China
Caledonia ...	30	1000	Capt. A. H. Gardner (bring flag of Vice-Admiral Lord C. Paget, c. b.)	Mediterran.	Greyhound..	5	200	Capt. C. Stirling .....	S. E. C. Amer.
Cambridge...	...	...	Capt. the Hon. F. A. C. Foley.....	Devonport	Hector .....	20	800	Cpt. A. F. R. DeHorsey	Stampton, W. Channel sqd.
Cameleon ...	17	200	Com. W. H. Annesley	Pacific	Helicon .....	20	250	Com. E. Field .....	Portsmouth
Caradoc .....	2	350	Lt.-Com. H. H. A. Court	Mediterran.	Hercules ...	12	1200	Capt. Lord Gilford...	Portsmouth
Castor.....	22	...	Com. C. G. Nelson...	Shields	Hibernia ...	104	...	Com. W. L. Partridge (bearing flag of Rr-Admiral E. G. Fanshawe)	Malta
Challenger...	18	400	Com. C. J. Brownrigg, (bearing brd. pennant of Commo. R. Lambert, c. b.)	Austrln. Sta.	Himalaya ...	2	700	Capt. S. B. Piers.....	Part. service
Chanticleer..	17	200	Com. W. W. S. Bridges	Pacific	Hornet .....	2	120	Com. D. C. Davidson	Portsmouth
Charybdis ...	17	400	Capt. A. Mc. L. Lyons	Pacific	Icaus.....	3	160	Com. Lord T. C. M. D. Scott.....	China
Comorant...	4	200	Com. G. D. Broad ...	China	Implacable..	24	...	Com. P. W. Pellew...	Devonport
Cossack .....	20	250	Capt. J. E. Parish ...	Sheerness	Impregnable	78	...	Capt. W. G. Jones...	Devonport
Cracker .....	4	120	Com. H. Fawkes .....	S. E. C. Amer.	Indus .....	...	...	G. O. Wiles, c. b. (bearing flag of Rr-Ad. the Hon. J. R. Drummond, c. b.)	Devonport
Cruiser .....	5	60	M. Singer .....	Mediterran.	Industry ...	...	80	Stf.-Com. C. J. Polkinghorne .....	Part. service
Cumberland	24	...	Capt. the Hon. A. A. Cochrane, c. b.	Sheerness	Investigator	2	84	Lt.-Com. J. H. O'Brien	W. C. Africa
Dædalus ...	16	...	Com. I. T. M. Nicholl	Bristol	Jackal .....	1	150	Lt.-Com. A. E. Dupuis	W. C. Scottld.
Danä .....	350	...	Capt. Wm. Graham...	W. C. Africa	Jaseur.....	5	80	Com. C. F. Hotham...	W. C. Africa
Daphne .....	4	300	Com. G. L. Sullivan...	E. Indies	Jason .....	17	400	Capt. C. N. Aynesley	N. Amer. and W. Indies
Dart .....	5	800	Cm. Hn. J. Carnegie	N. Amer. and W. Indies	June .....	6	400	Capt. E. Hardinge...	Part. service
Dasher .....	2	100	J. H. Bushnell	Channel Isls.	Lapwing ...	3	160	Com. P. R. Sharpe...	Part. service
Dauntless ...	31	580	Capt. C. C. Forsyth...	The Humber	Lee .....	5	80	Com. C. W. Andrew..	W. C. Africa
Defence .....	18	600	Capt. C. H. May .....	Channel sqd.					
Donegal .....	81	800	Capt. E. W. Turnour...	Birkenhead					
Doris .....	24	800	Capt. H. C. Glynn...	N. Amer. and W. Indies					

Name of Vessel.	No. of Guns.	Horse Power.	Commander's Name.	Station.	Name of Vessel.	No. of Guns.	Horse Power.	Commander's Name.	Station.
Leven .....	2	80		China	Rattlesnake.	19	400	Com. J. G. Meade (bearing brd.pend. of Commod. W. M. Dowle, c.b. ....)	W.C. Africa
Liffey .....	31	600	Capt. J. O. Johnson	N. Amer. and W. In. (o.h.)	Reindeer ...	7	200	Com. E. Nares.....	Pacific
Lion .....	60	400	Capt. G. J. Napier .....	Devonport	Revenge ...	73	800	Cpt. W. J. S. Pullen	Pembroke D
Liverpool ...	35	600	Nav.-Lieut. W. J. Cunningham .....	Devonport	Rinaldo .....	7	200	Com. F. C. B. Robinson	China
Lord Warden	20	1000	Capt. W. R. Rolland	Mediterran.	Ringdove ...	3	160	Com. H. L. Perceval	Pacific
Lynx .....	2	120	Com. J. W. East.....	Devonport	Rodney .....	78	500	Capt. A. C. F. Heneage (bearing the flag of Vice-Adml. Sir H. Keppel, k.c.b. ....)	China
Malacca .....	13	200	Capt. R. B. Oldfield.	Pacific	Rosario .....	11	150	Com. G. Palmer .....	Australia
Manilla .....	70		Ny-Lt. F. A. Johnston	China	Royal Adelaide	26	...	Capt. G. W. Preedy, c.b., (bearing flag of Admiral Sir W. F. Martin, Brt., k.c.b. ....)	Devonport
Medusa .....	312		Stf-Cm. G. B. F. Swain	Part. service	Royal Alfred	18	800	Capt. the Hon. W. C. Carpenter, (bearing flag of Vice-Adml. Sir G. R. Mundy, k.c.b. ....)	N. Amer. and W. In. Sta.
Megara .....	4	350	Staff-Com. J. Loane.	Part. service	Royal George	72	400	Capt. R. Jenkins, c.b.	Kingstown
Mersey .....	36	1000	Capt. R. D. White (bearing the flag of Rear-Admiral F. Warden, c.b.) .....	Queenstown	Royalist.....	11	150	Com. L. F. Jones ...	N. Amer. and W. Indies
Minotaur ...	34	1350	Capt. J. G. Good- enough (brng flag of Vice-Admiral Sir T. M. C. Symonds, k.c.b. ....)	Channelsqd. Pacific (o. h.)	Royal Oak ...	24	800	Capt. H. S. Hilyar, c.b.	Channelsqd.
Mutine .....	17	200	Com. H. M. C. Alexander	Pacific (o. h.)	St. George ...	72	500	Capt. M. S. Nollett.	Portland
Mullett .....	5	80	Com. E. Kelly .....	N. Amer. and W. Indies	St. Vincent... 26	...	...	Com. R. Carter .....	Portsmouth
Myrmidon...	4	200	Com. H. B. Johnstone	W. C. Africa	Salamis .....	25	250	Com. H. M. Millar	China
Nankin .....	50	...	Capt. R. Hall .....	Pembroke	Satellite .....	17	400	Capt. W. H. 'Edye, c.b.	Pacific
Narcissus ...	35	400	Capt. J. C. Wilson (bearing the flag of Rr.-Adml. G. Ram- say, c.b. ....)	S. E. C. Amer.	Scorpion ... 4	350	Capt. G. A. C. Brooker	Portsmouth	
Nassau .....	5	150	Capt. R. C. Mayne, c.b.	S. Magellan	Scout .....	21	400	Capt. J. A. P. Price.	Pacific (o. h.)
Nereus .....	6	...	Staff-Cm. J. P. Dillon	Vasparaiso	Sealark .....	8	...	Lieut. F. G. D. Bedford	Devonport
Niobe .....	4	300	Com. R. G. S. Pasley	N. Amer. and W. Indies	Seringapa- tam .....	...	...	Comd. G. G. Randolph	C. of G. Hope
Northumber- land .....	26	1350	Capt. R. Dew, c.b. ....	Channelsqd.	Serpent .....	4	200	Com. C. J. Bullock...	China (o. h.)
Nymphce ...	4	300	Com. E. S. Meara ...	East Indies	Simoom .....	4	400	Cpt. T. B. Lethbridge	Part. service
Oberon ... 3	260	Lieut.-Com. J. Shorrt	S. E. C. Amer.	China	Sparrow- hawk .....	4	200	Capt. T. P. Coode ...	China
Ocean .....	24	1000	Capt. C. S. S. Stanhope	China	Speedwell ...	5	80	Com. J. P. J. Parry...	W. C. Africa
Octavia .....	35	800	Capt. E. S. R. de Hall (brng. brd.pendant. of Commodore Sir L. G. Heath, k.c.b.)	East Indies	Spiteful ... 6	280	Com. B. L. Lefroy ...	E. Indies	
Pallas .....	6	600	Cpt. E. H. G. Lambert	Channelsqd.	Star .....	4	200	Com. W. S. DeKantzow	East Indies
Pandora .....	5	80	Com. J. Burgess .....	W. C. Africa	Sylva .....	5	150	Com. E. W. Brooker	China Seas
Pearl .....	21	400	Capt. J. F. Ross .....	China	Terrible .....	19	800	Capt. T. P. Coode ...	Part. service
Pembroke ...	25	200	Capt. Hon. J. W. S. Spencer, (bearing flag of Rear-Adml. John W. Tarleton, c.b. ....)	Harwich	Terror..... 16	200	Capt. J. F. B. Wain- wright.....	Bermuda	
Penelope ...	10	600	Captain F. Marten (bearing flag of Rr.- Admiral Alfred P. Ryder .....	N. Amer. and W. Indies	Topaze .....	31	600	Comd. R. A. Powell, c.b.	Pacific
Perseus .....	15	200	Com. C. E. Stevens...	China (or. h.)	Trafalgar ...	60	500	Capt. E. K. Barnard	LoughSwilly
Peterel .....	3	150	Com. Hon. E. G. L. Cochrane .....	C. of G. Hope	Trincomalee	16	...	Com. E. T. Nott.....	Hartlepool
Philomel ...	3	160	Com. J. H. Coxon ...	N. Amer. and W. Indies	Urgent .....	4	400	Capt. S. H. Henderson	Part. service
Phoebe .....	35	500	Capt. J. Bythesa, v.c.	N. Amer. and W. Indies	Valiant .....	24	800	Cpt. J. J. Kennedy, c.b.	The Shannon
Pioneer .....	1	34	Lieut. H. S. Sandys.	W. C. Africa	Vestal .....	4	300	Com. J. E. Hunter...	N. Amer. and W. Indies
Plover .....	3	160	Com. J. A. Poland ...	W. C. Africa	Victoria and Albert ...	...	600	Capt. His Serene Highness the Prince of Leiningen, c.c.b	Portsmouth
President ...	16	...	Com. H. W. Comber	City Canal	Victory .....	12	...	Capt. F. B. P. Seymour c.b. (bearing flag of Adrl. Sir T. Pasley, Bart.) .....	Portsmouth
Princess Charlotte...	12	...	Commod. O. J. Jones	Hong Kong	Virago..... 6	220	Com. H. M. Bingham	Australia	
Prince Consort ...	81	1000	Capt. W. Armitage...	Mediterran.	Warrior .....	32	1250	Capt. H. Boys .....	Channelsqd.
Pyrlades ...	17	350	Cpt. C. W. Buckley, v.c	Pacific	Winchester.. 12	...	Com. G. M. Balfour	Aberdeen	
Racoon .....	22	400	Capt. R. Purvis .....	C. of G. Hope	Zealous .....	20	830	Capt. R. Dawkins (bearing flag of the Rr.-Adml. Hon. G. F. Hastings, c.b.)	Pacific
Rapid .....	11	150	Com. Hon. F. L. Wood	Mediterran.	Zebra .....	7	200	Com. H. A. Trollope...	China
Rattler .....	17	200	Com. H. F. Stephenson	China (lost on Station)					

## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED. (Continued from page 54.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist. in Mls.	Remarks, etc. Bearings Magnetic.]
1. Cette	France S.C.	Break water N.E. end	F.	46	7	Est. 15 January, 1869. Red. See Note No. 1.
	... ..	Frontignan Jetty end	F.	44	7	Est. 15th January, 1869. Red.
Algiers	Algeria	Isle de la Marine	F.	...	...	Est. 30th Dec., 1868. Formerly flashing.
	... ..	At Jetty Heads	...	44	...	Est. 30th Dec., 1868. Red and Green, changed to dioptric.
C. Matifou	... ..	... ..	F.	...	...	Est. 30th December, 1868.
C. Caxine	... ..	... ..	R.	...	...	Est. 30th December, 1868.
2. Hamnskar	Sweden	... ..	...	...	...	} Est. 1st November, 1868. See Note No. 51, p. 393, 1868.
Koon	... ..	... ..	...	...	...	
Hallo	... ..	... ..	...	...	...	
Masknuf	... ..	58° 51' 4" N. 18° 1' 3" E.	F.	...	...	Est. 1st November, 1868. In the Dalaro Channel.
3. Adelaide	S. Australia	See No. 71, p. 614, of 1868	...	...	...	Est. 1st January, 1869. Light discontinued. See Note No. 3.
4. Aigues Mortes	France S. C.	43° 29' 3" N. 4° 8' 9" E.	F.f.	85	14	Est. 1st January, 1869. Removed to Pt. Epignette. Flash every Four minutes.
Poti	Beaconsand	Lights	...	...	...	Inner B. to be red and has a red light, outer to be white and has a white light.
5. Lucretia Point	Cuba: The	Red Rev. Light	...	...	...	Recently erected, temporarily discontinued.
6. Cape Mendocino	California	40° 25' N. 124° 22' W.	Fl.	?	?	Est. 1st December, 1868.
7. River Exe Buoys	See No. 7.	... ..	...	...	...	Alteration of colour. See Note No. 7.
8. Hango Head Road	Gulf of Finland	59° 4' 8" N. 22° 57' 7" E	F.	40	7	Est. 7th Nov., 1868. From 1st Aug. to 1st May, on an iron Pillar on North end of Island Gustafsvard. See Note 8.

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

No. 1.—The breakwater tower is 25 feet high, and that of the jetty 38 feet; they are built of sheet iron, and are painted white.

The position of the breakwater light is in lat. 43° 23' 48" N., long. 3° 42' 25" East from Greenwich.

Also, that from the same date the two lights on Richelieu Citadel will be discontinued.

No. 3.—The tower is erected near the South sand, in 7 feet at low water springs, it is built of iron, is 65 feet high, and is surrounded by piles, on which the keeper's dwelling is placed.

The navigable channel for large vessels is 70 yards to the northward of the lighthouse, in which at the present time there is a depth of 13 feet at low water springs, the spring rise being 8 feet.

The pilots now board ships from the jetty.

*Directions.*—Having cleared Troubridge shoals and being in a fair berth for the gulf, endeavour to make the lighthouse on a bearing from N.N.E. to N.E., and avoiding bringing it to the northward of N. by E. in order to avoid the Wonga shoal, to the southward of the jetty.

*Anchorage.*—The most convenient anchorage will be found with the lighthouse bearing N. by E. to N.N.E., and the red light on the jetty from E. by S. to E.S.E. in 5 fathoms, sand.

[*All Bearings are Magnetic. Variation  $5\frac{1}{2}^{\circ}$  Easterly in 1869.*]

No. 7.—The white buoys on the port side will be coloured *black and white in vertical stripes*:

The red Fairway buoy will be changed to *black and white in horizontal bands*.

No. 8.—Showing *red* from the entrance of the roads, or when bearing from N.N.W.  $\frac{3}{4}$  W. round by West and South to S. by E.  $\frac{3}{4}$  E., and *white* towards the anchorage from S. by E.  $\frac{3}{4}$  E. to E. by S.  $\frac{3}{4}$  S.

*Directions.*—Vessels entering Hangö road should keep within the limits of the red light and anchor when in sight of the white light.

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#### ROYAL NATIONAL LIFE-BOAT INSTITUTION.

A MEETING of this institution was held on the 7th of January in John-street, Adelphi; Thomas Chapman, Esq., F.R.S., V.P., in the chair. The second service clasp of the institution and £5 were voted to Thomas Carbis, coxswain of the Penzance life-boat; the second service clasp to Mr. Samuel Higgs, jun.; the silver medal to Commander Robert B. Cay, R.N., and Mr. William Blackmore, chief officer of coast-guard; the silver medal and £2 to W. Highans, second coxswain and coast-guardman, and a reward of £5 each to A. Pascoe and Edward Hodge, in addition to £4 4s. to the rest of the crew of the life-boat, for their daring and persevering exertions in saving eight men from the barque *North Britain*, of Southampton, wrecked during a heavy gale in Mount's bay, on Sunday, the 6th ult. Mr. N. B. Downing, the hon. secretary of the branch, Captain Holbrook, Mr. Geo. Desreaux, and Mr. W. Jeffery were also specially thanked for their important services on the occasion in question, £1 being also granted to the last named person. The second and third service clasps of the institution and £5 were also voted to coxswain Joseph Cox; the silver medal and £4 to J. Cox, jun., second coxswain; the silver medal and £2 to John Kelly;



and £37 10s. to the remainder of the crew of the Appledore life-boat, in acknowledgment of their very brave and persevering efforts in rescuing nine men from the Austrian barque *Pace*, of Fiume, which was wrecked on Bideford-bar during a fearful storm on 28th December. A sum of £20 was voted in aid of the subscription now raising on behalf of the widow of David Johns, coastguardman, who perished whilst assisting with the rocket apparatus of the Board of Trade to save the crew of the barque *Leopard*, of London, wrecked near Appledore. Johns had previously gone off with Cox in the life-boat to save the crew of the Austrian barque, and was always ready to save life whenever his services were needed by the life-boat.

Rewards, amounting to £243 13s., were voted to the crews of the various life-boats for saving the crews of the following wrecked vessels:—Austrian barque *Mea*, seventeen men, by the Tramore life-boat; barque *William Gillies*, of Greenock, fifteen men, by the Campbeltown life-boat; schooner *Vision*, of Drogheda, five men, by the Castletown life-boat; ship *Castilian*, of London, eighteen men, by the Portmadoc life-boat; brigantine *Ino*, of West Hartlepool, five, and fishing lugger *Ranger*, of Yarmouth, eleven men, by the Yarmouth surf life-boat; schooner *Atlanta*, of Kukwall, eleven men, by the Hasborough life-boat; schooner *Prudence*, of Aberystwith, four men, and brigantine *Jane*, of Workington, four men, by the Ramsay life-boat; lugger *Augustine*, of Port L'Abbé, and crew of four men, assisted by Poole life-boat; boat of the schooner *Pioneer*, of Exeter, four men, brig *Bilboa*, of Seaham, six men, and brigantine *Elizabeth*, of Blyth, eight men, by the Caistor life-boat; brig *Fuschia*, of Whitby, three men, by the Aldborough life-boat; smack *Castle*, of Aberystwith, nine men, by Aberystwith life-boat; brig *Belle*, of Sunderland, nine men, by Thorpe life-boat; brig *Flying Cloud*, of Bideford, ten men, by Plymouth life-boat; and trawler *Start*, of Brixham, four men, by Teignmouth life-boat. The life-boats at Great Yarmouth, Margate, Looe, Holy Island, Worthing, and Ramsgate, had also recently rendered the following services:—Lugger *Ranger*, of Yarmouth, vessel saved; barque *Fieremosca*, of Genoa, saved vessel and crew of thirteen men; dandy *Lay Jeune Fanny*, of St. Malo, vessel and crew, five; schooner *Mail*, of Alloa, vessel and crew, six; fishing coble, of Yarrow, vessel and crew, two; brigantine *Hitena*, of St. John's Newfoundland, vessel and crew, six; schooner *Gaspard*, of St. Malo, master rescued; making a total of 198 lives and seven vessels saved by the life-boats of the institution during the recent storms.

Rewards amounting to £250 were voted to the crews of various life-boats for putting off with the view of rendering assistance to the crews of vessels in distress. The institution likewise granted £50 in aid of a local subscription for the widow of a poor man who unfortunately lost his life on the occasion of the last quarterly exercise of the Ballywalter life-boat. Mr. Thomas Brooks, the artist, had made to the institution a unique present of a portrait of Mr. Lewis, the well-known secretary of the society. The painting is considered a fine work of art, and the committee expressed their high appreciation of Mr. Brooks's

munificent gift, which enabled them to confer on their secretary an additional mark of great honour and distinction.

A legacy of £500 had been received by the institution from the executors of the late Mr. William Naylor, of Twickenham. Also £50, being the amount of the legacy to the society of the late Miss Maria Rawson, of Sheffield. It was reported that the late Mr. Francis House Kingston, of Harpenden, had left the institution £500 stock; and that the late Mr. Jacob Gorfenkle, of Liverpool, had bequeathed it £500 for the purchase of a life-boat, to be named the Gorfenkle.

Payments amounting to nearly £2000 were ordered to be made on various life-boat establishments. The institution decided, on the invitation of the local residents, to take the Montrose life-boat establishment into connection with it. New life-boats were about to be sent to Weymouth, Lynmouth, and to the pilot ship off Llanelly. The life-boat which the institution had sent to Kimmeridge, Dorset, last month, had been taken out on trial, and had given much satisfaction to the crew. The meeting expressed its thanks to Mr. E. Duncan, the artist, for a vignette drawing of the life-boat of the institution for its official paper. It was reported that the members of the Coal Exchange were raising a subscription for a life-boat to be presented to the society. A cordial vote of thanks was passed to Mr. Thomas Chapman, F.R.S., and Sir Edward Perrott, Bart., for their able conduct in the chair at the meetings of the institution during the past year.

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#### NOTES OF NOVELTIES.

ALTHOUGH it is not usual with us from want of space to register the departures from the list of naval officers, the loss of the Admiral of the Fleet, and the Governor of Greenwich Hospital would always claim attention. It is stated that Admiral Sir Lucius Curtis, Bart., K.C.B., expired on the 14th January, at the age of 83, and Admiral Sir James Alexander Gordon, G.C.B., on the 8th of January, at the age of 86, having held the appointment of Governor of Greenwich Hospital since 1840.

WE regret to learn that accounts of H.M.S. *Gnat* having been blown up by lightning in a river of the island of Borneo, seemed to have been confirmed as true. Particulars however are not yet known, and whether she was provided with Harris's conductors or not, becomes a question of considerable interest. If such should prove to be true, we cannot but imagine that they must have been in an inefficient condition, or why was she not as safe as the *Ocean* recorded in our last number.

ELECTRIC LIGHTING OF COASTS.—A new addition is about to be made to the electric lights on the coasts of France. The Lighthouse Board of that country notifies that from the 15th February next the Lighthouse of Cape Grisnez, near Calais, will display an electric light. It will be eclipsed every thirty seconds, but will be of much greater intensity than the ordinary lights. During the eclipses a fixed light of as great power will be seen, so as to prevent navigators near the

coast from losing sight of the lighthouse. We preserve the foregoing as interesting to our readers, not that we expect to see the electric light superseding the oil light used in our lighthouses, as it has already been shown to be both too expensive as well as unnecessary from the present light being distinctly visible, as far as the curvature of the earth will admit of its being seen.

**THE FUTURE OF GREENWICH HOSPITAL.**—It has been anticipated as the conclusion, that it is not the intention of the government to fill up the vacancy occasioned in the governorship of this institution, for so long a period held by the late Sir James Alexander Gordon, who was in receipt of £3,000 a year from the hospital fund. On Tuesday last, Mr. Trevelyan, of the Admiralty, accompanied by his secretary, paid a lengthened visit to the hospital, inspecting minutely the whole building, with a view, it is said, of the same being occupied for military purposes, it being the intention, in October next, to remove the infirm pensioners to the hospital at Netley.

And further in the way of economical reductions :—A circular materially affecting the position of the clerks in her Majesty's dock-yards has been received at the Devonport establishment. It states that no new appointments to clerkships or promotions of clerks in the civil departments under the Admiralty will be made until it has been considered whether the services of clerks who are on the redundant list, or who may be discharged in consequence of the reductions which it is found necessary to make, cannot be made available. Some of these reductions have, we learn, been made in the controller's office, where one second class and five third class clerks indiscriminately selected from the list have received notice that their services will no longer be required. Some of these are entitled to a pension; the remainder it is understood will receive a gratuity of a month's salary for every year they may have served.

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CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in January, 1869.—Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill. London.

535  $\frac{DE}{2}m = 0.5$  Brazil. San Marcos or Maranham Bay, Captain Mouchez, 1867. 1s.

229  $DEm = 3.55$  United States, Pinos point to Bodega head, with views United States' Survey, 1866. 2s. 6d.

935  $\frac{DE}{2}m =$  various Java Sea Harbours and anchorages between Baly and Timor. Dutch Surveys, 1867. 1s. 6d.

29  $\frac{DE}{2}m = 7.0$  Pacific Ocean. Ahuric Bay, Oparo Island, Lieutenant Quentin, F.I.N., 1867. 1s.

African Pilot, part 2, from Cameroon River to Cape Good Hope, by Staff Commander G. F. McDougall, R.N., 1868. 4s. 6d.

EDWARD DUNSTERVILLE, *Commander, R.N.*  
Hydrographic Office, Admiralty, 20th January, 1869.

THE  
NAUTICAL MAGAZINE

AND

NAVAL CHRONICLE.

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MARCH, 1869.

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A VISIT TO THE FISHING GROUNDS OF LABRADOR by *H.M.S. Gannet*, in the Autumn of 1867, *W. Chimmo*, Commander.

THE principal object of the *Gannet's* voyage to the ill-known coast of Labrador was a search for new fishing grounds, as well as to look for harbours generally for the craft of our Newfoundland fishery; a falling off having been observed in cod fishing, and their food (herring and capelin), so as to have become insufficient to remunerate the fishermen or even to enable them to realize a fair cargo. And the Chamber of Commerce of Newfoundland having urged the Governor to represent to the Home Government the benefit that would arise from a nautical survey being made of Labrador, the advantage it would be to the community in the prosecution of the fisheries (being a service not within the power of the local authorities to accomplish), also that such friendly action on the part of H.M. Government would create a cordiality of feeling among the mercantile community, tending to produce good effects in dealing with fishery questions.

The Secretary of State was therefore induced to request the Admiralty to send a vessel of war to the Labrador coast, in the season of 1867, with the above object, and directions were accordingly sent to the Naval Commander-in-Chief on that station; still as an elaborate survey of a coast of 500 miles in extent was unnecessary, as it was the duty of the fishermen to seek for their own grounds, it was decided that the *Gannet* should proceed to carry out this duty in the manner they purposed, and accordingly the *Gannet* having refitted and prepared for this voyage, finally left Halifax on the 31st of July for the performance of this duty.

The morning of departure from Halifax was in point of weather all that could be desired. Her instructions were to fill up coal at Sydney, and then proceed to Indian Harbour, Esquimaux Islands, where she

was to meet the *Alice Jane*, a vessel which had been sent on with another supply of coal for her (200 tons) as a kind of provision against risking the safety of the *Gannet*. And thus having received permission to part company, she steamed out of Halifax harbour, passing the *Niobe* from England as she was running in, a sister ship to the unfortunate *Amazon* which was considered a *ram*, but was unable herself to withstand the stem of another steamer that was no *ram*! We had a high barometer after all the southern gales of the last few days, with their heavy rains and fogs; and besides the moon was new, and our anticipations of fine weather of course ran high.

Considering that Newfoundland does not abound in Labrador pilots (and it would not be easy to find a place that does so), the idea of visiting St. John's was abandoned. They are all St. Lawrence pilots there, and for the gulf only (to Cape Charles), for who ever cared for Labrador. Besides this the *Gannet* making for Sydney at once would be a saving of nearly 300 miles.

We found a heavy swell on the Nova Scotia coast, and what was better than that, was that the small rock (small one to be sure) on the chart, about twenty miles E.S.E. of Devil Island Light of Halifax, had no existence, a bugbear only.

On the next afternoon we ran into Sydney harbour, much to the disappointment of several pilot boats which offered their services by holding up a flag. But a clean harbour and a good plan of it placed them at a disadvantage.

On the north-east side of Cape Breton island a considerable town has sprung up. Next to this and the church spires that ornamented Sydney, several wrecks were lying high and dry, betraying the want of real shelter even here. One ill-fated vessel lay on the beach in Schooner cove; another in Indian Bay, with loss of two masts. But at Bridgeport, another name for Sydney, we found a number of vessels loading with coal, and there were evident signs of the mines being well at work, giving busy employment to hundreds of persons.

On our arrival in this harbour about three in the afternoon, we found our friend the *Alice Jane* running in at the same time as ourselves. But she should have been on the Labrador coast by this time. However a thick fog and calms for several days amply accounted for her slowness, added of course to some dull sailing which contributed to make her later still. Our first object here was to fill up with coal, and soon we were under the coal shoots, not only to complete the fuel, but to benefit by the black dust produced by the operation. This was but neighbour's fare. So leaving the officers of the ship to their duties my next object was to take a look at Sydney.

It would not only exceed the limits of the journal which had appeared to me reasonable to keep, but would far surpass the time to be devoted to it, to give a full account of this place, and it will be sufficient to describe the result of a single glance. A walk from the landing introduces to the stranger the Victoria, the Prince of Wales, the New Dominion, the Cape Breton, all hotels of a very good order ready for his immediate reception; and all with inviting signs over their

doors; and should he be inclined for a temporary stay there is an ample collection of boarding houses equally at his service. A post office will also claim his attention, being, besides a kind of receiving house for dilapidated parasols, the duties of both departments being looked to by a very obliging and attentive Scotchman who had the gift of a loquacious tongue. The latter articles were certainly rather out of my way, but not so the former, and the sole object of the man of letters in his pressing civilities appeared to be to have the satisfaction of displaying the various postage stamps of the island; stamps which he declared to be the most beautiful in the world! What an opportunity for a collector of these gems to add to his store those of such a small out of the way place as Sydney of Cape Breton Island. At all events they would contrast well with all the rest of the Sydneys, north, south, east, and west of the British Colonial Empire; or indeed of any other. But these bore evidence, which was confirmed by appearances, that thanks to what have been termed her black diamonds, Sydney of Cape Breton is making rapid progress towards a large city. Coal is cheap, and long may it be so; not more than ten shillings a ton, and of course Sydney thrives on it.

The nautical eye would soon detect a patent slip capable of receiving a vessel of 800 tons, besides two others for smaller craft, all of which have abundance of occupation. The harbour is capable of much improvement, and not only so, but worthy of it. The authorities should see to this for they have at their own command an inexhaustible revenue from the produce of their coal mines. Why, for instance, is the red buoy off the Land Spit (so essential for rounding that danger) allowed to be absent? Why is not the coal pier made more easily approachable than it is, by some few warping buoys being laid down?

The supplies of stock which Sydney affords are excellent, and cheap, besides her invaluable coal mines. The above wants in the harbour ought to be supplied, besides several more improvements which would suggest themselves to authorities ready to supply them. However it is to be hoped that these observations will be taken by the people there in good part, and that their beautiful harbour will profit by them to their own advantage.

Our Sydney wants being all supplied, and our time precious, the *Gannet* spread her wings to the fine fair S.E. breeze and shaped her course for the little isle St. Paul, at the entrance of the gulf. Besides we were anxious to have a look at it, but passing at early morn a provoking fog obscured it from us just as we had made out the light, and soon concealed all from our inquisitive eyes. There was no help for it, our brisk S.E. wind was just what we wanted (without its mists) so having got up abreast of Cape Anguille, the western extreme of Newfoundland, although we could scarcely see one end of the ship from the other, on we stood for Cape St. George.

Having got a cast of the deep sea lead, and being satisfied we were at a proper distance from the land, yet to be more secure, shaped a course for a still more respectful distance, for a rate of ten or eleven knots. Thus we stood on under some anxiety, but consoled ourselves

that we were out of the ordinary track of vessels for the gulf of St. Lawrence, and too far out for fishing boats.

However, at daylight on the 3rd of August the high land about Portland creek was visible bearing E.S.E. about fifteen miles; patches of snow also on the mountains, a kind of promise of more hereafter, and we hauled in for the Newfoundland shore in spite of its dark and gloomy aspect.

All had gone well hitherto, but in the course of this morning the sudden alarm of fire placed us on the *qui vive*, and the fire-bell soon repeated the signal. Sail was at once reduced, and the vessel's way stopped. A few minutes checked the mischief, occasioned by some mats at the back of the boilers along with some sweepings from the flues having become ignited. Happily this was all the danger that threatened the destruction of our little wandering sea-bird of a *Gannet*, and she resumed her former course. Meanwhile the barometer took a sudden drop of 0.3 inch, the wind as suddenly shifted to N.E., and torrents of rain followed, sufficient to extinguish any fire without other aid. This was against us; so sails were furled, and we kept the vessel on for what we took to be Rich Point. Soon afterwards the barometer rose again as suddenly as it had fallen, and the wind came with a sudden gust from N.W. and north, clearing up the weather and giving us a bright sun. This enabled us to see St. John's Island and its harbour, which we should have entered, but prudence with an on shore wind suggested keeping outside under trysails for the night.\*

In the course of the evening the Aurora burst forth in great splendour forming an arch extending from N.E. to N.W., lighting the etherial vault above us so thoroughly that we had but very little darkness during the whole night. But about ten p.m. the gale had moderated so much that our engines were turned on at half speed, and we steered for Amour light, which we passed at four in the morning. The morning itself was bright and calm—small icebergs moving along shore, some resting aground having the appearance of small vessels of very white sail. As we passed on under steam we observed Forteau Bay, also Black Bay, and Anse au Loup off the Labrador coast, all crowded with small fishing craft. Off Wreck Bay we found ourselves first in company with icebergs of all fantastic shapes. The first seen was eighty feet high, perfectly white, with a beautiful streak of ultra marine colour, and some here and there were aground, giving an opportunity for whales, ducks, arctic puffins, and families of divers to play about them.

Passing Chateau Bay about ten in the forenoon several vessels were seen with colours flying and some bergs afloat off it. Between this place and Belle Isle was a fleet of small vessels, and among them a steam vessel curiously distorted by mirage as she stood to S.W. Here we had some bergs towering far above our mastheads. Among these

\* We subsequently learnt that the gale of this date was felt throughout Nova Scotia, and was especially severe at Halifax. Some of the vessels lying secured to the dockyard tore out their bits. At Sydney too, the place we had just left, great damage was done to the shipping and wharves.

we also had opportunities of witnessing the splitting and falling of these huge travellers of the deep. Although the ice of Bhering Strait had been familiar to us, no ice in that part can compare with the magnificence of these bergs. All there is flat, called field or pancake ice, but here it is the lofty towering berg, the splitting of which is attended with a report like the discharge of cannon, and its fall on the sea surface a magnificent sight. Being off Chateau Bay it may be interesting to remark that the name is obtained from the resemblance of the headland to an old castle, with its turrets, arched ways, and loopholes, curiously represented by a series of basaltic columns, presenting altogether a scene as attractive as that of Fingal's cave, or the celebrated Giant's causeway.

Off St. Peter's Island we had a cast of the lead, of ten fathoms, obliging us to haul out, and here again we had an opportunity of shewing our diminutive size compared with a huge berg standing still with its fantastic form, the summit rising to 180 feet above the surface of the water. At its base were two small ones like hay stacks, birds of course making free with them. One of the effects generally found when to leeward of these bergs was a fall in the thermometer, bringing it within two or three degrees of the freezing point, and making us almost shiver with cold. The danger occasioned to navigation by these bergs in the Strait of Belle Isle was evident to us day by day. In the darkness of night, or in a fog, a vessel striking one of them, whether it were fixed aground or drifting with the current would most likely prove fatal to her, and certainly no safe landing for her crew could be expected. A rock might afford safety if it had surface above water, but not so an iceberg. In the midst of our examination of the icebergs, our attention was attracted by a very remarkable halo round the sun  $46^{\circ}$  in diameter, from which it was inferred that fog or rain was not very distant.

Our passage through the Strait of Belle Isle is worthy of note having been effected this afternoon of the 4th of August, and after rounding the Battle Islands, and threading our way through a collection of bergs we entered St. Lewis inlet, bidding adieu to the last lighthouse (of Belle Isle) we should see for some time, as such marks of civilization do not extend to coasts that cannot claim such superiority and may be considered as barbarous. With some difficulty we succeeded in getting into Fox Harbour in the interior of the inlet, for an iceberg had grounded at the very entrance of it, obliging us to go into three fathoms to enter, so that we narrowly escaped getting aground. Here we expected to have found hundreds of vessels, instead of which we found not one at this our first anchorage on the eastern coast of Labrador.

This said harbour of Fox is about capable of holding three or four vessels, and it appears that not more than three or four families occupy its strand throughout the year. Salmon fishing affords them the means of living obtained in the western arm, the produce being sent to Battle Harbour as soon as the fish is cured. This same place called Battle seems by the information obtained here to be the most important of



the two, and a place from which all information concerning the fishery of Labrador is to be had.

No sooner had we dropped our anchor than the prognostications of what that halo would bring were realized. Rain fell in torrents, and our safety at anchor was a source of congratulation after the four days of toil and anxiety we had undergone since leaving Sydney. And considering the numerous dangers of this ill-known coast as well as the changeable weather we had experienced, which had been promised to us by the ever unsettled state of the barometer, it was considered that we had good reason for our self-gratulation.

On the following morning, 5th of August, under the effects of a brisk N.W. breeze, we found the ice breaking up. The berg which had been aground at the entrance had shifted its position and worked itself into eight fathoms of water. On sounding in the loose ice, we found there were three to eight fathoms. Report says that the ice of this season has much injured the salmon nets, reducing the quantity taken very considerably.

St. Lewis' Sound, like most other parts of this coast is little known to the charts. A fine convenient anchorage, no doubt, in which a few soundings by way of examination were very much wanted. We therefore got up our anchor and commenced an overhaul, but in running to an anchorage of eleven fathoms, a cast of three fathoms off a point of which there was nothing in the chart, made us back off at the risk of grounding, and as we could not get deeper water than twelve fathoms, it was considered advisable, as the agent of Messrs. Slade and Co. was at hand, to lie by for his arrival. We, therefore, backed out, and soon welcomed this gentleman, Mr. Bendle, on board the *Gannet*. His information was of a nature by no means encouraging as to the fishery. By his account the fishing vessels were all at Webeck, near Cape Harrison, and, in the parlance of the people, "Doing what they liked with the fish." Their salt was all expended, or, as their term expressed this, "it was wet," and vessels were turning up hourly (*i.e.*, coming loaded) from the northward."

The object we had in view being to acquire all the information to be had on subjects concerning the fishery, Mr. Bendle, at my request, summoned two of the most experienced fishermen, with an Esquimaux from Indian island, and the result of our deliberations may be briefly expressed. It appeared that fish were as plentiful as ever, as much in fact as could be reasonably desired, but that all the fishing was what was called shore-fishing,—of bank-fishing there was none. The fishermen knew the grounds very well, and the harbours likewise; but vessels could not be induced to bring cargoes to the south. Lloyd's were too much alive to the dangers of the navigation to insure them; the only remedy for which were good charts of the coast, as well as the harbours that would enable vessels to come there.

All this was perfectly reasonable, but showed too clearly the neglected condition in which this invaluable fishery has been allowed to continue, —while for the sake of vessels visiting other places more in their track, but of far less importance, our charts of those places are comparatively

magnificent. For instance, the N.W. Coast of America. But one inevitable consequence of no charts is that of no pilots, and we were told not to expect any at Battle Harbour; for Occasional Harbour, perhaps, out of respect for its name, we might get one.

Being under way, on visiting the first of these places we found a largish population of about 300 persons employed in the fishery; but all complained of having only half cargoes; the fish were said to be idle and lazy, as they termed them, arising, it was said, from the ice being too thick.

As we lay outside, half becalmed, the water scarcely rippled, with various bergs detached in different directions about us, an opportunity was given to the crew to exercise their gunnery. Our Armstrongs, the hundred pounder, were brought to bear on an isolated berg, standing about seventy feet above the surface. It was interesting to us to see the effect of our shot in reducing the size of this mass, but far more so to contemplate the little harbours formed by Alexis and Gilbert rivers close by. But, in the midst of our work, the appearance of approaching fog threatened us from seaward, and all the power we possessed of steam and sail was soon urging our little craft towards an anchorage. However, the land wind favored us and kept the fog to seaward at a respectable distance.

Again we had a capital opportunity of witnessing the effect of mirage. The distortions of points, especially about Occasional Harbour, were so complete that they became islands, in fact, entirely altered in every possible way, so as to be absolutely no longer recognizable. However, after no small difficulty on this account, we did find our way into this Occasional Harbour, our least water being fifty fathoms. Here we found an abundance of fishing craft, the shore everywhere dotted with huts and fish stages, on which were seen the fish in all the various conditions of curing and drying. In our way we had the satisfaction of lighting on a seven fathoms bank, tolerably close to the S.W. side of this harbour, on which bank capelin were plentiful. As for the cod, the ice was said by the fishermen to be so plentiful that the water was chilled by it, and the fish rendered thereby too lazy and indolent to care about bait. They seemed, in fact, to be in a half-torpid state, and could be easily seen at the bottom in thousands, a perfect mass, being easily jigged with a hook without bait, for which they seemed not to care in the least.

The capelin, above alluded to, is a small fish about the size of a smelt, and is peculiar to the coasts of Labrador and Newfoundland, which it visits in the months of August and September with the intention, no doubt, of spawning on the beaches. They have been known to be so numerous as to have darkened the sea water over an area many miles across, while their enemies, the cod, give them a hearty reception, swallowing them without mercy, and, in fact, feeding on them with the utmost voracity. Verily, Nature is a very provident mistress in providing food for her creatures, in variety, too, for these unhappy little fish resort to them to be devoured as naturally as if they were quite aware why they should come to these shores. But there are

some circumstances attending them that are interesting to note, and will be worthy of a line or two.

The male fish is not generally so large as the female, and is provided with a kind of ridge extending along on each side of the backbone, not unlike the eaves of a house, and is a provision not found in the female. The latter on approaching the beach to deposit her spawn is attended by two male fishes, who huddle the female between them until her whole body is concealed under their projecting ridges abovementioned and her head only is visible. In these relative positions, the three fish run together with great swiftness on the sand, when the males, by some inherent power, compress the body of the female between their own so as to expel the spawn. The three capelin afterwards separate, and with all their power make their way through the surf, and gain once more the deep sea.

Thus, the common sandy beach of the sea shore appears to be one of the most useful receptacles for the generation of several tribes that inhabit the ocean. We have seen here the use of it made by the little capelin. The turtle deposits her eggs on it unobserved, either in the stillness of night or early morn, carefully covering them over with a light brush of sand, leaving them for the sun's heat to hatch in due time, when the young turtle takes to the depths in which its mother delights. Again, the alligator does the same, its long projecting tail serving remarkably well to effect the object of concealment by brushing the sand over them. Well we remember finding a large collection of these eggs on the Californian shore of the Pacific, when the sand containing them, eggs and all, crunched under every step we took just above the edge of the surf. And let the naturalist state the various species of zoophytes that find a refuge in the sand against their powerful enemies of creation, and they would be too numerous to name; certainly they are better cared for by nature than the poor little capelin, or even the well-known flying fish, in evading its ruthless pursuers, the dolphin and others, among the larger of the finny tribe.

*(To be continued.)*

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## THE BANE WITHOUT ITS ANTIDOTE.

*(Concluded from page 92.)*

LET US now bring these remarks on the use of the weed to a conclusion. We have shown in the foregoing papers little or nothing in its favour. Indeed if we have seen it recommended in certain cases by the faculty, approved indeed! what is most likely to follow that approval? The answer is plainly the acquirement of the habit of using it, too easily learnt, but far from easily thrown aside. But we need not summarise the evidence in reference to the use of it; for it is all on one side,—the weed is in fact condemned; shall we say by the wise. There are those whom we would wish had never adopted

it;—and we are not singular in that wish, when the same from them has been expressed to ourselves. But we will proceed with our final and concluding remarks.

Before we commence these remarks, we must premise that they are in no way framed in furtherance of the views of any Society on the subject that may be ranged either for or against the use of the weed. We have no kind of object in view, but to place before our reader, be he smoker or non-smoker, the effects which like all others, a novice must expect to encounter in acquiring the habit. We have heard of an Anti-tobacco Society: but we know nothing of its publications. We have quoted authorities where we have found them, and if our quotations of first rate opinions have gone in the main against the use of the weed (as we believe they have), we are not answerable for that. The *Lancet*, one of the authorities to which we have alluded, does not seem to take that decided stand against the weed that we should have expected from such an authority. It is lukewarm either way, apparently afraid to praise and yet afraid to condemn. And yet it deprecates the extreme use of it, while it cannot see that that extreme is so easy to fall into from using it at all. This very fact of the habit being one that is so likely to gain, has always formed a sufficient reason for one of our main objections. We are for avoiding temptation altogether, and not for a struggle afterwards between habit and principle, a condition to which the use of it is always approaching. The *Lancet* says, "We must set aside the cases of excessive smoking, and those exceptional cases, in which tobacco acts as a poison in any quantity." This is a kind of argument to which we by no means assent. Such cases form a part (in our opinion) and a very important part of the whole subject, telling much against the patronage of the weed; and then the *Lancet* confirms what we have advanced by adding, "No doubt tobacco has a great deal to answer for, because smoking, like other tastes, and *more than most, so readily runs into excess*. Its worst effects are observable in persons below puberty, in whom it induces a peculiar kind of sullenness, functional palpitation, diminished appetite, and an inaptitude for physical or mental energy, to say nothing of the expense attending it. It is liable to induce a similar train of symptoms in those who contract a habit of smoking only a little, and but a little in excess. We are told that among young soldiers palpitation and deranged action of the heart are common enough from its use. A medical officer noticing the frequency of muscular tremor and unsteadiness of hand among soldiers, kept some statistics, in order to ascertain whether there was any great difference between these and the non-smokers, as regards rifle practice. He was however unable to prove statistically, that the latter enjoyed any superiority of accurate shooting power." This may be quite true as far as this gentleman's statistics went. But we have certainly met somewhere with the contrary report as extending to the army generally. Tobacco, it is said, among the poorer classes, certainly appears to exert considerable power in restraining the appetite." No doubt it does, but in our turn we may ask does it ever restore it, after restraining it, or does it even

improve it? It was one of the very first observations of the Indians of Cuba, from whom it came, that a man can bear a larger amount of fatigue in a given time with a small amount of food, and a pipe, than with the same amount of labour without his baccy : and yet to this is added, of course he could only maintain this within certain limits.

After all it is added, the physiological effect of very moderate smoking has not yet been defined, and the mental state like the flavour of the weed itself, is incapable of being expressed in words. We have been lately told by a French journalist, M. Emile de Girardin, in a vein of sober earnestness, that the acts and policy of the Emperor are the outcourse of his habit of smoking. To smoke is to "dream wide awake," it is said, which dreaming should have been added arises from the brain being muddled, and rendered hardly capable of exercising rationality in clearly considering what enters it—or of treating sentiments with the gravity which should belong to them. They say that there is a tendency among modern French critics to seek in physical causes an explanation of some of the more abstruse moral and social problems of past and present times. The reason is no doubt that it gives scope to the play of a writer's fancy to couple mental and moral peculiarities with physical causes, and it affords an opportunity for clever, interesting, and ingenious speculations in depicting character. To this observation we may simply enquire, would not an active imagination supply the same ideas stripped of any of that unlikeliness which the smoker naturally invests them with, or in other words would they not be more likely to be couched in the terms of reason and probability than mystified with the haze of vagueness and indefiniteness of purpose? It dwarfs the intellect, says a great American physician. A man may think like a prince, but what use in that if his ideas are hazy?

It is not very long ago that the British Association encouraged the late Dr. Richardson to go into this important subject, and a paper was read by the doctor in 1864, of which we preserved an outline in these pages. And as we have been throwing together all that we can find relating to it that is worthy of attention, we shall transcribe it. The doctor was evidently above all prejudice against it, and the reader will find that although he by no means recommends the use of tobacco, that really is the subject of his paper, he does not by any means stigmatize it as the worst of luxuries. However the paper runs thus :—After describing the various elementary compounds of tobacco, he mentioned the different diseases to which excessive smoking gave rise. He said, it deranges the digestion, causes thirst and nausea, palpitation of the heart, and impairs both vision and hearing, besides rendering the muscles flaccid, and often producing sore throat. Like other doctors, he declares tobacco to be especially injurious to youths, who are still growing ; and he says, there is no doubt that if a race of children were raised from parents of whom both smoked, there would be a marked deterioration in the offspring as compared with the children of non-smokers. Put down the smokers of Great Britain he says, as a million in number (they are more than that, but let it pass),

why should there exist perpetually a million of men, not one of whom can at any moment be noted down as in perfect health from day to day? Why should a million of men be living with stomachs that only partially digest, hearts that labour unnaturally, and blood that is not fully oxydized! In a purely philosophical point of view, the question admits of but one answer, viz., that the existence of such a million of imperfectly working living organisms would be a natural curiosity, a picture which to a superior intelligence, observing the whole, and grasping it, would suggest as a mania foolish, ridiculous, and incomprehensible! Now there is no mistaking this, and the most considerate manner in which we can dismiss this part of the subject is to set smoking tobacco down as followed by its advocates being afflicted with a mania.

But the doctor is considerate as well as severe. Smoking to excess no doubt is a mania. Such an authority is quite sufficient, but he considerately adds, "I cannot say more against tobacco however, without being led into a wider question,—I mean the use of luxuries altogether. On this question if I were equally fair for tobacco as against it, I should be forced to give it a place as one of the least hurtful of luxuries." Let the advocate rejoice at such favourable testimony as this; for as he says, it is on this ground that tobacco holds so firm a position, that of nearly every luxury it is the least injurious. It is innocuous, he says, as compared with alcohol, it does infinitely less harm than opium, it is in no sense worse than tea! and by the side of high living altogether contrasts most favourably. A thorough smoker may or may not be a hard drinker; but there is one thing he never is, and that is a glutton! Indeed, there is no cure for gluttony and all its train of certain evils, as there is for tobacco. In England this cure has been effected by wholesale. The advocates of tobacco may add to these remarks that their friendly weed is not only the least hurtful of luxuries but the most reasonable! They will tell of the quiet which it brings to the overworn body, and to the irritable and restless mind. Their error is transparent and universal; but universal error is practical truth. For in their acceptance tobacco is a remedy for evils that lie deeper than its own, and as a remedy it will hold its place until those are removed. So says Dr. Richardson. Still he blows hot and cold with the same mouth, and allowing him to be a great authority, we will quote a picture here for an example which Dr. Richardson we are quite sure never intended should be imitated.

A paper in the *Magazine of Domestic Economy* (from which we have already quoted) agrees in the general opinion as to the effects of smoking tobacco on the throat and stomach, producing as it says, a distressing thirst which nothing but stimulants will allay with satisfaction to the drinker. It may therefore be considered as leading to the adoption of ardent spirits, as well as potent vinous liquids. But unfortunately its commands are more imperious, more irresistible than the mere resort to these. It converts into a drunkard one who has no other incentive to drink than that which the tobacco gives him; and here is a case to the point. He says:—A very dear and highly gifted

friend of ours has lately taken to cigar smoking. He is a man of strong mind, most honourable feelings and first-rate professional talent ; but the propensities of a tobacco smoker seem to have crushed some of the nobler and more sensitive qualities of his mind. He began to smoke cigars *for the sake of companionship*, and they cost him much sickness and discomfort before the habit became pleasing. The tobacco has now become a pleasurable stimulant, and even a necessity when this feeling is allowed to overcome his judgment. It excites great thirst ; and to avoid spirits he deludes himself into the belief that he is incurring no evil by drinking with his cigars and after them, either cider or beer. After taking a glass of either liquid, he requires a second, then a third, then a fourth ; for he knows not where to stop. And so he continues to smoke cigar after cigar, and to swallow glass after glass, until he becomes reckless of the amount of his potations. Each morning with its re-action brings headache, depression of spirits, and what is more, repentance and disgust of himself !

He rises uncomfortable, cross, peevish, and often unjust ; and he repeatedly vows that he will never touch another cigar, nor drink anything stronger than tea. This pledge he repeats voluntarily, and even over and over again. But, how does he redeem it ? No sooner is the family dinner ended, at which he drinks nothing but toast and water, than he feels the want of a stimulus to raise his spirits : the narcotic agent of tobacco smoke is therefore resorted to, and the scene of yesterday is played over and over again. At length all his family have lost confidence in his vows and promises, which he is heartily ashamed of having so repeatedly made, so repeatedly broken. Still he retains the vile propensity : but being ashamed to encounter the pitying smiles of his friends, and the imploring words and looks of his amiable wife, he now retires into holes and corners, and low public-houses, there to enjoy unseen by those who love him, the degrading and filthy indulgence which masters his reason !

Meanwhile he continues each day to utter in the fullness of his heart the promise of amendment that he never keeps. So horror-stricken is he however at his own weakness, that he *has urged us to mention it in this paper*, in the hope that it may deter others from the commencement of a practice attended with so many evils and assuming so despotic an influence over the mind, as to deprive him of the faculty of exercising his own will ! He has no longer the courage to do that which he acknowledges to be right but continues the sacrifice of a debasing indulgence. He has no longer the fortitude to give up a temporary gratification which he declares to be destructive of his bodily and mental health, and the cause for which he has sacrificed his domestic comfort.

Some time has elapsed since the foregoing appeared in the pages of this work, and it is to be hoped that it has often produced the good effect which its author intended. What becomes of the palliative excuse which Dr. Richardson could find for smokers who before it was too late *could* put down the overwhelming habit. Here is one who could not do that, and how many more are there at this day who must acknowledge the unhappy indulgence which masters the reason.

It is time however that we brought this dissertation on the general use of tobacco to an end. There is no occasion for any resumé of these remarks. Does any one doubt that he is doing right in following the practice of smoking even for "companionship's sake," let him scan well what is here placed before him and admitting all his doubts if he will, but follow the old safe precept "when you doubt abstain," he will be a fortunate man, his pocket will be all the better for it, his health will not be impaired, and he will not be the slave, the victim of a degrading vice. It is for these persons we have thrown together the foregoing in these abandoned days, when we are led to believe from personal observation, from statistics and from revenue returns, that the habit of consuming tobacco in its various ways, but more especially in that of smoking, was never more rife than it is at present. And we will conclude our essay with the following piece of encouragement to the non-smoker. We read in a paper only last month the following, which we consider well worthy of preservation. It was announcing the death of an old St. Vincent veteran seaman, and said:—One of the last of Nelson's brave companions at the battle of St. Vincent, has just died at Fremington, near Barnstaple, at the great age of 97. Thomas Pile was one of the crew who boarded the San Josef, and assisted the immortal hero into the chains of that vessel. Nelson exclaiming, "Give me your hand, Pile; I'm a good soldier but a poor sailor." It may be mentioned that, although a sailor from his boyhood, Pile never indulged in a pipe of tobacco.

With the view of adding to the utility of these remarks we annex to them the following statistics of tobacco from the *Daily News*:—

If the English monarch whom Sully profanely designated "the most learned fool in Europe" were to revisit this earth, he would find ample materials at hand for preparing an enlarged edition of his "Counterblast against Tobacco." Wherever he went he would smell the fumes of the weed which he disliked as intensely as he dreaded the sight of the naked sword. In the public streets, where men of business jostle each other; in the promenades, where men of pleasure congregate for amusement; in the private house and the fashionable club; in the railway carriage and the cab; even within the precincts of royal palaces would King James the First see that what in his day was termed "taking tobacco" had now become the rule. It is doubtful if he would consider the existence of an "Anti-Tobacco Society" as a set-off to this lamentable state of things. Whether he liked it or not, he would have to conform to the usage, and accept accomplished facts. For good or evil, the use of tobacco has become an English custom. The ascetic who denounces as a vice every practice which gives him no pleasure is congenially employed in prophecying hard things of those whose pipes and cigars he has failed to extinguish. Having ascertained as a fact that excessive smoking is injurious to health, he draws the illogical inference that the use of tobacco in any form and degree must imperil life. Meanwhile the public, disregarding his denunciations, smokes and snuffs, and does not seem any whit the worse. One man has special reason for applauding the attitude and



action of the public. The Chancellor of the Exchequer would have to provide by other taxation for a deficit of six millions were the consumption of tobacco wholly to cease.

Last year the value of the tobacco imported into the United Kingdom was £2,381,312. By this the revenue profited to the amount of £6,549,282. There is not, indeed, any article of commerce which is so highly taxed as tobacco. A pound of the raw material costing sixpence pays duty to the extent of five shillings. The tax is enormous, yet it is paid less grudgingly than other taxes of smaller proportionate amounts. Quite as remarkable as the largeness of the revenue from this source is the variety of the quarters from which we import what Stow called "that stinking weed." It is commonly supposed that our supplies come from the United States, the Havana, and Manila. This is vulgar error. Hardly a region of the habitable globe but is not laid under contribution by Englishmen who smoke or take snuff. Hamburg sends us tobacco, as well as sherry; both of these are probably among things to be avoided. Upwards of forty-six thousand pounds worth of raw material, and two thousand five hundred pounds worth of cigars, were imported last year from the free city of Bremen. The Dutch are not only vigorous smokers themselves, but are active agents in helping us to a supply, as last year they sent us tobacco to the value of more than a quarter of a million. Belgium and France figure on the list for the sums of ten and thirteen thousand pounds respectively. Greece exported the same quantity as Belgium; perhaps, if Greece had devoted more attention to the culture of the tobacco plant, and less to the nurture of the "great idea," her creditors would now be better satisfied, and Europe more tranquil. Her much-detested foe has outstripped her in this respect, for the value of the importation from Turkey was upwards of £60,000. Portugal and China have furnished us with the like quantities, £1,500 being the value in each case.

Strange as it may seem, Japan, one of the last of the countries thrown open to European commerce, outstrips Cuba—the island where, in 1492, Columbus saw tobacco for the first time—in the value of the raw material imported into the United Kingdom last year, the former sending us what was worth £76,398, and the latter £26,429. Cuba, however, made up for this in another particular, seeing that she sent us £382,407 of cigars. The Island of St. Thomas, too, figures in this list, to the surprise of those who had imagined that the sole products of that island were yellow fever and earthquakes. It is gratifying to learn that, notwithstanding dire convulsions of nature, and the visitations of a terrible pestilence, the natives of St. Thomas's have been able to export tobacco to the value of £2,374. New Grenada, Ecuador, the Argentine Confederation, all send considerable amounts. Syria and Palestine contribute their not insignificant quota. The Phillipine Islands help to swell the total by contributing a large proportion, while the United States lords it over them all in this as in some other matters, furnishing us with raw material to the value of £1,079,005.

Coming nearer home, we find the huge and costly French colony of Algeria put down for the sum of £3,252, whereas those small dependencies of the English Crown, the Channel Islands, sent raw tobacco to the value of £4,909, besides sharing with Portugal the honour of exporting nearly all the snuff received here from abroad, which was valued at £1,571. Tobacco is among the few articles of general consumption which this country does not aid in producing. We are not disposed to quarrel with the policy which has led to the prohibition of the growth of tobacco for commercial purposes on British soil. The Legislature has had reasons, which, if insufficient when regarded from an abstract point of view may nevertheless be allowed to be weighty on the ground of expediency, for restricting the freedom of the British husbandman in this matter. It might be worth while, however, to reconsider the decision arrived at shortly after the beginning of the reign of William the Fourth in so far as Ireland is concerned. Till then the culture of the tobacco plant, under the restriction of excise regulations, had been carried on there with success. This appears to be one of the things for which, as well as for the growth of flax, some districts of Ireland are peculiarly well adapted. The Irish have never numbered the prohibition to raise their own tobacco among their intolerable grievances. But they have complained of many other acts of the Imperial Parliament with far less reason.

Nearly as remarkable as the quantities supplied by the different countries of the world, is the variation in the qualities of the tobacco yielded by the soils of these countries. Nicotine, the poisonous oil which is distilled during the process of smoking, is found in varying proportions in the leaf grown in Europe, Cuba, and the United States. French tobacco is the most highly charged with the poison, the proportion being from seven to eight per cent. of nicotine. Maryland and Virginia occupy intermediate positions, their tobaccos containing from six to seven per cent. These differences might be illustrated in a more striking way were other peculiarities taken into account; but we have said enough to render those cautious who sweepingly condemn smoking in every form, as if all smoking were equally pernicious. The mistake is the same as that made by those who believing the use of spirits to be hurtful, place in the same category the man who drinks a glass of brandy, gin, or whisky, with him who sips a glass of light hock, Moselle or claret. General considerations will not, however, avail to convince those who took up a side on principle. Happily it is no part of our duty to reconcile the smoker who indulges in his luxury with the non-smoker who censures his wickedness. The wisest course to be pursued by those who disapprove of that which cannot without exaggeration be stigmatised as vicious is to preach the sensible and too much disregarded doctrine of moderation. [But let them keep to that moderation if they can. If they cannot their case is hopeless and they must be classed among the victims.] Very many years ago prohibition was tried, and signally failed. Shah Abbas of Persia decreed that all who smoked should suffer death. What the Scotch Covenanters did for conscience sake the subjects of Shah Abbas did for the sake of

pleasure. They fled to the mountains and there indulged their taste for smoking till their ruler, learning that toleration is better than persecution, revoked his decree and suffered them to return home and smoke in peace.

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A FRIGATE'S MAIN-YARD SPRUNG AND FISHED AT SEA.—  
H.M.S. *Arethusa*.

[The following easy method of fishing and sending up the main-yard of a Frigate at sea in bad weather and rolling heavily, after being sprung, was recently adopted on board H.M.S. *Arethusa*, and carried out under the seamanlike management and immediate direction of her commander.]

On December 15th, 1868, the main-yard of the *Arethusa* was carried away and broken in two pieces at the port quarter of the yard in a very heavy squall off Cape St. Vincent, when the following measures were immediately taken:—

The wire jackstay prevented the inner end on the port side from coming down, and the slings did the same on the starboard side. The broken pieces were lashed to the rigging; the sail unbent, and both pieces sent down with up and down tackles. The yard was then placed in the starboard gangway, the starboard yard arm aft, and the two broken pieces roused together with tackles. They were then fished with six iron fishes, let in, bolted, and secured with four iron hoops driven on outside all. Six capstan bars were secured on the under side with two iron hoops and lashed. Six capstan bars and two top gallant studding sail booms were secured on the sides and top with lashings of 3½ in. worn rope. For sending up the yard—a topmast studding sail boom was lashed up and down each side of the main-mast, and the trysail-mast was wedged for a temporary truss to work upon, with but little friction in swaying. The jcers were rove and brought to the capstan. On each quarter of the yard we had an up and down tackle hooked to the lower mast head and to the port yard-arm, a sail tackle from the main topmast head and brought under the main stay. The main tack was used to steady the port yard-arm from surging against the boats, and 7 in. ropes were passed as slip-ropes and well manned to keep the centre and starboard yard-arm steady, and slipped when of no further use. A temporary truss was made of a runner and tackle, the tackle being led aft, and the pendant taken through a block under the cross-trees, down through the gin on the yard for the truss, round the mast outside the trysail mast and studding sail booms, and secured to the opposite side of the yard in the bunt. The yard was now swayed up square till above the boats; then the port yard-arm swung across under the main stay and topped up, and the truss hauled taut, and the yard swayed and topped till the lower yard-arm cleared the rigging, then swayed up square. By this plan the yard was sent up in a short time, as easily and as well under control, as if in harbour, although the ship was rolling 15° under treble reefed topsails.

BONHAM W. BAX, *Commander*.

## CAMERON'S AZIMUTH AND ALTITUDE TABLES.

It is a remarkable and somewhat curious fact, that there are no books less criticized or reviewed than nautical publications; and it may also be added, that none require such ordeal more than they do. I am not prepared to say how this happens, unless it be, that sailors, as a class, are deficient in education and critical judgment to be able to pass sentence on the very books which they use professionally. Surely such is not the case, it is ungenerous to believe it, so let us conclude that it rather arises from an apathetic indifference to writing or taking any trouble about that which may be "nobody's" business, except that of a professional critic. There is another cause which might be likely to operate with many men, so as to prevent them from telling us something which the majority of our profession *may* not know, and it is this. The public (they believe) will not give them credit for a good motive, but rather consider they are displaying their own knowledge, or making a show of intelligence or education, which may by no means belong to them, and to which they would be the last persons to lay claim. Rather than be placed in such a position, or be ungenerously criticized, such men prefer to be silent, and who is to blame them. However, as these criticisms are anonymous, their author will escape either praise or censure for them, and will be quite content in relying on the truth of his signature, "*That which is true, is safe.*"

A few months ago the author of these remarks took charge of his first iron ship in Liverpool, and being somewhat anxious about the compasses, it occurred to him to inquire of some men who had been in command of iron ships for years, if there were any hints about the best methods, books, or suggestions which might be useful for him to know regarding the compasses.

Two commanders of iron ships, with whom he had a slight acquaintance, met him in the street, and he put such questions to them, when they simultaneously exclaimed, "you just get Cameron's Azimuth and Altitude Tables, and you won't have the least bother."

Now, by this he was somewhat taken aback, because he was conceited enough to believe himself well conversant with the best books on the subject, viz. :—The Admiralty Manual on the Deviations of the Compass; Practical Information on the Deviation of the Compass, etc., by John Thomas Towson, F.R.G.S.; Burdwood's Tables and Saxby's Spherograph, as daily working books. These works he was using daily, and could hardly conceive of anything superior, or better adapted for daily use. You may imagine, Mr. Editor, that your humble servant considered himself as "taken down a peg," when told that "Cameron" was the only "Simon Pure," the only thing needed to conduct an iron ship *anywhere!* and that he was unable to refute his friends, or discuss the matter in any shape because he had not seen the book. However, his course was at once shaped for a Nautical bookseller, and then was purchased by him for 7s. 6d. the book bearing the following title, "The Variation and Deviation of the

Compass Rectified by Azimuth and Altitude Tables from the Equator to the Latitude of Eighty Degrees, also, by the Azimuth and Altitude Tables are found the True Position of a Ship at Sea. The error of the Chronometer, and the Longitude. Likewise, A Treatise on Magnetism, and the Deviations of the Compass in Iron Ships. And the Method of Observing and Correcting them by Magnets. Third Edition, by Paul Cameron. London: George Philip and Son, etc., 1868."

Now, sir, there's a fair promise here of something useful and good, and by subsequent enquiry, it appears that Mr. Cameron is a thoroughly honest, industrious, and conscientious writer. However, notwithstanding this, it is not clear to me that there was not some prejudice about me against this book. Should it be condemned at once? No. Where had it been hiding then, that it had not been heard of by me before? Possibly my desire might be to find fault with it, to discover errors and defects in it. In such a spirit the book was taken home by me, and, unfortunately for Mr. Cameron, some glaring errors were at once alighted on.

In the title page we are told that the tables are suitable "from the equator to the latitude of eighty degrees," and again at page 36, at the bottom it is stated, "From the above examples it will be evident that the true azimuth may be found from the tables in all latitudes from sunrise to sunset." My endeavour will be to prove that the tables are only applicable to the northern hemisphere. so let us take one of the author's own examples at page 43. "Example II. Latitude and Declination South. To find the Azimuth, Time, Variation, and Deviation.

"On October 3rd, in latitude  $44^{\circ}$  S., and the sun's declination  $15^{\circ}$  S., the apparent time is 10h. 17m. a.m.; what point of the compass is the sun on, reduced to mean time? Turn to the table of latitude  $44^{\circ}$ , and under the declination  $15^{\circ}$  N. (now changed to S.), in a line with the given time, is S.E., the point required."

Now, I think, a glance at the question as there stated, is sufficient to tell us that the sun could *not* bear S.E. at 10h. 17m. a.m., nor at *any* time, nor with *any* declination, in latitude  $44^{\circ}$  S., but that the answer should be N.E. or more correctly N.  $45^{\circ} 6'$  E. Again, at page 44. "Example IV. Latitude and Declination south. To find the Azimuth, Altitude, Variation, and Deviation. In latitude  $49^{\circ}$  S., and sun's declination  $20^{\circ}$  S.; what is the sun's azimuth and altitude at 9 a.m.? To find the azimuth—Turn to the table of latitude  $49^{\circ}$ , and under the declination  $20^{\circ}$  N. (now changed to south declination), in a line with the given time, is found E.S.E., the azimuth. It is scarcely necessary for me to point out, that the answer ought to be E.N.E., or more accurately E.  $22^{\circ} 38'$  N.

"Example V. In latitude  $24^{\circ}$  S., and the sun's declination  $7^{\circ} 30'$  S., when will the sun be S.W.?"

Yes, indeed, we should very much like to know *when*; but our author appears to be in no doubt about the matter, because he answers "three minutes past one p.m." It is superfluous criticism to point out the absurdity. Examples VI. and VII. are precisely similar, and the answers equally absurd.

Who can understand how such glaring errors have escaped Mr. Cameron's notice, or how he comes to tell us the tables will show us the true bearing of the sun in southern latitudes. Moreover, the book has reached the third edition, without some friendly pen to tell us the value of its contents, or expose its errors; and yet about Liverpool it is said that this work is well known and much used! It must be concluded that my worthy friends were not in the habit of "doing" Azimuths south of the equator, or else the book would not have been so highly recommended to your humble servant. However, before another edition comes out, Mr. Cameron may take care to see that it is really adapted to southern latitudes, or suppressed entirely; for although the book may be in some degree useful, it will never supersede or compare in utility with Burdwood's Tables, and Towson's Practical Information; and as a really good approximation (which it always is) Saxby's Spherograph is infinitely preferable. While on this subject, please tell us, if you can, whether Captain Burdwood is extending his tables to the equator? and if so, when may they be expected from the press? With his tables, it may be truly said, that practically the sun's bearing is known at *any* and at *every* minute while above the horizon, and when completed to the equator we shall have everything necessary to find our deviation by the simplest possible method. As one who has benefited in no small degree from his tables, and who has a slight knowledge of the immense labour involved in their calculation, I here tender to Captain Burdwood my humble tribute of thanks and esteem.

Let not our shore cousins unjustly imagine that our scientific education is at a somewhat low ebb, when we permit such a book as that above-mentioned to reach a third edition without comment. No such thing could happen with any other than a Nautical publication. Any other class of book would be pounced upon by a host of critics within a week of its issue from the press, and its merits and demerits would be shown forth with a merciless severity, its truth or falsehood tested, its instruction and conclusions assailed, and if it survived after such an onslaught, we might be pretty certain it was of considerable value. With "Webfoot" the case is very different, and during some years much trash has been sold to us which ought to have gone to the "butterman."

One *very* remarkable production was "Price on the Longitude." One might be afraid to say how many editions it reached without a public remark, that has been seen by me, until you took blame to yourself for allowing it to exist so long; and yet it went forth puffed by a "Professor" of Mathematics. We should not like to send *our* boys to *such* professors, for either his notions of mathematics were rather happy, or some motive, *not* conspicuous, induced him to flourish his name to such a pamphlet; this too, after it was rejected by the Admiralty, and told of its impracticable character.

It may be worth while to inquire how these works, or those similar to them, obtain such a sale, when our first class publications and charts issued by the Admiralty are comparatively unknown by the majority of our profession. This is said advisedly after much observation of

my fellow-craft. Nine out of ten ships are still navigated by the "blue-backs," and on one occasion, incredible as it may seem, a master exclaimed on seeing my charts "Where on earth do you get those white charts." He had not heard of them before. Possibly the "blue-backs" give the most profit to the Nautical booksellers, at least, we are constrained to believe so from the fact that we seldom see any other charts for sale in the shops of our sea-port towns, London excepted. Indeed, from a somewhat close observation of the windows exhibiting Nautical works, an Admiralty publication or chart has been rarely seen by me; if you are a purchaser, most assuredly they will not be so prominently put forward for your inspection. In Liverpool, Messrs. Philip, Son, and Nephew are the *only people* who keep all the Admiralty charts and books, except the Custom House, at least no others are known to me. Here and there you may find a few stray charts and books, and the shopkeeper will always say he "will get them for you," but their sale is never pushed, nor their worth made known to the profession as it should be. I conceive this arises from the much greater profit accruing from the sale of books and charts issued by private publishers, and which is always an effectual stimulant towards their sale.

Again, during the issue of the Meteorological Papers compiled by the late Admiral Fitzroy, and issued by the authority of the Board of Trade, the exhibition in a shop window of any one, or advertisements in any way made known to sailors, was never seen by me, and to this day three-fourths of the shipmasters out of England have never heard of them. They came to my knowledge only on the issue of the fourth number, from looking over the books displayed on the counters of Mr. Potter, in the Poultry. This was of course accidentally, and they have not been seen by me elsewhere, nor a single copy any where except in his shop. In all probability they would never have been heard of by me until many numbers were published, but from the habit of looking over counters and windows to see if there is any thing new in our way.

Surely this state of things should be remedied by some method of telling us when new professional works are published. The Mercantile Marine offices would be a very good place to exhibit advertisements and notices of this nature, because *every* master must go there, and if such a plan were adopted we should at once know where to look in order to find the latest professional publications; moreover it might be the means of inducing very many of our brethren to take greater interest in what might be termed the navigating department of our occupation, the followers of which are at present most indifferent and careless of improving their knowledge in that direction.

Let me conclude this short paper with an earnest hope that we may see such criticism in the *Nautical* as shall effectually weed out our worthless professional books, too many of which have appeared of late years, and also that the useful and good may be made known to every one who chooses to read.

I remain, Sir, your obedient Servant,

14th January, 1869.

QUOD VERUM TUTUM.

[Our correspondent has touched on a very important subject to Mercantile Nautical men. It involves all nautical publications for their use. And first, respecting books—until the present time we never even heard of Mr. Cameron's Tables on the compass, but we have always considered Towson, Burdwood, and Saxby as first authorities in these matters, and although Burdwood's Tables have yet left a hiatus of intertropical space to be filled up, we yet hope the great prevalence of iron ships navigating the ocean will form sufficient reason on which to found their completion, and thus to supply one of the most urgent wants of all navigators in keeping them from the great difficulties of *deviation* about the equatorial regions. Then as to the remarks of our correspondent about charts—the difficulty in the way of the Admiralty charts being adopted by Mercantile seamen is an old complaint. What supervision by authority is there respecting a merchant ship's charts at all. She may sail from this country with a chart as old as the hills, whether of the Admiralty or any private party, there is no law that we know of against it. We are not for forcing Government charts on them, although all other governments but ours do so on their country's ships. But still some measure (and a stringent one too) should be adopted by our Government to see that the charts a ship sails with from this country should be correct up to the date of her sailing, which they are not now, and we know of no law to compel them to be so. This subject has long been neglected in this country, and in these days of reform should be looked into. In 1867 a Committee noticed this subject, but that is all we have heard of it. It is rather singular that Messrs. Philip's name alluded to by our correspondent does not appear in the list of Chart agents in our Advertisement Sheet.—ED.]

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#### THE GULF STREAM AND ITS ERRANTRY.

WHAT has the Gulf Stream to do with the Geographical Society might well be asked, and a conclusion more reasonably made, that the sources of the Jordan or the unknown lakes of the Holy Land would form a far more becoming subject for dissertation by that learned body. Nevertheless a schism has been produced by a paper read there, and as all such matters are interesting to seamen, we transfer the remarks on the same to our own pages.

“A great popular reputation was attacked at the last meeting of the Royal Geographical Society. We do not know whether Mr. Findlay, who called in question the character of the Gulf Stream is related to Sydney Smith's friend who had been heard to ‘speak disrespectfully of the Equator,’ but he surpassed him in temerity. For most of us the Equator is but a name, whereas the great Gulf Stream is a practical influence, not to say a national institution, in which we all take a lively interest. For the last three months we have been talking of it, and



attributing to it the mildness of our climate, and in particular the warmth of the present winter. According to Mr. Findlay, the Gulf Stream has little or nothing to do with the matter. In fact, the extent and importance of the current have, it is asserted, been altogether over-estimated by geographers and meteorologists. The Stream may warm the Newfoundland Isles, or serve some trifling purposes of the kind, but cannot possibly carry across the Atlantic the warmth of tropical regions.

“Mr. Findlay’s arguments are founded on the fact that the waters which flow through the Narrows of Bemini, the channel from which the Gulf Stream proper proceeds, do not form a current powerful enough to travel to the shores of Europe, and distribute the warmth of the tropics over so wide a surface. The whole bulk of the water which flows through the Narrows would not suffice to make a film fifty feet deep off Newfoundland, he tells us. And when the current has reached this point, it has still to encounter the Arctic currents coming down the coast of Labrador, ‘which interlace in many belts of cold water with the corresponding belts of the Gulf Stream.’ He explains the warmth of our climate as being due, not to the Gulf Stream, but to the trade or passage winds coming from southern latitudes, and influencing the waters of the ocean. Even the tropical waifs and strays which are carried to our shores are not in his opinion to be looked upon as any proof that there is a current—they are brought to us by the oceanic drift.

“Two or three circumstances which Mr. Findlay seems to have omitted to consider may perhaps tend to restore our confidence in the character of the Gulf Current. It was pointed out at the meeting itself, and by no less eminent a man than Professor Huxley, that the great rapidity of the current as it passes through the Narrows of Bemini tends considerably to modify the conclusions which we might be disposed to draw from the small dimensions of the current at this point. In the Narrows the current flows at the rate of four or five miles an hour, so that the amount of water continually making its way out by that channel is equivalent to that which passes along the wider parts of the current at a slower rate. But it must also be pointed out that a large part of the current which we call the Gulf Stream, does not in reality pass out of the Gulf of Mexico. The great equatorial stream, as it flows upon the broken barrier formed by the West Indian Isles, is in part intercepted, so that a large proportion of its waters flow along the outside of the barrier, to join the remainder when the latter has made the circuit of the Gulf, and is flowing out through the Florida Narrows.

“But it appears to us that it is not so much in his estimate of the mass of the current at this point that Mr. Findlay has fallen into error, as in his views respecting its propulsive power. If we were indeed to look upon the Gulf Stream as it comes out through the Narrows, as a current which had to force its way, by means of its own momentum, along the shores of the United States and Canada, and thence across the Atlantic to North-Western Europe, we might feel

very doubtful as to its having a title of the power required for such a purpose. But we must not forget that the Gulf Stream is only a part of a complete system of circulation. It has not to force its way onwards, but a way is made for it; or, to speak more correctly, it is drawn onwards by a force continually in action. The Arctic currents which come down past Newfoundland to meet the Gulf Stream, so far from being in reality opposing forces, indicate the action of the very drawing force we have spoken of. These cold streams are continually flowing out from Arctic regions, and their place must be continually supplied, since the level of the Arctic Ocean remains ever unchanged. It is the Gulf Stream which, flowing continually into the Arctic basin, replaces the water continually flowing out of it through the cold Arctic currents. There is a complete system of machinery, the mainspring of which is not to be looked for in the Florida current, or, indeed, at any point along the line of the Gulf Stream. As for the winds, it seems contrary to reason to assign to a cause so variable the existence of a phenomenon so permanent and unchangeable as the Gulf Stream. Even the trade winds do not blow continuously; nor do they in the greater part of their course flow in a direction which would enable them to help onwards the water of the Gulf Current.

“ Yet more important is the error which Mr. Findlay seems to us to have made in judging of the warming effects of the Gulf Stream. We are not to suppose that our climate is affected by the warmth inherent in the waters of this current, in the same way that an object immersed in warm water is heated. If the Gulf Stream were twice as extensive as it is, and were as hot as boiling water, we should feel no sensible addition to the warmth of our climate were it not by the subtle processes by which the warmth of the Gulf Stream is conveyed to us. There is no natural arrangement more beautiful than that which transfers to us the warmth of the waters which surround our shores. Like most of the operations of nature, it is silent and unobtrusive. The process of evaporation raises from the Gulf Stream the invisible vapour of its waters. This vapour is wafted by the south-westerly winds—themselves the offspring of the Gulf Stream—over the country until the cooler air over the land converts the invisible vapour into cloud, mist, fog, or some other visible form. During the change the heat which had been used up in causing the evaporation of the water is given out again. We have only to watch the formation of the ordinary cumulus or woolpack cloud, the rapid swelling of the great white mass and the changes of figure to which it is subjected, to recognise the quantity of heat which is given out in the process. Thus warmth is abstracted from the waters of the Gulf Current, where it is not wanted, and carried by the winds to be distributed where it is wanted. To such processes as these, and not to the mere neighbourhood of so much warm water, are we indebted for the effects which the Gulf Stream produces on our climate; and, despite Mr. Findlay's arguments, we must still continue to hold that the oceanic circulation exercises a most important influence in this respect, and not only so, but that Humboldt was not far mistaken in the opinion that we are

largely indebted to the Gulf Stream for our position and character as a nation."

Now the main argument in the foregoing extract has long since formed the opinion we have entertained on the subject, viz., to the Gulf Stream we are indebted for the mildness of our climate. But there is something more than this—a qualifying condition remains to be noticed. The westerly or S.W. winds are essential to bring its effects home to us. But for these winds the Gulf waters would only reach the eastern approaches to Europe in the Atlantic Ocean, and it is to this laziness shall we call it, or the slackness of the current in running eastward, that is to be attributed that collection of Vigias to be found in some charts to the N.E. of the Azores, reaching or curving down into the approaches of the Bay of Biscay. It was hereabouts that an old offending Vigia took up his quarters, called the Devil's Rock, in a variety of positions, all within a circle of about twenty miles in diameter, seen here and there within that range and causing many a sleepless night to navigators when passing their vicinity. The Devil's Rock was an old offender, and was only dislodged from the chart altogether by the deep sea lead with about 2,000 fathoms of line, finding the bottom so close to his neighbourhood as to prove that there was no such thing as a submarine mountain there that could protrude its apex above the surface, where Mariners over and over again declared they had seen the Devil's Rock, and brought us even a sketch of it.

But the Devil's Rock was a child of the Gulf Stream, not that which sends its refuse to our shores, but the natural result of it unaided by the westerly or S.W. winds, of which we have had so abundant a supply lately, and which has deprived us of our winter. Winds and currents mostly go together, but more especially when the former are in earnest; and the Gulf Stream, which every one knows the history of, is no exception to the law. No doubt a current will occasionally be found setting against the wind, but this is then light: and the tendency of the Atlantic waters which in the equatorial regions have been driven westward, is to find their way to the northward along the American shores and come steaming up to the banks where westerly winds, especially of so violent a kind as we have had all this winter, hurry them over to our shores, and giving us the full benefit of that mildness for which they are well known. But what there was in all this mere elementary work of the ocean currents to engage the attention of the learned society to which we have alluded is somewhat remarkable.

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CORRESPONDENCE.

*To the Editor of the Nautical Magazine.*

SIR,—The very interesting and useful paper in your February number, from Captain Brown, is one of a kind that should never be wanting to

the pages of the *Nautical*, and in going over these "notes" of the *Isabella Brown's* passage, and marking their practical value, I cannot help taking advantage of the occasion to impress upon my brother commanders how very beneficially their own experience and knowledge would be increased by habits of careful observation with a view to impart information to others. Not only would such a practice greatly lighten the tedium of a voyage, but it would impart a real satisfaction to the mind by the thought of helping others who are to follow in our track.

One likes the story of the old coasting skipper, who never passed the Eddystone, day or night, without blessing the name of WINSTANLEY, for he felt in a dumb grateful way how often he had been saved from disaster by this warning beacon on a dangerous rock, and although it is given to few of us to do what Winstanley did, yet we can all do something useful and needful, if only we have the will. Let us only glance at a brief description of the Eddystone lighthouse, and then we can understand how it happens now and then that a vessel when passing is seen to dip her colours, and let us also be assured that the honour which attaches to the name of Winstanley is shared in a measure by all those who seek to lighten the cares and perils of navigation, and this, your correspondent, Captain Brown, has sought to do.

Seamen would do well to hold in grateful recollection the names of men who have benefited them by their skill and labours, and in the list of these, surely Winstanley deserves a high place, for it was he who first placed a light upon this dangerous Eddystone which now guides the way for vessels, which before, by its fatal eddies, it drew to disaster. The destroyer in ambush now bears aloft a flaming torch, and mariners seek in the horizon as a protector and a guide, the rock which they once dreaded as a pitiless enemy. It gives confidence in a space where it was once a terror, like a ruthless wrecker converted into a pilot, who now guides safely into harbour instead of luring to destruction.

Winstanley perished in his noble efforts, but he left behind him the best gift that man can bequeath to man—the example of a brave, pious, and useful life.

Connected with his death is the remarkable statement that on the night on which the sea destroyed the lighthouse (November 27th, 1703), the model of it at his house in a distant county fell down and was shattered.

W. C. P.

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EXTRACTS OF LOGS OF THE PENINSULAR AND ORIENTAL STEAM  
NAVIGATION COMPANY'S SHIPS IN TYPHOONS, AUGUST AND  
SEPTEMBER, 1868.

[A Correspondent has obligingly sent us the following extracts, which with the assistance of a small general chart for position will

afford the reader an interesting comparison of storms and their management, and may be useful to some of our seamen contributors.—Ed.]

S.S. *Cadiz*, 10th, 11th August, 1868, *Civil Time* from Yokohama to Shanghai. Japan Soas, Lat. 32° 03' N., Long. 135° 26' E.

		Courses corrected for Leeway and Variation.			
P.M.	Courses	Winds.	Bar.	Centre.	
Commencing MONDAY, 10TH AUGUST.—					
	Noon. Moderate gale and overcast; heavy confused sea. 3.30 (according to Log book) finding that the cyclone was coming up and gaining on us, and there not being sufficient sea room to run to the N. to clear it, and the Port Tack being the proper tack to heave to on; to allow the cyclone to pass her put ship on Port Tack under close reefed main topsail, and eased the engines to dead slow. Swell very high from the S.S.E. and S.				
1	N. 19° E.	E. by N.	29.35	S. by E.	
2	N. 14° E.	E.N.E.	"	S.S.E.	
3	N. 12° E.	"	falling	"	
4	S. 10° W.	"	"	"	
5	S. 17° W.	"	"	"	
6	S. 10° W.	N.E. by E.	29.20	S.E. by S.	
7	S. 16° W.	"	"	"	
8	S. 10° W.	N.E.	falling	S.E.	
9	South	"	"	"	
10	S. 11° E.	N.N.E.	"	E.S.E.	
11	S. 20° E.	N. by E.	"	E. by S.	
12	S. 42° E.	N. by W.	28.74	E. by N.	
Midnight. Blowing a whole hurricane with high sea and rain. After heaving to ship drifted and made way 2.4 k. per hour.					
TUESDAY.—					
	2h. Weather moderating rapidly, and barometer rising (I consider the hurricane over at this period).				
	7h. Weather much improved, kept to S. and W. and proceeded full speed; from this to noon made 7.6 knots per hour.				
	Noon. Lat. 31° 8' N., Long. 135° 36' E. Moderate, gale, and fine. Hands cleaning deck, ship still steering S. and W., full and bye on account of heavy swell.				
	3.30 p.m. Kept ship her course S. 85° W.				
A.M.					
1	S. 48° E.	N.N.W.	28.75	E.N.E.	
2	"	"	"	"	
3	S. 59° E.	N.W. by N.	"	N.E. by E.	
4	S. 63° E.	"	29.07	"	
5	S. 81° E.	N.W.	"	N.E.	
6	S. 85° E.	"	29.20	"	
7	N. 87° E.	N.W. by W.	"	N.E. by N.	
8	S. 23° W.	W.N.W.	"	N.N.E.	
9	S. 32° W.	W. by N.	"	"	
10	"	"	"	"	
11	"	W. by S.	29.50	"	
12	"	"	"	"	

Memo.—The ship in my humble opinion should have been kept to the wind a little North, and steamed on full speed to Axis Line\*, and so would have got into the left hand semicircle and have had a fair wind for the rest of the Japan sea passage. At the time it was determined to heave to, 3.30 p.m., the wind had then shown an inclination to veer to the left, showing ship to be within the influence of the left circle, and shortly after it decidedly veered at the rate of about a point an hour.

\* Storm no doubt in the first instance travelling up from the S.S.E. to N.N.W. and North, afterwards glancing off from the land and proceeding N.E., and perhaps more to the eastward judging from the weather and barometer at the time at Yokohama. W. R. G.

Extract of Log of the *Henrietta*, British Barque, in Typhoon of Japan Sea, from Swatow to Yokohama.

	P.M.	Winds.	Bar.	Centre.
<b>SUNDAY, 20TH SEPTEMBER, 1868.—</b>				
A.M. to Noon, fresh wind and cloudy, heavy N.E. sea, ship pitching much; Lat. 32° 40' N., Long. 137° 40' E.	1	E.S.E.	...	S.S.W.
	2	...	...	...
P.M., fresh wind from E.S.E. and cloudy weather.	3	„	...	„
4h. Bar. 29.70 and falling, in topgallant sails and reefed the topsails	4	...	29.70	...
6h. Bar. still falling, and wind increasing, with high sea, stowed the courses.	5	S.E.	...	S.W.
8h. Bar. 29.59, blowing strong, with thick weather and heavy rain, every appearance of a hurricane coming on; close reefed and made all snug.	6	...	...	...
	7	S.S.E.	29.59	W.S.W.
	8	...	...	...
9h. Blowing terrific; wind veering two points (S.S.E.) Bar. falling fast, every appearance of storm approaching nearer. Wove to the northward to see which side storm was on.	9	...	...	...
	10	...	...	...
10 p.m. Wore to the eastward (in consequence of finding Barometer falling fast on the Port Tack) and hove to under storm main trysail on starboard tack, ship head east. Wind S.S.E.	11	...	...	...
Midnight. Blowing a terrific hurricane with very high sea. The sea making a clean breach over the ship forward and aft. Barometer 29.10, wind S.S.E., head East, leeway 6 points.	12	S. by E.	29.10	W. by S.
<b>MONDAY, 21ST SEPTEMBER.—</b>				
A.M. 1h. Barometer 28.98; wind S. by E.; head E. by S.; leeway 6 points.	A.M.			
	1	S. by E.	28.98	W. by S.
2h. Sudden shift of wind from S. by E. to W.S.W. bearing the ship completely under water forward up to foremast, afraid ship would not recover herself, etc. At the shift of wind the barometer began to rise 29.00; the worst of the storm must have passed as the wind immediately after began to moderate, and the barometer steadily to rise.	2	W.S.W.	29.00	Sudden
	3	to	...	shift
	4	to	...	...
4h. Set trysail and reefed main topsail to steady the ship to the tremendous confused sea on at the time.	5	W.N.W.	...	...
Daylight 5.30 Moderating fast, made sail and stood to the N.E. on course. Wind S.W.	6	to	...	...
Noon, Barometer 29.50', Lat. 33° 35' N., Long. 138° 48' E.	7	to	...	...
Position during worst part of storm 30' N.E. of noon—Sunday.	8	Noon	...	...
	9	gradually	...	...
	10	gradually	...	...
	11	veering	...	...
	12	veering	29.50	...

Memo.—From the sudden shift mentioned, I imagine the ship must have been close to the centre, say just outside the influence. I also think his barometer is a high set one or it certainly would have shown lower, etc. W. R. G.

Extract of Log of the *Helen Black* in Japan Seas Typhoon, from Hiogo to Yokohama.

	A.M.	Winds.	Bar.	Centre.
<b>SUNDAY, 20TH SEPTEMBER.—</b>				
A.M. 2h. Increasing wind. In first and second reefs.	1	E. by S.	...	...
	2	East	...	...
	3	...	...	...
4. Wind more moderate,	4	...	...	...
8. Land in sight on lee bow.	5	E.S.E.	...	...
11.30. Omac Saki N.E. by E. 10'	6	...	...	...
Noon, Lat. 34° 37' N., Long. 138° 00' E.	7	...	...	...
	8	...	...	...
	9	...	...	...
	10	...	...	...
	11	...	...	...
	12	...	...	...
<b>P.M.</b>				
P.M. Increasing wind and rain.	1	East	...	...
5. Barometer falling, appearances indicating a Typhoon; made all preparations for bad weather; stowed all sail except foresail.	2	...	...	...
	3	...	...	...
8. Wind veering to the S.W., up foresail.	4	E.S.E.	...	...
	5	...	...	...
8.30 to 9. Calm, Barometer 28.95; ship supposed to be in the centre of a Typhoon. Main topsail close reefed, and hands standing by, etc.	6	S.E.	...	...
	7	...	...	...
	8	Calm	...	...
	9	N.W.	28.90	...
9.5. The storm burst out with great fury from the N.W., laying ship down very much; lost star-board life-boats and davits.	10	...	...	...
	11	...	...	...
Midnight. Terrific gale with rain.	12	...	...	...
Ship from noon to centre stood south about 50' miles.				
<b>MONDAY, 21ST SEPTEMBER.—</b>				
A.M. 4. Wind abating, Barometer 29.00.	A.M.	...	...	...
6. Made sail.	1	...	...	...
Noon. Rock Island N. $\frac{1}{2}$ W. 4'.	2	...	...	...
	3	...	...	...
	4	...	29.00	...
	5	...	...	...
	6	W.N.W.	...	...
	7	...	...	...
	8	...	...	...
	9	...	...	...
	10	...	...	...
	11	...	...	...
	12	...	...	...
<b>P.M.</b>				
P.M. 1. Wind S. W., and fine weather.	1	...	...	...
[I was not able to get the Barometer for each hour from this ship owing to the Captain not being on board. W. R. G.]	2	S.W.	...	...
	3	...	...	...
	4	...	...	...
	5	...	...	...
	6	...	...	...

Memo.—The *Cadiz's* position on Sunday at noon (of which log is not given), was as follows:—Lat. 31° 12' N., Long. 133° 11' E., barometer 29.45, wind north; blowing a stiff gale from the northward with a high sea, ship obliged to heave to on account of the sea. I have no doubt that the ship was on the Western Verge of the Typhoon experienced by the *Henrietta* and *Helen Black* about 5 p.m., the weather moderated rapidly and sea went down.

W. B. G.

## A VISIT TO HAWAII.

THE fires of Kilauea having been reported to be burning more brightly than usual, the magnet of curiosity pointed us to Hawaii as the island most likely to afford, during a short summer vacation, an abundance of material to work up into "rural sketches." At the shrill call of her master, the prompt steamer backed from her pier, on the eve of our national anniversary, and we were soon gliding out of Honolulu under the united pressure of steam and wind. The steamer is now too well known and too liberally patronized to need her merits repeated here; suffice it to say that her commander and officers remain the same, ever prompt, and attentive to their duties as well as to the wants of the passengers, be they well, sick, or indifferent. More than this nothing can be said, unless it be, that all who travel in the boat become charmed with her, and acknowledge her superior qualities as an inter-island conveyance. We found on board some seventeen cabin passengers, while on the forward deck a crowd of 155 with their luggage served to put the vessel in her best sailing trim.

The gray dawn of the morning revealed to us Lahaina, with its bold and barren mountains. The vessel had anchored there before light, after a good run of ten hours from Honolulu. A short walk or ride ashore, with a strong cup of coffee, gives a relish and vigour for a continuation of the voyage, not inferior to a lunch at a railway station. A few passengers and freight landed or taken on board, a whistle at eight o'clock, and the steamer was again under way. On each trip up to and returning from Hawaii she touches at Kalepolepo and Makee's Landing on Maui, and at Kohala and Kawaihae, on Hawaii. From these last points she branches off either to Hilo or Kona. A schedule of her arrival and departure from each port may not be uninteresting here:—

TRIP TO HILO.	ARRIVES.	LEAVES.
Lahaina.....	4 to 6 a.m., Tuesday.....	7.30 to 8 a.m.
Kalepolepo .....	10 a.m. " .....	10.30 a.m.
Makee's Landing.....	12 noon " .....	12.30 p.m.
Kawaihae .....	12 midnight " .....	2 to 3 a.m., Wed.
Kohala .....	4 to 5 a.m., Wednesday .....	5 to 6 a.m., "
Hilo .....	6 to 7 p.m. " .....	7 p.m., Thursday.

TRIP TO KONA.—The first three stoppages are made at the same hours on *Wednesday*, instead of *Tuesday*, as on the Hilo trip.

Kohala .....	9 to 10 p.m., Wednesday .....	9.30 to 10.30 p.m.
Hawaihae.....	12 midnight .....	2 to 3 a.m., Thurs.
Kailua .....	6 to 7 a.m., Thursday .....	7 to 8 a.m., "
Kealakekua .....	12 noon, " .....	3 p.m., "

## SOUTH KONA AND KEALAKEKUA BAY.

Touching at Kawaihae at midnight and Kailua at the hour of breakfast, the steamer passed on, arriving at Kealakekua Bay at noon. Years make very few changes in the appearance of the landscape and scenery immediately around the bay. The same



dark lava rocks, the same waving cocoanut trees, and rusty thatch huts, constitute the chief features of Kaawaloa and of Napoopoo, situated on the opposite shores of the bay. The same cocoa-tree stump, with its rudely marked copper tablets, still remains the only monument to mark the spot where fell "the renowned circumnavigator," whose deeds have added to England's glory and fame. Time is evidently thinning out the population, and the number of huts in the villages on the bay has decreased during the last ten years. The census of 1860 gives the South Kona district a population of 2683. Most of the foreign residents (of whom there are in the whole Kona district about 100) live on the elevated table land back of the village of Napoopoo or Kealakekua, Capt. P. Cumings being the only foreigner residing on the beach, where he has been located for some sixteen years. In the appearance of the farming and fruit district, the past few years have made a great change, both in the number of dwellings and their improved appearance. There is no district on the islands that reminds a traveller so much of the rural neighbourhoods of New England villages, as that lying between Kailua and Kealakekua. Handsome frame or stone houses, of neat style, and almost buried in groves of luxuriant shade and fruit trees, with their green blinds peering out from underneath arbours of vines and climbing roses, afford a sight nowhere else to be found in our group.

The orange and coffee orchards are to be seen on either side of the road, in some places loaded down with fruit, while in others they are drooping and dying with the insect *blight*. This curse still continues, discouraging the farmers and robbing many of them of their means of livelihood. Some think it is decreasing, but its effects are everywhere noticeable, and the extent of its evil may be best judged from the fact that one farmer, who gathered, in the year before the appearance of the blight 15,000 pounds of coffee, last year picked from the same trees only *seven hundred* pounds. With the orange trees the *blight* is no less severe. Large trees of fifteen to twenty years' age, which formerly yielded from 3,000 to 5,000 oranges, are now either entirely barren, with their limbs decaying, or yield only a few hundred. No available remedy has yet been found, though several applications used on individual trees have been found beneficial for a short time but require to be renewed. All are hoping that this scourge will eventually pass away, as other evils have done, from exhaustion. The old natives say that a blight of a similar character occurred a long time since; but we do not remember seeing any reference to it in any of the historical works on the islands. If it occurred at all, it must have been during the traditionary period, and on other fruits and trees, and before the arrival of foreigners, who brought with them the orange and coffee tree, now the subjects of the scourge.

The reputed excellence of the coffee of this district is no fable. It has a peculiar fragrance which no other coffee grown on these islands possesses in the same degree. This is said to be attributable to the manner in which the berry is cured, being allowed to dry in the husk, which of itself possesses a rich and delicious aroma that becomes

imparted to the berry in the drying process. Each farmer has his own method of curing, and some of the coffee cured here may be a little more fragrant than other brands grown in the same district. Contrary to most other kinds of fruit, age adds to the value and strength of coffee, and it may be thus kept five or six years, constantly improving. Such delicious coffee as that furnished at the table of Capt. Cumings, under whose hospitable roof it was our good fortune to remain during our sojourn at Kealakekua, is seldom found. There was a rich and aromatic flavour in the beverage as prepared by him, which intoxicates one with delight, and it is difficult to conceive of any preparation of this favourite oriental beverage more delicious. No one who tests the coffee of Kona, as prepared by its residents, will fail to award to it a superiority over every other.

The farmers of Kona still persevere in raising orange trees, and numerous groves of young trees border the road. These trees are nurtured with as much care as if the blight did not exist, the general expectation being that it will pass away before they come to maturity. The orange comes into full bearing from twelve to fifteen years of age, and bears annually from 1,000 to 5,000 oranges. It is a long-lived tree, and generally increases in its yield as age advances. It is estimated that there are in the Kona district about 6,000 orange trees, mostly small, of from three to six years' age. The trees in full bearing are comparatively few. It is evident that in the course of eight or ten years hence, the orange trade of Kona will become extensive. Still, there is room for more trees, and 100,000 could be planted (so far as space is concerned) in this district alone. But it requires capital, and no small amount of patience to plant and wait ten or fifteen years for a return on the investment.

In company with our attentive host, we rode to the ruins of the ancient *Pahonua*, or Place of Refuge at Honaunau, four miles south of Kealakekua Bay. There remain now only the ruins of a walled enclosure located in the midst of a cocoanut grove, on a rocky point running out into the sea. This enclosure consists of an irregular parallelogram, about 700 by 420 feet in size. The walls on the south and east sides remain nearly perfect, and are, perhaps, the best specimens of the rude masonic efforts of the ancient Hawaiians that are now in existence. The east wall, which is the most perfect, is about 700 feet long, fifteen feet broad, and varying from twelve to fifteen feet high, nearly straight, well built, mostly with small stones, but in some places large stones, probably weighing from one to two thousand pounds, are used. We measured one, lying near the site of one of the *heiaus*, thirteen feet long, two feet wide, and three feet deep. Another within the enclosure, called "Kaahumanu's stone," is of still larger dimensions, and probably weighs several tons. A portion of this wall, about the middle, is laid with remarkable skill, the surface being nearly as smooth as a plastered wall. The stones do not appear to have been hammered to give them the smoothness which they have, but still may have received their surface by having been rubbed together. At the north end of the enclosure, is a raised foundation, where was erected a

Heiau, called the "House of Keawe,"—where were deposited the remains of the kings of Hawaii. There were in the enclosure two other heiaus or temples used for sacrificial purposes. This place of refuge is said to have been used for a similar purpose, as were the cities of refuge among the Israelites. Hither a person could flee, who had committed any offence, such as breaking a tabu, theft, murder, etc., and if he reached the enclosure unhurt, and remained there ten days, became free of the crime. In times of war, it also served as a place of safety for women and children. There is no way to correctly determine when it was built, but tradition ascribes its erection to *Keawe*, one of the kings of Hawaii, who is supposed to have ruled about three hundred years ago. There is a row of coconut trees growing along the inside of the east wall, which was evidently planted after the structure was built. If the age of these trees could be determined, it might serve as a clue towards determining the age of this *Pahonua*. For several years after the first missionaries arrived, the customs and rites of this place of refuge were kept up, and the idols stationed around its walls and heiaus are said to have been seen as late as 1826. Probably the fact that it was the burial place of the kings, and served as a place of refuge, gave it the peculiar sacredness which it long possessed, and exempted it from the general overthrow of idolatry which preceded the arrival of the first religious teachers in 1820.

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#### THE BYE-WAYS OF EUROPE—A VISIT TO THE BALEARIC ISLANDS.

As the steamer *Mollosca* moved slowly out of the harbour of Barcelona, I made a rapid inspection of the passengers gathered on deck, and found that I was the only foreigner among them. Almost without exception they were Majorcans, returning from trips of business or pleasure to the Continent. They spoke no language but Spanish and Catalan, and held fast to all the little habits and fashions of their insular life. If anything more had been needed to shew me that I was entering on untrodden territory, it was supplied by the joyous surprise of the steward when I gave him a fee. This fact reconciled me to my isolation on board, and its attendant awkwardness.

I knew not why I should have chosen to visit the Balearic Islands, unless for the simple reason that they lie so much aside from the high-ways of travel, and are not represented in the journals and sketch books of tourists. If any one had asked me what I expected to see, I should have been obliged to confess my ignorance; for the few dry geographical details which I possessed were like the chemical analysis of a liquor wherefrom no one can construe the taste. The *flavour* of a land is a thing quite apart from its statistics. There is no special guide book for the islands, and the slight notices in the works on Spain only betray the haste of the authors to get over the field with

which they are unacquainted. But this very circumstance, for me, had grown into a fascination. One gets tired of studying the bill of fare in advance of the repast. When the sun and the Spanish coast had set together behind the placid sea, I went to my berth with the delightful certainty that the sun of the morrow, and of days thereafter, would rise upon scenes and adventures which could not be anticipated.

The distance from Barcelona to Palma is about a hundred and forty miles; so the morning found us skirting the south-western extremity of Majorca, a barren coast, thrusting low headlands into the sea, and hills covered with parched and stunted chapparel in the rear. The twelfth century, in the lapse of a crumbling Moorish watch-tower alone greeted us. As we advanced eastward into the Bay of Palma, however, the wild shrubbery melted into plantations of olive, solitary houses of fishermen nestled in the coves, and finally, a village of those soft ochre tints which are a little brighter than the soil, appeared on the slope of a hill. In front through the pale morning mist, which still lay upon the sea, I saw the cathedral of Palma booming grand and large beside the towers of other churches, and presently gliding past a mile or two of country villas and gardens, we entered the crowded harbour.

Inside the mole there was a multitude of the light craft of the Mediterranean, xebecs, feluccas, speronaras, or whatever they may be termed, with here and there a brigantine which had come from beyond the Pillars of Hercules. Our steamer drew into her berth beside the quay, and after a very deliberate review by the port physician, we were allowed to land. I found a porter—Arab in everything but costume—and followed him through the watergate into the half-awake city. My destination was the Inn of the "Four Nations," where I was cordially received, and afterwards roundly swindled, by a French host. My first demand was for a native attendant, not so much from any need of guide, as simply to become more familiar with the people through him; but I was told that no such serviceable spirit was to be had in the place. Strangers are so rare that a class of people who live upon them has not been created.

"But how shall I find the Palace of the Government, or the Monastery of San Domingo, or anything else?" I asked.

"O, we will give you directions, so that you cannot miss them," said the host; but he laid before me such a confusion of right turnings and left turnings, ups and downs, that I became speedily bewildered, and set forth, determined to let the "spirit in my feet" guide me. A labyrinthine place is Palma, and my first walks through the city were so many games of chance. The streets are very narrow, changing their direction, it seemed to me, at every tenth step; and whatever landmark one may select at the start, is soon shut from view by the high dark houses. At first I was quite astray, but little by little, I regained the lost points of the compass.

After having the Phœnecians, Greeks, Carthaginians, Vandals, and Saracens as masters, Majorca was first made Spanish by King Jaime

of Arragon the Conquistador, in the year 1255. For a century after the conquest it was an independent kingdom, and one of its kings was slain at the battle of Crecy. The Spanish element has absorbed, but not yet entirely obliterated, the characteristics of the earlier races who inhabited the island. Were ethnology a more positively developed science, we might divide and classify this confused inheritance of character; as it is, we vaguely feel the presence of something quaint, antique, and unusual, in walking the streets of Palma, and mingling with the inhabitants. The traces of Moorish occupation are still noticeable everywhere. Although the Saracenic architecture no longer exists in its original form, its details may be detached in portals, court-yards, and balconies in almost every street. The conquerors endeavoured to re-model the city, but in doing so they preserved the very spirit which they sought to destroy.

My wanderings after all were not wholly undirected. I found an intelligent guide, who was at the same time an old acquaintance. The whirligig of time brings about not merely its revenges, but also its compensations, and coincidences. Twenty-two years ago, when I was studying German as a boy in the old city of Frankfort, guests from the south of France came to visit the amiable family with whom I was residing. There were M. Saurens, a painter, and a musical enthusiast, his wife, and Mademoiselle Rosalba, a daughter, as fair as her name. Never shall I forget the curious letter which the artist wrote to the manager of the theatre, requesting that Beethoven's *Fidelio* might be given (and it was) for his own especial benefit, nor the triumphant air with which he came to us one day, saying, "I have something of most precious," and brought forth out of a dozen protecting envelopes, a single gray hair from Beethoven's head. Nor shall I forget how Madame Saurens taught us French plays, and how the fair Rosalba declaimed André Ckenier to redeem her powers; but I might have forgotten all these things, had it not been for an old volume which turned up at need, and which gave me information, at once clear, precise, and attractive, concerning the streets and edifices of Palma. The round bald head, earnest eyes, and abstracted air of the painter came forth distinct from the limbo of things overlaid but never lost, and went with me through the chequered blaze and gloom of the city.\*

The monastery of San Domingo, which was the head quarters of the Inquisition, was spared by the progressive government of Mendizabel, but destroyed by the people. Its ruins must have been the most picturesque sight of Palma; but since the visit of M. Saurens they have been removed, and their broken vaults, and revealed torture chambers are no longer to be seen. There are, however, two or three buildings of more than ordinary interest. The *Casa Consistorial*, or City Hall, is a massive Palladian pile of the sixteenth century, resembling the old palaces of Pisa and Florence; except in the circumstance that its roof projects at least ten feet beyond the front, resting on a massive cornice of carved wood, with curious horizontal caryatides in

\**Souvenir d'un Voyage d'Art à l' Isle de Majorque.* PAR J. B. SAURENS,

the place of brackets. The rich burnt sienna tint of the carvings contrasts finely with the golden brown of the massive marble walls, a combination which is shown in no other building of the Middle Ages. The sunken rosettes surrounded by raised arabesque borders, between the caryatides, are sculptured with such a careful reference to the distance at which they must be seen, that they appear as fine and delicate as if near the spectator's eye.

The Cathedral founded by the Conquistador, and built upon at intervals for more than three centuries, is not yet finished. It stands upon a natural platform of rock, overhanging the sea, where its grand dimensions produce the greatest possible effect. In every view of Palma, it towers solidly above the houses and bastioned walls, and insists upon having the sky as a back ground for the light Gothic pinnacles of the flying buttresses. The Government has recently undertaken its restoration, and a new front of very admirable and harmonious design is about half completed. The soft amber coloured marble of Majorca is enriched in tint by exposure to the air, and even when built in large unrelieved masses, retains a bright and cheerful character. The new portion of the cathedral, like the old, has but little sculpture except in the portals; but that little is so elegant that a greater profusion of ornament would seem out of place.

Passing from the clear, dazzling day into the interior, one finds himself at first in total darkness; and the dimensions of the nave, nearly three hundred feet in length by one hundred and forty in height, are amplified by the gloom. The wind, I was told, came through the windows on the sea side with such force as to overturn the chalices, and blow out the tapers on the altar, whereupon every opening was walled up, except a rose at the end of the chancel, and a few slits in the nave above the side aisles. A sombre twilight, like that of a stormy day, fills the edifice. Here the rustling of stoles, and the muttering of prayers, suggest incantations rather than worship; the organ has a hollow, sepulchral sound of lamentation; and there is a spirit of mystery in the stale clammy air. The place resembles an ante-chamber of purgatory much more than of heaven. The mummy of Don Jaime II., son of the conquistador and first king of Majorca, is preserved in a sarcophagus of black marble. This is the only historic monument in the cathedral, unless the stranger chooses to study the heraldry of the island families from their shields suspended in the chapels.

When I returned to the "Four Nations," for breakfast, I found at the table a gentleman of Palma, who invited me to sit down and partake of his meal. For the first time, this Spanish custom, which really seems picturesque and paternal when coming from shepherds or muleteers in a mountain inn, struck me as the hollowest of forms. The gentleman knew that I would not accept his invitation, nor he mine; he knew, moreover, that I knew he did not wish me to accept it. The phrase, under such conditions, becomes a cheat which offends the sacred spirit of hospitality. How far the mere form may go was experienced by George Sand, who, having accepted the use of a carriage most earnestly offered to her by a Majorcan count, found the equipage

at her door, it is true, but with it a letter expressing so much vexation, that she was forced to withdraw her acceptance of the favour at once, and to apologize for it! I have always found much hospitality among the common people of Spain, and I doubt not that the spirit exists in all classes; but it requires some practice to distinguish between empty phrase and the courtesy which comes from the heart. A people who boast of some special virtue generally do not possess it.

My own slight intercourse with the Majorcans was very pleasant. On the day of my arrival I endeavoured to procure a map of the island, but none of the book stores possessed the article. It could be found in one house in a remote street, and one of the shopmen finally sent a boy with me to the very door. When I offered money for the service, my guide smiled, shook his head, and ran away. The map was more than fifty years old, and drawn in the style of two centuries ago, with groups of houses for the villages, and long files of conical peaks for the mountains. The woman brought it down, yellow and dusty, from a dark garret over the shop, and seemed as delighted with the sale as if she had received money for useless stock. In the streets, the people inspected me curiously, as a stranger, but were always ready to go out of their way to guide me. The ground-floor being always open, all the features of domestic life and of mechanical labour are exposed to the public. The housewives, the masters, and apprentices, busy as they seem, manage to keep one eye disengaged, and no one passes before them without notice. Cooking, washing, sewing, tailoring, shoemaking, coopering, rope and basket making, succeed each other as one passes through the narrow streets. In the afternoon the mechanics frequently come forth, and set up their business in the open air, where they can now and then greet a country acquaintance, or a city friend, or sweetheart.

When I found that the ruins of San Domingo had been removed and a statue of Isabella II. erected on the Alameda, I began to suspect that the reign of old things was over in Majorca; a little observation of the people made this fact more evident. The island costume is no longer worn by the young men, even in the country; they have passed into a very comical transition state. Old men, mounted on lean asses or mules, still enter the gates of Palma with handkerchiefs tied over their shaven crowns, and long grey locks falling on their shoulders,—with short, loose jackets, shawls around their waists, and wide Turkish trousers gathered at the knees. Their gaunt brown legs are bare, and their feet protected by rude sandals. Tall, large boned, and stern of face, they hint both of vandal and of modern blood. The younger men are of inferior stature, and nearly all bow-legged. They have turned the flowing trousers into modern pantaloons, the legs of which are cut like the old fashioned gigot sleeves, very big and baggy at the top, and tied with a drawing-string round the waist. My first impression was that the men had got up in a great hurry and put on their trousers hinder end forward. It would be difficult to invent a costume more awkward and ungraceful than this.

In the city the young girls wear a large triangular piece of white or

black lace, which covers the hair, and tightly encloses the face, being fastened under the chin and the ends brought down to a point on the breast. Their almond-shaped eyes are large and fine, but there is very little positive beauty among them. Most of the old countrywomen are veritable hags, and their appearance is not improved by the broad-brimmed stove-pipe hats which they wear. Seated astride on their donkeys, between panniers of produce, they come in daily from the plains and mountains, and you encounter them on all the roads leading out of Palma. Few of the people speak any other language than the *Mallorquin*, a variety of the Catalan, which from the frequency of the terminations in *ch* and *tz*, constantly suggests the old Provençal literature. The word *vitch* (son) is both Celtic and Slavonic. Some Arabic terms are also retained, though fewer, I think, than in Andalusia.

In the afternoon I walked out into the country. The wall on the land side, which is very high and massive, is pierced by five massive gates. The dry moat, both wide and deep, is spanned by a wooden bridge, after crossing which one has the choice of a dozen highways all scantily shaded with rows of ragged mulberry trees, glaring white in the sun and deep in impalpable dry dust. But the sea breeze blows freshening across the parched land; shadows of light clouds cool the arid mountains in the distance; the olives roll into silver undulations; a palm, in full, rejoicing plumage rustles over your head; and the huge spatulate leaves of a banana in the nearest garden twist and split into fringes. There is no languor in the air, no sleep in the deluge of sunshine, the landscape is active with signs of work and travel. Wheat, wine, olives, and oranges, are produced not only side by side, but from the same fields, and the painfully thorough system of cultivation leaves not a rood of the soil unused.

I had chosen at random a road which led me west toward the nearest mountains, and in the course of an hour I found myself at the entrance of a valley. Solitary farm houses, each as massive as the tower of a fortress and of the colour of sunburnt gold, studded the heights, overlooking the long slopes of almond orchards. I looked about for water, in order to make a sketch of the scene, but the bed of the brook was as dry as the highway. The nearest house toward the plain had a splendid sentinel palm beside the door,—a dream of Egypt which beckoned and drew me towards it so that I could not resist. Over the wall of the garden the orange trees lifted their mounds of impenetrable foliage and the blossoms of the pomegranate sprinkled against such a background were like coals of fire. The fig-bearing cactus grew about the house in clumps twenty feet high, covered with pale yellow flowers. The building was large and roomy, with a court-yard around which ran a shaded gallery. The farmer who was issuing therefrom as I approached wore the shawl and Turkish trousers of the old generation, while his two sons, reaping in the adjoining wheatfields were hideous in the modern *gigots*. Although I was manifestly an intruder, the old man greeted me respectfully and passed on to his work. Three boys tended a drove of black hogs in



the stubble, and some women were so industriously weeding and hoeing in the field beyond, that they scarcely stopped to cast a glance upon the stranger. There was a grateful air of peace, order, and contentment about the place; no one seemed to be suspicious, or even surprised, when I seated myself upon a low wall, and watched the labourers.

The knoll upon which the farm house stood sloped down gently into the broad rich plain of Palma, extending many a league to the eastward. Its endless orchards made a dim horizon line, over which rose the solitary double-headed mountain of Felaxicke, and the tops of some peaks near Arta. The city wall was visible on my right, and beyond it a bright area of the Mediterranean. The features of the landscape, in fact, were so simple, that I fear I cannot make its charm evident to the reader. Looking over the nearer fields, I observed two peculiarities of Majorca, upon which depends much of the prosperity of the island. The wheat is certainly, as it is claimed to be, the finest of any Mediterranean land. Its large perfect grains furnish a flour of such fine quality that the whole produce of the island is sent to Spain for the pastry and confectionery of the cities, while the Majorcans import a cheap inferior kind in its place. Their fortune depends on their abstinence from the good things which Providence has given them. Their pork is greatly superior to that of Spain, and it leaves them in like manner; their best wines are now bought up by speculators and exported for the fabrication of sherry; and their oil, which might be the finest in the world, is so injured by imperfect methods of preservation, that it might pass for the worst. These things, however, give them no annoyance. Southern races are sometimes indolent but rarely epicurean in their habits; it is the northern man who sighs for his flesh pots.

I walked forward between the fields toward another road, and came upon a tract which had just been ploughed and planted for a new crop. The soil was ridged in a labyrinthine pattern, which appeared to have been drawn with square and rule. But more remarkable than this was the difference of level, so slight that the eye could not possibly detect it, by which the slender irrigating streams were conducted to every square foot of the field, without a drop being needlessly wasted. The system is an inheritance from the Moors, who were the best natural engineers the world has ever known. Water is scarce in Majorca, and thus every spring, stream, rain-fall,—even the dew of heaven,—is utilized. Channels of masonry, often covered, to prevent evaporation, descend from the mountains, branch into narrower veins, and visit every farm on the plain, whatever may be its level. Where these are not sufficient, the rains are added to the reservoir, or a string of buckets, turned by a mule, lifts the water from a well. But it is in the economy of distributing water to the fields that the most marvellous skill is exhibited. The grade of the surface must not only be preserved, but the subtle tricky spirit of water so delicately understood and humoured that the streams shall traverse the greatest amount of soil with the least waste or wear. In this respect, the most skilful application of science could not surpass the achievements of the Majorca farmers.

Working my way homewards through the tangled streets, I was struck with the universal wailing which filled the city. All the tailors, shoemakers, and basket makers at work in the open air were singing, rarely in measured strains, but with wild, irregular, lamentable cries, exactly in the manner of the Arabs. Sometimes the song was antiphonal, flung back and forth from the farthest visible corners of the street; and then it became a contest of lungs, kept up for an hour at a time. While breakfasting, I had heard, as I supposed, a *miserere*, chanted by a procession of monks, and wondered when the doleful strains would cease. I now saw that they came from the mouths of some cheerful coopers, who were heading barrels a little farther down the street. The Majorcans still have their troubadours, who are hired by languishing lovers to improvise strains of longing or reproach under the windows of the fair, and perhaps the latter may listen with delight; but I know of no place where the Enraged Musician would so soon become insane. The isle is full of noises, and a Caliban might say that they hurt not; for me they murdered sleep, both at midnight and at dawn.

I had decided to devote my second day to an excursion to the mountain paradise of Valdemosa, and sallied forth early to seek the means of conveyance. Up to this time I had been worried—tortured, I may say, without exaggeration,—by desperate efforts to recover the Spanish tongue, which I had not spoken for fourteen years. I still had the sense of possessing it, but in some old drawer of memory, the lock of which had rusted and would not obey the key. Like Mrs. Dombey, I felt as if there were Spanish words somewhere in the room, but I could not positively say I had them,—a sensation which, as everybody knows, is far worse than absolute ignorance. I had taken a carriage for Valdemosa, after a long talk with the proprietor, a most agreeable fellow, when I suddenly stopped and exclaimed to myself, "You are talking Spanish! Did you know it?" It was even so; as much of the language as I ever knew was suddenly and unaccountably restored to me. On my return to the "Four Nations" I was still further surprised to find myself repeating songs, without the failure of a line or word, which I had learned from a Mexican as a school-boy, and had not thought of for twenty years. The unused drawer had somehow been unlocked or broken open while I slept.

Valdemosa is about twelve miles north of Palma, in the heart of the only mountain-chain of the island, which forms its western, or rather north-western, coast. The average altitude of these mountains will not exceed three thousand feet, but the broken abrupt character of their outlines, and the naked glare of their immense precipitous walls, give them that intrinsic grandeur which does not depend on measurement. In their geological formation they resemble the Pyrenees; the rocks are of that *pulombino*, or dove-coloured limestone so common in Sicily and the Grecian Islands,—pale bluish-grey, taking a soft orange tint on the faces most exposed to the weather. Rising directly from the sea on the west, they cease almost as suddenly on the land side, leaving all the central portion of the island a plain, slightly inclined towards

the south-east, where occasional peaks or irregular groups of hills interrupt its monotony.

In due time my team made its appearance,—an omnibus of basket work, with a canvas cover, drawn by two horses. It had space enough for twelve persons, yet was the smallest vehicle I could discover. There appears to be nothing between it and the two-wheeled cart of the peasant, which on a pinch carries six or eight. For an hour and a half we traversed the teeming plain, between stacks of wheat worthy to be laid on the altar at Eleusis, carob trees, with their dark varnished foliage, almond orchards bending under the weight of their green nuts, and the country houses with their garden clumps, of orange cactus and palm. As we drew near the base of the mountains, olive trees of great size and luxuriance covered the earth with a fine sprinkle of shade. Their gnarled and twisted trunks, a thousand years old, were frequently split into three or four distinct and separate trees, which in the process assumes forms so marvellously human in their distortion, that I could scarcely believe them to be accidental. Doré never drew anything so weird and grotesque. Here were two club-headed individuals fighting, with interlocked knees, convulsed shoulders, and fists full of each other's hair; yonder a bully was threatening attack, three cowards running away from him with such speed that they were tumbling over one another's heels. In one place a horrible dragon was devouring a squirming shapeless animal; in another, a drunken man, with whirling arms and tangled feet, was pitching forward upon his face. The living wood in Dante was tame beside these astonishing trees.

We now entered a wild ravine, where, nevertheless, the mountain sides, sheer and savage as they were, had succumbed to the rule of man, and nourished an olive or carob tree on every corner of the earth between the rocks. The road was built along the edge of the deep, dry bed of a winter stream, so narrow that a single arch carried it from side to side, as the windings of the glen compelled. After climbing thus for a mile in the shadows of threatening masses of rocks an amphitheatre of gardens enframed by the spurs of two grand arid mountains opened before us. The bed of the valley was filled with vines and orchards, beyond which rose long terraces dark with orange and citron trees, obelisks of cypress, and magnificent groups of palm, with the long white front and shade balconies of a hacienda between. Far up, on a higher plateau between the peaks, I saw the church-tower of Valdemosa. The sides of the mountains were terraced with almost incredible labour, walls massive as the rock itself being raised to a height of thirty feet to gain a shelf of soil two or three yards in breadth. Where the olive and carob ceased, box and inlet took possession of the inaccessible points carrying up the long waves of vegetation until their foam-sprinkles of silver-grey faded out among the highest clefts. The natural channels of rocks were straightened and made to converge at the base, so that not a wandering cloud could bathe the wild growths of the summits without being caught and hurried into some tank below. The wilderness was forced by pure

toil to become a Paradise; and each stubborn feature, which toil could not subdue, now takes its place as a contrast and an ornament in the picture. Verily, there is nothing in Italy so beautiful as Valdemosa.

Lest I should be thought extravagant in my delight, let me give you some words of George Sand, which I have read. "I have never seen," she says, "anything so bright, and at the same time so melancholy, as these perspectives where the ilex, the carob, pine, olive, poplar, and cypress mingle their various hues in the hollows of the mountain,—abysses of verdure, where the torrent precipitates its course under mounds of sumptuous richness and an inimitable grace. While you hear the sound of the sea on the northern coast, you perceive it only as a faint shining line beyond the sinking mountains of boldest outline, fringed with superb trees; and beyond these by rounded hills which the setting sun gilds with burning colours, where the eye distinguishes, a league away, the microscopic profile of trees, fine as the antennæ of butterflies, black and clear as pencil drawings of Indian-ink on a ground of sparkling gold. It is one of those landscapes which oppress you, because they leave nothing to be desired, nothing to be imagined. Nature has here created that which the poet and the painter behold in their dreams. An immense *ensemble*, infinite details, inexhaustible variety, blended forms, sharp contours, dim vanishing depths,—are all present, and art can suggest nothing further.

Majorca is one of the most beautiful countries of the world for the painter, and one of the least known. It is a green Helvetia under the sky of Calabria, with the solemnity and silence of the Orient.

The village of Valdemosa is a picturesque rambling place, brown with age, and buried in the foliage of fig and orange trees. The highest part of the narrow plateau where it stands is crowned by the church. A monastery of the Trappists (Cartusa), now deserted. My coachman drove under the open roof of a *venta*, and began to unharass the horses. The family, who were dining at a table so low that they seemed to be sitting on the floor, gave me the customary invitation to join them, and when I asked for a glass of wine, brought me one which held nearly a quart. I could not long turn my back on the bright wonderful landscape without; so, taking books and colours, I entered the lonely cloisters of the monastery. Followed, first by one small boy, I had a retinue of at least fifteen children before I had completed the tour of the church, court-yard, and the long-drawn shady corridors of the silent monks, and when I took my seat on the stones at the foot of the towers, with the very scene described by George Sand before my eyes, a number of older persons were added to the group. A woman brought me a chair, and the children then planted themselves in a dense row before me, while I attempted to sketch under such difficulties as I had never known before. Precisely because I am no artist, it makes me nervous to be watched while drawing; and the remarks of the young men on this occasion were not calculated to give me courage.

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## THE TRANSIT OF VENUS ACROSS THE SUN'S DISC.

THE readers of the *Nautical* are of course aware that the above rare phenomenon in our Solar System will take place in December, 1874, on which some very interesting papers and discussions have taken place among astronomers, as appears in their monthly notices of December last. Such notice of this event being taken so long beforehand must be attributed to the desirableness of ample time for decision as to the measures to be taken for observing it, and their necessary preparation, so that every thing may be timely prepared, and the observers at their stations ready for work at the time appointed. And as it occurs about two in the morning, it will not be visible to us. The Astronomical Department has already shewn their readiness to do their important part, and as the selection of a place or places of observation in the southern hemisphere is an important point, especially by an account of the scarceness of *terra firma* there, the medium of the Geographical Society has been very properly solicited by Staff-Commander Davis, for discussion of this important subject. As this gentleman accompanied Sir James Ross in his Antarctic voyage, his pretensions not only to experience in ice navigation, but also to some knowledge of the shores of the Antarctic continent, named by Sir James, South Victoria, entitles his opinion to respect. Indeed, it would perhaps be no easy matter to find another officer of Commander Davis's qualifications as an astronomer as well as a seaman and officer, with his knowledge of the locality in question on which he proposes to place a small knot of observers. We shall therefore preserve the following account of his paper for the present, and may return hereafter, as occasion may seem to require, to the discussion of this very interesting subject.

The paper, as implied by its title, was divided into two parts. The first gave a historical account of the expeditions to the South Pole, the writer remarking on the singularity of the fact that whilst the names of the Arctic explorers were familiar as household words, comparatively few were acquainted with the expeditions to the Southern Pole or even the names of the discoverers in the Antarctic regions. Having briefly referred to the early expeditions of the Dutch, French, Americans, and English, the author of the paper gave a detailed and most interesting narrative of the expeditions of Captain Ross in the *Erebus* and *Terror*, which commenced on the 12th November, 1840, and of which Commander Davis himself formed part.

With regard to the transit of Venus the great interest attached to it was owing to the data it afforded for determining the exact distance between the sun and the earth, with regard to which there was an estimated error of 4,000,000 miles. As this transit took place only once or twice in a century, it was necessary for astronomical purposes to make hay whilst the sun shines. Within a comparatively brief space of time there would be two transits of Venus—one in 1874 and another in 1882. The value to be attached to them was the chief

object of the paper. There were two methods by which this transit could be effectually observed: 1st, by absolute longitudes from four stations—one for acceleration by parallax, and one for retardation for the ingress and the same for the egress; for as the planet took about six hours to cross the sun's disc, there were but few places from which both the ingress and egress could be observed, having due consideration for parallactic value. For this method accurate determinations of longitude were necessary—an error of one second of time would vitiate the result. The other method was by observing both ingress and egress from two stations, one for acceleration by parallax, the other for retardation; and the great advantage of this method over the other was that the accurate determination of longitude was not an absolute necessity. In the transit of Venus in 1882, one such station was to be found in the North American colonies, and the other could only be obtained in a high southern latitude.

The *modus operandi* suggested was that two vessels with steam—the hydraulic propeller being suggested as the mode of applying the steam power—should leave England about June, 1881, having on board the equipment, in men and instruments, for observing the transit by the two methods—that was for three observers. On the passage out, two of these parties, with their instruments, should be landed on the selected stations for the first method, and at once commence moon observations for the determination of the longitude, whilst the vessels proceeded to Hobarton, from which place they would finally start for the south in the latter end of December, and striking out in longitude about 165 degrees east, endeavour to make Balleny Island, and keeping well to the westward, take the pack and work through it towards South Victoria, and then skirt the coast along as closely as possible; for although in the *Erebus* and *Terror* they did not see the appearance of a harbour, it was just possible a different season might open one up.

Proceeding south past Possession Island, in latitude  $73\frac{1}{2}$ , and failing to find a harbour or suitable place of landing on that island, to return at once to Possession Island, and land the party, with huts, instruments, and provisions for two years, the ships returning north, and after refitting, separate and proceed to the two stations at which parties had been landed on the passage out, and, after supplying the wants of the observatories, and seeing all in a fair training for observing the transit, leave, and repair to Hobarton to prepare for proceeding again south, and starting about the same time as the previous year, pick up the southern party, and on the return the other parties, and return to England. The author suggested the necessity of educating the men who were to take part in this expedition by sending them, in the first instance, to the Arctic regions, as he confessed that when he went first to the Antarctic he should have preferred to return back if he had had the choice. In conclusion, the author dwelt on the necessity of England maintaining her glory as a pioneer of discovery.

At the conclusion of the paper an interesting discussion took place, in which Captain Richards, Hydrographer to the Admiralty; Captain

Sherard Osborne, Admiral Collinson, Sir L. M'Clintock, General Lefroy, Sir E. Belcher, Dr. Rae, and Admiral Ommaney, took part. The value of the expedition was approved of by all the speakers, and it was admitted that the men to take part in it were to be found now as they ever had been, if the expedition had only the countenance of the country and the Government. The Hydrographer to the Admiralty remarked that the expedition would no doubt have the best wishes and countenance of the Admiralty; but that the country must work on the Government to provide the means of carrying it out.

A vote of thanks to Commander Davis for his paper, which was admitted to be full of interest, was agreed to.

The foregoing is the first outline of the proposed proceedings, of which the uncertainty of carrying them out from the old obstacles of weather and ice will be a sufficient source of solicitude. However, fortune may favour the brave as it often has done, and we cannot but believe that as in the time of Cook, England will be found as ready as she was then to perform her part before the world.

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#### THE ALABAMA QUESTION.

THE following view of this subject given by the correspondent of the *Daily News* is so important that we must take the liberty of borrowing it. Where is the boasted settlement now? Although we do not despair of seeing it replaced by another instead of lying *en cache*.

“NEW YORK, Feb. 11.

“The Clarendon-Johnson Convention, for the settlement of the Alabama case, you may set down as null and void. There is not the least likelihood that the Senate will even discuss it. It has been passed over to the new Administration, and the new Administration will none of it. General Grant expressed himself very freely in private when in this city last week, as entirely opposed to it, and he will undoubtedly discard it; and there is little chance of anything similar being negotiated during his term. His feelings on the subject are, I am sure, shared by the great majority of the community, both in and out of public life. Even the private sufferers from the Confederate cruisers do not press for a settlement. One of the largest, Mr. Upton, of Boston, who is, it is said, £10,000 out of pocket by the operations of the Alabama, headed a petition last week to the Senate against the adoption of the treaty. Nevertheless, there has been very little public denunciation of it. The strongest attack on it I have seen appeared in an article in the *Tribune*; most other papers dismiss it in a few words, as if it were not worth discussing, and as far as one can get at the state of feeling in private, it is dead against it. If you ask what those who oppose the Convention propose in its stead—I reply, nothing. The plain truth is, that people do not want to have the Alabama controversy closed. There was some inclination to bring it

to a peaceable conclusion a year ago. Had Mr. Adams remained in England, I think he could have settled it with popular approval. But Mr. Johnson's course as I have repeatedly told you, and as you will now see for yourselves, has not only made it impossible for any treaty negotiated by him to secure approval here, but has revived the declining animosity against England. Every one of his 'conciliatory' after-dinner speeches has acted on Americans like a slap in the face. People have been positively infuriated by the accounts he has been giving of their love of England and Englishmen, of their readiness to forgive and forget, and of their desire to be good friends again with such people as Messrs. Roebuck and Laird. In fact a more irritating application than his soft words it would be hard to think of. They, therefore, desire two things. One is to have Mr. Johnson at once recalled; and the other is to have the Alabama controversy left open indefinitely. The more bitter and hot-headed of the public would like it to be as it is till England is involved in a war, and then let slip plenty of Alabamas and Shenandoahs; have the District-Attorney fall sick; the Secretary of State leave the British Minister to furnish evidence amounting to proof, and the collector of the port let the cruisers run down the bay, and so on, repeating the English performance as nearly as circumstances will permit. The soberer and more intelligent, while acknowledging that an attempt at retaliation would be unwise as well as undignified, acknowledge that, whatever the ultimate settlement of the quarrel may be, they feel too sore to settle it now, and think it would be humiliating for the United States to rush into reconciliation, after all that has happened, particularly after the English refused to arbitrate two years ago, the minute England holds out her hand. Nearly every mail brings some bit of news which aggravates the prevailing irritation. The last, for instance, that the Glasgow Chamber of Commerce had been addressing Mr. Johnson in favour of free trade, has only damaged Mr. Johnson and free trade both. Feeling as they do about him, people are more and more provoked at finding him received and appealed to as a person whose opinions or recommendations are likely to produce any effect on American policy on any subject; and I know of nothing so likely to postpone indefinitely the final triumph of free trade principles in this country as their persistent's presentation by Englishmen. The most effective argument now used by Protectionists consists in speaking of free trade as "British free trade"—it is worth more than all the figures and fallacies they can accumulate.

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#### ROYAL NATIONAL LIFEBOAT INSTITUTION.

OUR lifeboats have as usual been busy. At Teignmouth, Padstow, Southwold, Lowestoft, Great Yarmouth, Cadgwith, Hayling Island, Ramsgate, these have together saved 84 lives in the late gales.

At the meeting of the Institution that took place on Thursday, the



4th day of February, rewards amounting to £131 were distributed. The silver medal of the Institution, a copy of its vote inscribed on vellum, and £3 were voted to Mr. James Crowden, chief officer of coast-guard at Muchals, N.B. ; £2 to Robert Fife; and £1 each to five other men, for putting off in a coble, at much risk, and saving, in a gale of wind, four men from the schooner *Kinross*, of Aberdeen, which was wrecked off Sostraw fishing creek on the 21st ult. An effort had been previously made to communicate with the vessel by means of a rope, in which service Mr. Crowden received a severe contusion on the knee, being struck by a heavy sea and dashed amongst the rocks. Various other rewards were likewise granted to the crews of different shore-boats for saving life from wrecks on our coasts.

It was reported that the London coal merchants had presented £703 10s. to the Society to defray the cost of the Southwold large sailing lifeboat, which was hereafter to be named the London Coal Exchange, and that the merchants of Mincing Lane had given £1000 to meet the whole expense of the Montrose lifeboat and its support. The ladies of Edinburgh had also, by means of a bazaar and collections, raised £1,000 towards the expense of the permanent maintenance of the Edinburgh Workmen's lifeboat, stationed at Port Logan, N.B. A grand bazaar and fêtes are to be held at Exeter during Easter next, in aid of the support of the twenty-two lifeboats on the coasts of Devon and Cornwall. Articles for sale at the bazaar are earnestly invited, and will be thankfully received by the hon. secretaries at Exeter.

It was decided to found a lifeboat station as soon as practicable on the Isle of Arran, N.B. Legacies amounting altogether to £600, less duty, etc., had been received from the executors of the late Mrs. and Miss Warner, of Lyncombe, Somerset. A first instalment of £100 had likewise been made to the Society on account of the legacy of the late C. W. Jones, Esq., of Norwich. The late J. S. Beckett, Esq., of Tormoham, Devon, had bequeathed £600 to pay for a lifeboat to be named the Gertrude. Payments amounting to £1,700 were ordered to be made on various lifeboat establishments.

New lifeboats had been sent during the past month to Weymouth, and to Lynmouth, North Devon. Demonstrations had taken place at each station to welcome the arrival and first launch of the lifeboats, that at Weymouth being of a most imposing character. A public meeting was recently held at Penzance to present the rewards granted to the crews of that lifeboat, and others, for their gallant services, on the 6th of December last, in saving eight men from the wrecked barque *North Britain*, of Southampton. The meeting, which was held in St. John's Hall, was one of the largest and most enthusiastic ever held in that town. A report was read from Captain D. Robertson, R.N., the assistant inspector of lifeboats to the institution, on his recent visits to different lifeboat stations.

It was stated that the Duke of Northumberland, president of the Institution, had expressed his readiness to take the chair at the annual meeting to be held at the London Tavern on the 9th of March.

The proceedings then terminated.

## RACE ACROSS THE ATLANTIC BETWEEN MAIL STEAMERS.

THE following account of a race from New York between steamers of the Cunard and Inman lines will interest our readers.

The great ocean race between the Inman and the Cunard Royal Mail steamers *City of Paris* and *Russia* has at last taken place, and against the most sanguine anticipations the Inman steamer *City of Paris* has beaten the *Russia*, one of the strongest and fastest ships of the Cunard fleet. Of the two vessels the *Russia* is the largest, being 370 feet long, 700 horse power, and 3,100 tons register, whilst the *City of Paris* is about 365 feet in length over all, and 2,875 tons register. The race between the two steamers may be looked upon as purely accidental, from this reason: the Inman Company's steamer *City of Baltimore*, on her last outward voyage, encountered fearful weather in the Atlantic, and on her arrival at New York it was found that it would be impossible to despatch her back to Liverpool at her proper date of sailing without giving her a slight overhauling. The *City of Paris*, which sailed several days after the *Baltimore*, arrived at New York one day later, and she was at once turned round, her cargo taken out as fast as possible, and that which was destined for the *City of Baltimore* put on board. This was completed early on the morning of the 10th of February, as the vessel had to leave New York on the afternoon of the same day. In the meantime the *Russia* was "all square," and ready to leave her moorings on the same tide as her rival. The excitement both on board and ashore was very great; crowds having congregated about Castle-garden to see the vessels start, and watch which of them dropped his "Blue Peter" first.

At 1.35 on the afternoon of the 10th, the *City of Paris*, Captain James Kennedy, left the dock; at 3.20 she passed Sandy Hook, and at 3.45 she discharged the pilot. The wind at the time was N.E., and at noon the next day the distance ran was 242 miles, with light airs and a heavy head sea.

The *Russia*, which left New York at 2.40 p.m. on the same day as the *City of Paris*, was now in company, both Captain Kennedy and Captain Cook "putting in" all they knew as regards the speed of each ship.

On the 12th, the distance ran was 282 miles, with a fresh breeze, a head sea, and the *Russia* again in company. From the 12th to the 13th the wind was baffling, commencing with a fresh breeze and terminating with light unsteady airs. The *Russia* was still in sight bowling along at a rapid rate, and apparently doing all she could to overhaul the Inman steamer. Up to noon on the 14th there was a moderate breeze, and a most exciting race had been carried on, as the respective logs of both ships show the distance ran on the 14th, to be 323 miles. The *Russia* again was in company. On the 15th, the *Russia* and the *City of Paris* parted company—the former vessel leaving the latter astern about eight miles. A fresh gale, however, sprang up, and the *City of Paris* was put on the wind, and as her sailing under canvas is

proverbial, Captain Kennedy, though never afterwards sighting the *Russia*, overhauled her. On that day the distance ran was 342 miles. On the 16th, the wind being N.N.W., and blowing a fresh gale, the distance ran was 346 miles; on the 17th, the gale still continuing from the same quarter, the distance ran was 338 miles.

The gale on the 18th was from north by west, and the *City of Paris* ran 346 miles. On the 19th the Fastnet was reached, and the distance ran 222 miles. On the morning, at 4.50, signals were burnt off Browhead, and at five o'clock Fastnet was abeam; at 8.40 the Old Head of Kinsale was passed; and at 8.58 the *City of Paris* showed off Roche's Point, and landed mails and passengers. She left at 9.18 with full speed on, and at 10.1 Ballycotton light was passed. The weather at the time was cloudy, with light airs. At 4.10 p.m. Tuskar was sighted, and at 11.10 p.m. the South Stack was abeam, the weather still being very cloudy, and the wind light. At 3 a.m. the Bell Buoy was reached, and at 3.45 o'clock on Saturday morning, 20th, the *City of Paris* entered the Mersey.

From the log of the *Russia* it appears that she encountered similar weather to that experienced by the Inman steamer, and we may here state that she was much deeper in the water than the *City of Paris*, and therefore would be less capable of sailing so close on the wind as the *Paris*—a steamer which can spread a vast amount of canvas. Captain Cook left New York on the 10th, at 2.40 p.m., and on the 11th the *Russia* logged 245 miles with a moderate north-easterly breeze, and heavy easterly swells. On the 12th the wind continued fresh from the north, with a heavy sea, and the distance ran was 295 miles. On the 13th, with a moderate N.N.W. breeze, and an easterly swell, the distance ran was 316 miles. The *City of Paris* was this day sighted in lat. 43°10' N., long. 56°49' W. This is the only record in the *Russia's* log of the *City of Paris* having been signalled. Another remarkable feature in connection with the logs of both steamers is the fact that the *Russia* on the 14th had the wind from the west, whilst the *City of Paris* had it from the south to the south-west, and the distance ran by each steamer was 323 miles. The *Russia* was in lat. 45°13', long. 48°29', and the *City of Paris* in lat. 45°16', and long. 48°35' at the time. The 15th opened with a strong N.W. gale, with sudden squalls, and a very heavy sea, notwithstanding which the distance ran was 333 miles. On the 16th there was a hard N.W. gale, accompanied with a high topping sea and squalls. The distance ran was 329 miles. The weather during the 17th and 18th was equally stormy. The wind on the 17th was from N.N.W., and the distance made was 332 miles, whilst on the 18th, with a gale from the north, 349 miles were logged. On the 19th 310 miles were registered, and on the 20th 234 miles. Queenstown was made at 10.45 a.m. on the 19th, the north-west light ship at 3.30 a.m. on the 20th, and the Rock Light was passed at 4.20 on the same morning.

Notwithstanding the early hour of the arrival of each steamer, the landing stages and piers were occupied by a vast number of people eager to see which vessel entered the Mersey first. There prevailed,

however, a thick fog, and the steamers could only be identified by their lights and rockets as they passed up the river. The excitement, nevertheless, was very great, and both Captain Kennedy and Captain Cook were hailed with cheers as their respective vessels steamed slowly up the river. Nothing like it was ever seen on the Mersey at such an early hour; and had the *Russia* and the *City of Paris* come up during the day, there is no doubt but that a grand demonstration would have taken place, as the excitement during the last week has been very intense in Liverpool about the race, and a good deal of money has changed hands. Those who backed the Inman boat in the race from land to land of course win; but it is not so with those who backed her to win from New York to Liverpool, as the *Russia* beats the *City of Paris* by fifteen minutes, timed. The *Russia* did not consume so much coal this voyage as she has done on previous occasions. Possibly the prevalence of westerly winds will account for this.

## MAGNETIC VARIATION.

TABLE showing the Mean Monthly Westerly Declination of the Magnet, and the Mean Monthly Dip at the Royal Observatory, Greenwich, in the year 1868.

1868.	VARIATION, W.			DIP.
January ... ..	20°	15'	4"	67° 57' 39"
February ... ..	20	14	50	67 55 51
March... ..	20	15	23	67 57 15
April ... ..	20	15	54	67 56 49
May ... ..	20	15	16	67 57 45
June ... ..	20	13	20	67 56 23
July ... ..	20	12	47	67 55 50
August... ..	20	12	57	67 55 28
September ... ..	20	13	19	67 57 23
October ... ..	20	10	54	67 55 31
November ... ..	20	9	47	67 57 34
December ... ..	20	9	19	67 55 44

The mean variation has been found by the application of corrections (deduced from the reduction of the magnetic observations for the period 1848—57) to the means of readings taken at 9h. a.m., 1h., 3h., and 9h. p.m., daily.

G. B. AIRY,  
*Astronomer Royal.*

Royal Observatory,  
February 22nd, 1869.

A SAD accident is reported to have occurred near Lissa in the Adriatic, by which an Austrian frigate has been blown up. We have as yet seen no particulars, but it is stated that the precise number of lives lost by the catastrophe to the frigate *Radetsky*, was 342, including the captain and all the officers, except one midshipman. Only 23 persons were saved, 5 of whom are seriously injured, and 5 others slightly.

## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 109.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dis- cen- Mls	[Remarks, etc. Bearings Magnetic.]
9. Pontrieux River	France N.C.	43° 48' 3" N. 3° 5' 8" W.	F. F.	39 151	6 8	Est. 1st January, 1869. Lower Light. Red. See Note No. 9. Est. 1st January, 1869. Upper Light. Red. S.W. b W. 722 yards from Lower Light.
Cape Grisnez	... ..	See No. 9 c	... ..	... ..	...	Est. 15th February, 1869, with Electric apparatus.
10. Krishna Shoal	South Edge	15° 36' 5" N. 95° 35' E.	F.	55	13	Est. ? To avoid Baragon Flats and Krishna Shoal.
China Buckeor	Mouth of River	16° 17' N. 96° 13' E.	R.	?	18	Est. ? Greatest brilliancy every minute.
Rangoon R. Entrance	East side	16° 29' N. 96° 27' 5" E.	F.	?	?	Est. ? Near Eastern Grove.
11. Cape Recife	Port Elizabeth	Algoa Bay	... ..	... ..	... ..	Est. 1st December, 1868. See No. 11 a and b.
12. Falmouth Harbour	Wreck to	be removed	... ..	... ..	... ..	...
13. Portsmouth	Clarence Pier	... ..	... ..	... ..	... ..	See Notice No. 13.

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

No. 9.—Note a.—The upper light, visible through an arc of 12 degrees on each side of S.W. b W.  $\frac{1}{4}$  W. The illuminating apparatus is catoptric. The tower is square, built of stone, painted white, and 15 feet high.

Note b.—*Directions.*—On entering the river keep the flashing lights on Roche de la Croix and Bodic heights in line, and when near the first named, keep a little to the south-west, in order to get the two red lights in line, which so kept will lead to the anchorage of Coat-Mer.

Note c.—*Alteration of Light, Cape Grisnez.*—From the 15th day of February, 1869, an alteration will be effected in the light on Cape Grisnez; namely:—The illuminating apparatus will be superseded by an electric one; the light will be revolving, as at present, but the flashes will be of longer duration and of greater intensity. The fixed light will continue to be visible during the eclipses when approaching the coast. If by any cause the electric apparatus should get out of order, the apparatus at present in use will be immediately used.

[The Bearing is Magnetic. Variation 21° Westerly in 1869.]

No. 11.—Note a.—*Alteration in Cape Recife Light.*—A ray of red light would be shown from the lighthouse between the bearings N. 39° E. and N. 12° E. as a guide to mariners on approaching Roman Rock.

Note b.—*Directions.*—Vessels bound for Algoa Bay, after passing Cape Recife, should not come within the red ray of Cape Recife light until the Harbour light on the hill (which, when first seen, is red) is seen bearing N. W., but as the southern limit of the Harbour light passes only 2 cables northward of Roman Rock, it is recommended that a course for the anchorage should not be shaped until the red ray from the Harbour light is passed and the white light seen bearing N. W. by W.

[Variation 29½° Westerly in 1869.]

No. 13.—Notice is hereby given, that two red lights have been placed at the ends of Clarence Esplanade pier, at Southsea, to facilitate the approach of steam vessels at night. The lights are exhibited from the ordinary Gas Lamps at each corner of the pier.

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### THE SUEZ CANAL.

It would appear by the following that good hopes may yet be entertained of the Suez Canal, according to the *Express* :—

Exactly a month ago it was stated in the *Express* that Mr. J. R. M'Clean, M.P., C.E., Mr. George Elliot, M.P., and Mr. Abernethy, C.E., had made a careful examination of the Suez Canal; and had arrived at the conclusion that the two seas would be united before the end of the present year. The opinion of those gentlemen is now confirmed by another eminent engineer, Mr. John Fowler, and the long description published in this morning's *Times* gives very clearly the reasons for expecting that M. de Lesseps' undertaking will be soon brought to a satisfactory conclusion. The English verdict, as pronounced by the late Robert Stephenson, has to be rescinded; and that which he pronounced impossible is now described as certain to come to pass. It is, however, assumed, and with great show of reason, that Mr. Stephenson's opinions are "founded upon the scheme and cost as then proposed, and not upon a mere abstract proposition without reference to time, cost, or dimensions." Be this as it may, the communication between sea and sea is all but accomplished. The works we are now told are "simple in character, and in a soil favourable to execution;" and the next points of public interest are the maintenance of the Canal and the difficulties to be overcome with respect to it.

These seem to be divided into four principal heads. First, the prevention of the Nile deposit choking up Port Said, and this is to be met by dredging, and the solidifying and extension of breakwaters. Secondly, the prevention of the sand of the desert from blowing into the Canal in such quantities as to dry it up in places. Trees and shrubs planted on the slopes, and an artificial oasis formed by the fresh

water Canal are the means relied on by the company to provide this. The third and fourth dangers enumerated are the destructive action of passing vessels upon the shifting banks; and the abstraction of the waters of the little lakes by evaporation during the summer months. Stone pitching will form an effectual safeguard to the banks, and the currents created by the difference between the tidal ranges of the Mediterranean and the Red Sea are partly counted on for water supply. It seems clear that none of the foregoing difficulties are insuperable or even disheartening, so far as the speedy opening and maintenance of the Suez Canal is concerned. The question of commercial success depends, however, according to Mr. Fowler, upon "whether new sailing vessels, with adequate auxiliary steam power specially adapted to the Canal and the Red Sea, will be constructed so as to divert the large traffic now being carried round the Cape." But it is not necessary to speculate upon the probability of this before warmly congratulating M. de Lesseps upon the phase upon which his great work has entered. His faith and zeal were unfaltering, even when the professional world had been most doubtful as to his ultimate success; and it is but fair to acknowledge now how well founded some of his convictions had been. It is unnecessary to say that any further information respecting the Canal will be warmly welcomed by the public.

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#### COMPETENCE TO COMMAND.

THE following curious query and answer is taken from the *Shipping and Mercantile Gazette* of January 29th, 1869:—

"LAME SHIPMASTER.—Sir,—A Shipmaster holding a certificate of competency loses his leg, and is in consequence obliged to wear one of cork. Can he still be considered a "competent" Shipmaster?—Yours, etc., "A CONSTANT READER.

"Whitehaven, Jan. 23rd, 1869.

"[In the Royal Navy the loss of a leg would disqualify a Captain from active service at sea, as distinguished from shore, according to usage. But as the master of a merchant vessel is not required to go aloft, or to undergo physical exertion, we consider he is fully competent to navigate a ship, and also to command her, if his cork leg enables him to walk about.—ED. S. & M. G.]"

In the opinion of the Editor it would seem that the Captain of a merchant ship has a much easier time of it than a (*post*) Captain in the navy, which we are inclined to doubt—the cook in a ship of war is the only officer privileged to occupy his *post* with one leg. How the commander of a merchant ship could keep his sea legs on board with one of them on shore seems a difficult problem to solve, but in the event of shipwreck he would certainly have an advantage over his

crew, as by putting his cork leg under his arms he could keep his head above water.

DONATI.

[We have received the foregoing from a correspondent for insertion and opinion in the *Nautical*, and (with joking apart as the saying is) may briefly remark in regard to the navy, we do not know whether the loss of a leg in these days disqualifies an officer for command. But it was not so formerly, as in the case of the late Sir James Gordon, we believe he commanded a frigate after losing his leg. In point of the certificate of competency above mentioned, such certificate can have nothing to do with it, as it applies only to *scientific* and not to *physical* qualification. And of the two commanders, that a man-of-war or a merchant ship, the former has never occasion to go aloft, having officers enough to do that for him. But not so the latter, who may not have an officer he can trust to do so. Therefore if such a loss should disqualify, it is more likely to affect the latter than the former.—ED.]

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#### NOTES OF NOVELTIES.

THE cruise of H.M.S. *Galatea*, Captain H.R.H. the Duke of Edinburgh, is reported thus from the Cape, under date, Simons Bay, 5th January.

The *Galatea*, screw frigate, under the command of his Royal Highness the Duke of Edinburgh, arrived here on the afternoon of Christmas-day, having had a pleasant passage from England. She reached St. Vincent on Sunday, November 22nd, and, after coaling, resumed her voyage under sail on the following day, crossing the line in eighteen degrees west longitude on the 1st December. Although royalty was on board, Neptune, as usual, claimed that the traditions of her Majesty's service should be remembered and respected, and his Royal Highness yielded to the claim, on understanding that those on board who declined to submit to the operation of "shaving," should be permitted to remain on the lower deck. As Neptune and his assistants warmed to their work, however, the conditions of the agreement were forgotten, and the rule laid down by the god of the sea was made imperative, to the dismay of the victims and the intense delight of those who had already passed through the ordeal. There was, as usual, plenty of frolic and fun, but the ceremony, which is ushered in with so much grotesque gravity and carried out with such a rollicking disregard of social distinction and professional rank, passed off good-humouredly.

A very agreeable method of relieving the voyage of its tedium has been adopted on board the ship by the establishment of several musical parties. One, got up by the sergeant of the band, is under the direction of Lord Beresford; another has been formed amongst the officers. Then, in the fore-castle, there is a nigger party who gave



their first entertainment on Christmas Eve, and made a very creditable débüt. And lastly, there are the boys and the schoolmaster, whose efforts are more directly encouraged by his Royal Highness, who accompanies them upon his harmonium in their rehearsal of the chants and tunes to be sung on the following Sunday. There was a time when indulgences of this kind were regarded as being utterly incompatible with the discipline indispensable to the efficiency of a man-of-war, but the race of zealous old gentlemen who entertained those gloomy apprehensions is fast dying away, and the admirable discipline on board Her Majesty's ship *Galatea* will add an additional incentive to the extinction of the race. The general programme of the royal movements at this port has been published in the Cape papers, but there are one or two incidents which do not appear to have been mentioned. On the 27th of December the captains of the men-of-war in harbour were entertained at luncheon by his Royal Highness, who in the evening was the guest of Captain Purvis, of the screw corvette *Racoon*.

Amongst other amusements the officers of the *Galatea* have played two cricket matches, one against the officers of the squadron, and one against the 99th Regiment. The former they won, with seven wickets to go down; the latter they lost by one run. On the 1st of January, a ball was given by the officers of the 99th Regiment, at which some of the officers of the *Galatea* were present, and on the following Monday (the 4th) a ball was given by the Commodore of the squadron. On the last named day there was a grand review of the crews of the *Seringapatam*, *Galatea*, *Forte*, *Racoon*, and *Peterel*, which were under the command of his Royal Highness.

The *Galatea* is appointed to leave Simon's Bay to-day, January 5th, and is expected to reach Swan River about the 27th. According to present arrangements she will remain there about a fortnight, and then proceed to Adelaide.—*Daily News*.

THE account in our last number of the voyage from Panama to New Zealand and Australia, in which an interesting description appears of Raca island leads us to regret much that it is likely for the present to be the last, as we find in the following notification:—

The Post Office authorities notify that no mails will be made up on the 1st of February for Sydney and New Zealand, *via* Panama, in consequence of the Panama, New Zealand, and Australian Royal Mail Company not being able to furnish a steamer. It is understood that the service of the company has ceased, owing to various difficulties, chiefly in the colonies.

THE severe gales and high tides which have been common during the winter have produced observations such as the following, recording more shipping disasters.

Every ship that has reached Liverpool for several days reports having experienced fearful weather, both before and after entering the Channel. Captain Woodward, of the ship *Zimé*, which has arrived at

Liverpool from New Orleans, reports having experienced a hurricane off the Azores on January 29th, accompanied with vivid lightning, hail, and terrific squalls, the sea breaking heavily over the ship from all quarters. On the 8th February, an abandoned vessel was passed. The hull was painted black, and white on quarter rails. The masts were gone, together with the jibboom. She appeared to be a new North American built vessel, and was directly in the way of homeward bound vessels. Captain Murray, of the *John Phillips*, from Jamaica, reports that on 20th January, in lat. 36°56', he experienced very severe weather from W.S.W., causing the ship to lay-to, the vessel at the time running under reefed foresail and two reefed topsails, taking large quantities of water over all. The main topsail was split, jolly boat's spars carried away, longboat's lashings burst, and at midnight the spanker was blown out of the bolt ropes, and forespencer and mainsail out of the gaskets—splitting them to pieces. The two foretop-mast staysails were carried away, as were also the bulwarks, stanchions, etc.

Captain Mayhew, of the ship *Dreadnought*, from San Francisco, states that at 11 a.m., on February 4th, in lat. 38°31' N., lon. 18°32' W., the vessel shipped a tremendous sea, which carried away topgallant bulwarks, and everything moveable on deck, the ship laying-to very bad. The decks were constantly flooded with water, and the cargo shifting very much, which rendered it impossible to run the ship. Captain Scanon, of the ship *Teesdale*, from Buenos Ayres, reports that on the 28th ultimo, in lat. 35° N., lon. 37° W., he passed a vessel dismasted and waterlogged. The *Teesdale* stood close past her, and hailed, but got no answer. She was painted black, with a white house aft, and apparently American built. On the 30th January, in lat. 37° N., long. 35° W., a terrific gale sprang up from the north-west with a mountainous sea. The topsails and all the head gear were carried away, the head rails started, and a part of the starboard bulwarks smashed, and everything moveable on deck washed overboard. From January 30th, up to the entrance of the Channel encountered nothing but westerly gales and thick weather. A letter received from Trinidad de Cuba states that the *Caledonia*, which had arrived there from Liverpool, on December 16th, had sustained such damage during its passage that the repairs would cost 6,000 dols., nearly the value of the ship.

WITH such weather our papers announce the remarkable circumstance of sea gulls being found in Hyde Park. The *Daily News* of the 17th February, states that for the last few days about half a dozen sea gulls of the smaller species, about half as large again as the ordinary pigeon, have taken up their quarters on the Serpentine, in Hyde Park, having been driven inland, probably owing to the severe gales which have recently visited the coast. These unaccustomed visitors have attracted much attention from the frequenters of the park, and large numbers of persons have been daily to see them. They are remarkably tame, and if anything is thrown on the water they fly towards it without hesitation. They appear to experience little difficulty in finding food in the

small fish in the Serpentine. They have now been there for more than a week. In former years the larger species of sea gull has visited the Serpentine for a day or two, but never so many at a time as those that are now there, nor have they stayed for so long a period.

THE following distressing event is another of the effects of this severe weather. A very sad accident has occurred to a boat's crew connected with the Calf Rock lighthouse, near Dursey Island, on the coast of Ireland. It appears that Mr. Thomas O'Reilly, the head lightkeeper, and three other men, had been at the lighthouse for the past month. On the day named he signalled to the main land for the lightkeeper on shore (Richard Howard) to relieve him. Howard at once assembled the boat's crew (six men), and proceeded with them to the Calf Rock, but on arriving there found it impossible to land, in consequence of the heavy sea. However, he was able to exchange mail bags, and, after remaining for about twenty minutes left without the slightest apprehension of danger. The poor fellows gave their comrades on the rock one parting cheer, and then pulled for the main land, which they were destined never to reach. All appears to have gone on well with them till within a mile of Dursey Island, when the entire crew were seen to have lost their oars. When the boat got amongst the breakers, Mr. O'Reilly instantly hoisted the flag on the lighthouse, in the hope of attracting the notice of the people on Dursey Island, but unfortunately without effect. For upwards of an hour the boat was seen drifting with the tide. A sudden shower obscured the view for about half an hour, and then it was discovered that the boat was floating bottom upwards. Of course every soul in the boat has been drowned. The whole party were married men, most of them with large families depending solely on them for support, and one poor fellow had only been married a few days.

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CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY,  
in February, 1869.—Sold by the Agent, J. D. Potter, 31, Poultry, and  
11, King Street, Tower Hill. London.

2159 DEM = 0·5 Scotland, West Coast, Firth of Clyde, Loch Fyne, etc.  
Captain Robinson, R.N., Additions to 1868. 2s. 6d.

2593 DEM = 5·0 North Sea, Ameland to Jade River including the  
Ems River with views. Prussian, etc., Surveys, 1866. 2s. 6d.

1875 DEM = 0·5 North Sea, Elbe River to Hamburg with entrances  
of the Jade Weser, and Eider Rivers, with views. Prussian, etc., Surveys  
to 1868. 2s. 6d.

562  $\frac{DE}{2}m$  = 14·0 Spain, East Coast, Valencia Port, Spanish Survey,  
1867. 1s.

EDWARD DUNSTERVILLE, *Commander, R.N.*  
*Hydrographic Office, Admiralty, 20th February, 1869.*

THE  
NAUTICAL MAGAZINE

AND

NAVAL CHRONICLE.

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APRIL, 1869.

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ABOUT THE GULF OF MEXICO.

*Sisal Roads: The Alacranes: Mouths of the Mississippi, New Orleans.*

THE following remarks, contributing additions and corrections of the second part of the *Derrotero de las Antillas*,\* on places in the Gulf of Mexico, are due to the zealous exertions of Don Josa de Ricart Z. Giralt, second officer of the *Bella Juana*, for the improvement of navigation.

*Sisal Roads.*—Being only fourteen hours at the anchorage off Sisal, the remarks offered are but few.

The sea coast near the settlement is low and covered with mangroves, but when approached from the northward or eastward is distinguished by the whitish appearance of the houses and the light-tower.

From seaward, about three miles in a direction N. 45° E. from point Piedras, the furthest land to be seen is this point, which is low like the rest of the coast to the settlement of Sisal, there being nothing higher than a large collection of sugar canes, and is thence conspicuous, and only surpassed in height by the light-tower. Some white buildings are also remarkable, in the midst of which stands the Castle of Sisal, a strong square building, from whence rises the light-tower, with a flagstaff on its eastern side. The shore to the east of this tower is formed by a beach, with a multitude of boats lying dry on it, some of them being hauled up for various purposes.

Fowls and vegetables as well as other provisions are to be had at Sisal on moderate terms.

The holding ground consists of a thin layer of oozy sand over rock, by which, according to the pilots, the anchors have difficulty in hold-

\* Established in 1865.

ing, although when they do so it is difficult to recover them, and this is seldom done without leaving the arm of one behind at least, or the anchor itself. In my own case, notwithstanding the *Bella Juana* was a vessel of 800 tons, I rode out the severest water spout I ever experienced at sea with an anchor of 15 cwt.; but on heaving it up we found the shank bent.

*Passage from Sisal to New Orleans.*—The passage from thence to New Orleans requires the utmost caution, never omitting at any time either the lead or astronomical observation, with the view of avoiding being set by the current on one of the numerous reefs or rocks in the sound of Campeche, as well as to prevent being caught, in consequence of fog, on the low coast of Louisiana. Great attention should be paid to appearances of the sky and meteorological observations, since in winter every navigator knows very well the liability of northers occurring in the gulf of great severity (treated on in the *Derrotero* of 1865), nor in the summer season should observations of the barometer be neglected, for in this part it is that hurricanes curve in general towards the New Bahama Channel, and follow the course of the Gulf stream. In the summer season heavy squalls of wind and rain are also found, which appear to be harmless, as they are formed in light ash-coloured clouds, which regularly come from N.E. But it is necessary, especially about sunrise or when the moon is getting up, to be prepared for these squalls, for it is on these occasions that sheets and clewlines should be smartly attended to.

*The Alacranes.*—From the masthead, at the distance of four miles, I have seen the western edge of this reef, which at its southern side has three dry rocks and from thence a ridge of cays, which on a fine day may be seen by their white appearance, but present no prospect of verdure. The water about them, with its greenish colour, shows the shoal off cays and rocks, and besides, to the northward of the former lines of breakers were quite evident.

*Pilots and Steam-tugs of the Mississippi.*—On the 20th September, 1867, about half an hour before noon, when I was preparing for the observation, without any ideas of New Orleans or pilots, for we were thirty-two miles from the Mouths of the Mississippi, a pilot boat suddenly appeared on our port beam making for us, and by noon she had sent a pilot on board. Although the *Derrotero* says that pilots go out as far as fifteen miles, yet for many years, in consequence of competition between different companies, steam tugs ran out as far as forty miles or more from the mouths of that river. The pilot boats are from fifty to eighty tons, and carry a number on their jib on the starboard side and on the port side of the mainsail, besides wearing a blue flag. The steam tugs are similar to those of the Havana, but have much more power.

*Making the Mouths of the Mississippi.*—On the same day in the evening we made the land forming the S.W. and southern mouths of the Mississippi, the latter being even lower than the cays on the northern side of Cuba, and which have no other marks for recognition than the lantern, and a multitude of staves or poles standing upright, which

serve as marks for the pilots. These are met with above two miles from the S.W. pass, in which a pilot boat is always to be found at anchor. In making for this at night, or in bad weather, it will be found very desirable to use frequently a thermometer with the lead-line, with a view to ascertain by temperature whether the vessel is in the waters of the Mississippi or is yet at a distance from the Mouths.

*Navigation of the Mississippi.*—The hamlet of La Baliza is formed of fifteen to twenty wooden houses, occupied by pilots. Opposite to them stands a building containing the telegraph station, from whence an officer boards every vessel proceeding upwards, who makes note of her name, etc., and offers to send any despatches from her to New Orleans. At the same time also an officer from the Custom House comes alongside, who requires two copies of the ship's manifest, armament, etc., taking care that the captain of the vessel has a third. In this part of the pass, between the lantern and the village above-mentioned, it is customary for the vessels to drop an anchor, in order to comply with these formalities, or for the tugs to replenish their coal. But it is well to observe that these matters are not to detain the vessel beyond thirty-six hours, for at the expiration of this time the captain of a ship has a right to proceed up the river with a steamer of any company.

As far as the heads of the passes, the banks are the same as described in the *Derrotero*, that is overflowed and overgrown with reeds and rushes, an occasional miserable hut of some fisherman being seen, and an abundance of alligators. But from this upward, as far as the city, appearances undergo a complete change. Very soon large, imposing establishments are seen surrounded by wide fields of sugar plantations, occasional groves, and even to the banks of the river, lines of shady trees covered with what is called the Spanish beard. This Spanish beard, which, about Cape San Antonio, in Cuba, is called Guajaca (a kind of cocoa, is a parasite which grows in the bark of the trees, and is composed of a collection of thin filaments of dark grey colour, divided into a multitude of flexible ramifications which, like strings, cling to the branches). It is used for the stuffing of mattresses and such things, for which it is dried and prepared by getting rid of the husk, and preserving the interior which is dark coloured, and is hard and rigid, and thence it is called vegetable crinoline.

The lighthouse of the mouths of the river is not lofty, but higher than any wooden edifice of the kind, and of a rectangular form. It stands on the S.W. side of the southern pass. About twenty miles above the position of this light, a vessel receives a visit of the health officer, made by a single individual.

On arriving at New Orleans the steam tug leaves the vessel she has towed up the river secured to the wharf to which she was destined. These wharves are of wood, and extend round the city. Each wharf is marked by a number and letter, and is provided with four or six pollards by which to secure vessels. Vessels at the wharves are lashed alongside of each other to three or four abreast, so that the cargo of the outside one has to pass over the others which are between

it and the wharf, for which it is necessary to form a road by planks. The discharging of cargo is done by a system of tackles hooked to ring-bolts and worked by horses.

Reckoning all colours, New Orleans has a population of 300,000, and a large commerce in cotton, resin, and staves, etc. The streets are wide, and generally have two rows of trees, which, with gardens before the houses give it as cheerful and pleasing an aspect by day, as it is gloomy and doleful by night. The streets are provided with tramways in large numbers, similar to those of Havana, which, after traversing streets in all directions, unite in Canal Street, which divides the city in halves, and contains the principal stores and best shops, the Custom House and Post Office being the chief buildings, and a large square of stone which is deficient of taste, as well as any order of architecture.

Provisions are to be had, but of rather high price. Water is generally obtained from the river, but before taking it into the tanks (or casks on board), it is necessary to let it stand for two or three days that the matter in suspension may subside.

In navigating the river it is necessary to have both anchors ready for dropping, as sometimes eddies and currents are met with, against which no tug can manage the vessel in tow. The bottom in the river and in the S.W. pass is so loose and soft, that in some places the tugs pass through it in a foot to a foot-and-a-half less water than they really draw.

Dock accommodation is plentiful at New Orleans, but, to my views, whoever requires any work or careening done to his vessel, unless it be indispensable, had better wait until he returns home, where not only he will not pay three-and-a-half dollars per day in cash, but will have reason to be much better satisfied with the work which he gets done. And I make this remark, not only from the opinion of others, but from my own experience, having seen it on board.

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## THE DISCOVERY, LIMITS, AND CHANNELS OF THE RIVER PLATA :

*An Historical and Statistical outline of its principal Districts.*

*By Senores Lobo y Rindevats.*

THE River Plata is the name assigned to that large estuary of South America, which lying between the parallels of 35° and 36°, reaches many leagues to the N.W., mingling its waters with those large bodies of it that form the Parana and Uruguay.

The discovery of the Plata was made by three Spanish Caravels, the first European vessels which entered its waters, having been fitted out at Lepe by the Spanish Government. They sailed from Lepe on the 8th of October, 1515, under the command of the chief pilot, Juan Diaz de Solis, who was directed to continue the Spanish discoveries

which already, for seven years, had been going on under Vicente Yanez Pinzon, with the view of finding a passage to the East Indies by the West.

They doubled Cape *Consolacion*, now called St. Augustine; touching at several places of the southern continent. They passed close by three islets which they named *Lobos*, and entered a harbour which Solis called *Candelaria*, in 35° S. latitude; and which most probably is the present port of Maldonado.

Here they took possession of the country for the crown of Castile, and afterwards penetrated through a large opening into the land, calling it by the name of *Mar dulce* (fresh water sea), on account of the small portion of salt in the water. And being well within it, having named it after *Solis*, he himself passed up it in a lateen caravel, keeping along the nearest shore and anchored not far from an island which was called by him *Martin Garcia* after the pilot.

Solis being desirous of communicating with some natives on shore, who were making signs to them, landed from his boat, and finding they had got out of the way, he was attacked by a party of Indians, who were awaiting him in ambush, by whom he himself and two officers, with six others were slain. The exact position of the place, and even the day on which this occurred is not known; but it is supposed to have occurred in the bay of San Francisco, near to point Carretas, or Martin Chico. The crew of the caravel returning to the vessel after relating the transaction which they were unable to prevent, returned with her to the others of the expedition; and all left the river to proceed to Spain under the command of Francisco de Torres, one of the Royal pilots, and brother-in-law of Solis. On their way back they visited the bay of *Innocentes*, where they had already been and traded with the natives; and after suffering much, besides losing one of the caravels, they arrived in a Spanish port on the 4th of September, 1516.

The exploration of the river, thus fatal to Solis, remained neglected until 1525, when the Spanish Emperor Charles the Fifth employed Sebastian Cabot to find his way to the Moluccas islands, by a route to the South of the Continent of South America. This expedition, under Cabot sailed from Seville on the 3rd of April, 1526, consisting of four ships; they entered on their way out the port of *Patos*, near the isle of St. Catherine, where they met, among the Indians, two Spanish deserters, who had belonged to the expedition of Solis; and in February, 1527, they arrived in what is now known as the river *Plata*. In consequence of wanting provisions the crews of the vessels mutinied, and the intended voyage to the Moluccas was given up. Cabot proceeded up the river visiting an island, which he named *San Gabriel*, and which he concluded had been known to Solis, but he thus named it because he saw it on the 18th of March. Here he anchored his ships, and from here he followed up his explorations into the interior with his boats and a small caravel. He first entered the Uruguay, and afterwards the Parana, built a couple of forts and took possession of the territory. He afterwards proceeded up the Paraguay to near a



place now called Villeta, where he had a severe battle with the natives ; and having found among those whom he had slain, some small silver articles he gave the name of the River *Plata* to the whole river, which was soon extended to the Parana, and subsequently to the large estuary of which we are treating ; this name prevailing over that of *Solis*, which it had first received.

Cabot's expedition resulted in the discovery of the Uruguay, the Parana and the Paraguay. The two forts which he had built, one at the mouth of the San Salvador, the name he gave it, and the other *Santi Espiritu* at the mouth of the *Carcaranal*, were destroyed by the Indians after Cabot left the river to return to Spain ; where he arrived about the end of July, 1530. The 110 men which he reported as left by him in *Santi Espiritu* for the defence of the castle, were finally dispersed ; some being killed by Indians, and some being saved by a vessel from where they had sought refuge on the Brazil coast.

Another expedition, that of Don Pedro de Mendoza, was the first well appointed enterprize, and one that was well carried out ; although for its commander it had so disastrous a termination. Mendoza, on whom the title of Governor of the River Plata had been bestowed, sailed from the port of San Lucar de Barrameda on the 1st of September, 1534, with the object of colonizing the borders of the Estuary and adjacent parts of the interior. He had fourteen large vessels under his orders, carrying 2,650 men, made up of crews, soldiers, and colonists, and seventy-two horses ; which, according to some, were the origin of the present race of horses in that country.

The expedition arrived in the beginning of 1535 at the port of San Gabriel, now Colonia, explored the opposite coast, and having come to a small river, the Rio Chuelo of the present day (capable of receiving moderate sized vessels), chose a piece of ground of moderate elevation on its northern bank as a site on which to build a large city ; and on the 2nd of February of the same year planned its outline, which in his day was to be the queen of the future colony. He gave to it the name of *Nuestra Senora de Buenas Aires*, in reference to the healthy air of the country.

While Mendoza was thus establishing himself on the western borders of the river de la Plata, his delegates, Ayolas and Talazar, were exploring the interior to settle on its borders, and hence commenced the navigation of the estuary and its affluents.

Many years passed, however, before the true configuration of this great estuary was ascertained. At the commencement, navigators passed most carefully along its northern shore, which is high, and abounds with capital points for recognition, and afterwards they ventured on passing south of the English bank ; but down to the middle of last century, there was no knowledge approaching at all to accuracy of River Plata.

As to its entrance, it is only from the commencement of the present century that its limits have become known, thanks to the close explorations of the Spanish pilot, Don Andres de Oyarvide, from 1803 to 1805.

*Limits and Extent of the Plata.*—Possessing as we now do such excellent charts of this extensive estuary, constructed from the works of Malaspina Oyarvide, Fitz-Roy, Barral, Sullivan, and others, it is an easy task now to define its limits and mark its extent.

With respect to the southern side of its entrance, there is complete agreement in the position of point Rasa of Cape San Antonio. But this is not the case with the northern side, the limit of which is so improperly assigned to Cape Santa Maria.

A glance at the chart is quite sufficient to convince any one with Senor Aguirre, that the true northern point of the river's mouth is Point del Este, and not Cape Santa Maria, which is nothing more than a sandy point of the sea shore, a continuation in fact of the coast of Maldonado. And, however, it might be, that the general range of the mountains to the north of Maldonado, the watersheds of streams flowing seaward, terminates near the bay of Maldonado, and at the same time point Este is the best defined and most southern point, these have convinced Spanish geographers that what should be considered as the mouth of the River Plata is the space included between point Rasa of Cape San Antonio to the south, and point Este to the north, near Maldonado, which bears from the former N. 47° E. distant 122 miles.

If the saltness of the water be the principle by which the river was to be distinguished from the sea, the mouths of the Plata might even be considered to the westward of the above limits. But this condition varies very much indeed according to the high or low state of the river, the salt water extending sometimes up as far as the broken grounds of Santa Lucia, and the fresh water reaching down so far to the eastward as sometimes to be drinkable even in the harbour of Monte Video.

Considering then the limits of the mouth of the river to be the points Este and Rasa of San Antonio, we shall have fifty-five leagues for its length, and as its mean breadth eighteen leagues, the approximate bearing of which points from each other is S.E. by E. and N.W. by N.

Following the principal sinuosities of both shores, on the northern side from point Este to Point Gorda (mouth of the Uruguay) the distance is 235 miles, and that of the southern shore 216 from Point Rasa to the mouth of the Guazu. The surface waters would approximate to 9,245 square miles, and the navigable depth of its chief part would be about six fathoms, in the second part two and three quarters, and one and three quarters in the third up to the mouth of the Parana.

*The Basin of the River Plata.*—The great mass of the fresh water discharged into the South Atlantic from the estuary of the Plata, is collected in an extensive basin, estimated by M. M. De Moussy as having an area of 170,000 square leagues. But this is considered as much exaggerated, and we take it at 114,000 square leagues as being nearer the mark. But the number of rivers large and small that are contributory to it is enormous. They in fact flow from the great

arteries of the South American Continent, consisting of the Parana and Uruguay with their tributary waters to the great river under consideration.

The above named gentleman, Senor de Aguirre, calculates that these two great arteries discharge every hour 53,956,808,840 cubic feet of water into the ocean. And in order to arrive at this prodigious volume of water, he took for a base a breadth of eight leagues, as being that nearly of the Plata between Buenos Ayres and Colonia, with a mean depth of four and a half fathoms, and a current of a mile and a half per hour.

The valley of the Plata is separated from that of the Amazons by a tortuous mountain ridge of not very high elevation. It reaches to Patagonia, from which it is separated by the River Negro, and in its northern region includes the Gran Chaco, the Pampas occupying its central portion.

So vast a territory, constantly watered by a multitude of streams, and gifted with a genial clime, is constantly covered with a rich pasture, which supports millions of cattle and animals of all kinds; whilst its population in 1861 scarcely exceeded 3,250,000 souls. From this may be inferred the enormous field of prosperity offered to European emigration. A fertile country, blessed with a healthy climate, producing riches in abundance from the cereals to the sugar cane.

The States which divide this rich territory between them are five, viz., the Republic of Uruguay, a large part of the Empire of Brazil, the Republic of Paraguay, the Argentine Confederation, composed of fourteen provinces scattered from south to north, and a part of Bolivia, or rather, Upper Peru. But those obtaining most advantage from the navigation of the Plata are the States of Uruguay and Buenos Ayres, which occupy its two shores. We shall treat of these in the sequel.

From its entrance to the mouths of the Uruguay and Parana, the Plata diminishes in breadth in a manner by which we may class it in two divisions of nearly equal length. The first extends from Point Este and Rasa of San Antonio, as far as the river San Lucia to the north, and Point Piedrus to the south, in which division the water is brackish. The second extends from these points to the deltas of the Parana and Uruguay, in which the water is generally fresh.

*Channel of the River Plata.*—The bottom of this great river inclines downwards from the confluence of its two large tributaries to the sea, and between the banks the bottom is composed of mud, and sometimes of rotten ground, as far as the meridian of Monte Video.

Beyond this meridian the change in the nature of the bottom becomes evident, but yet almost insensible, as the ocean is approached; for the mud becomes gradually mingled with sand, and the sand becomes purer as the sea is approached, often having small shells in it, and these with gravel. It is only on the northern bank and about the Bay of Sanboronbon that the mud prevails.

Rotten ground is principally found on the south shore from the

neighbourhood of Saladillo as far as the Bay of Barragan. It is a strip of hard ground, and lines this part of the coast, carrying but a small depth, and varying in breadth from two to three leagues.

East of the meridian of Monte Video the bottom may be considered as composed of sand, shells and sand, and gravel and sand, formed by an immense bank, the highest part of which shows itself as that called the English bank.

It may be truly said that the bed of the River Plata is strewn with rocks and shoals, extending above thirty leagues to the eastward of its mouth; and that from thence inwards they impede the course of the river so much as to render its navigation to Buenos Ayres difficult for vessels over a certain draft of water.

We will consider these several obstacles to navigation, observing by the way that the water is tinted by the ground out as far as twenty leagues from the mouth of river.

*Islands.*—These are only met with on the left or northern bank of the river, while on the opposite side not even the sign of a stone is to be found. The principal islands are Lobos, to the S.E. of Maldonado; Gorriti, in the same bay; Flores, to the east of Monte Video; San Gabriel, Lopez, and Farallon, off Colonia; the Hornos to the north of them, and Martin Garcia, near the delta of the Parana. Besides these islands there are several rocks and reefs at different distances from the shore.

*Banks.*—The principal, as well as the most dangerous of them is the English Bank; others consist of the Archimedes, Medusa, Chico, Nuevo, Great and Little Ortiz, Palmas, etc.

To reach Maldonado there is no bank to be passed; but it is different when going to Monte Video, when there is the English Bank, the Archimedes, and the Medusa to be avoided, the two last if taking the channel south of them. But a vessel bound to Buenos Ayres must pass all of them.

A vessel bound to Monte Video generally does not take a pilot, but those going to Buenos Ayres are very seldom without one.

Formerly, before the ports of Monte Video and Maldonado were established, navigators generally followed the southern shore, or perhaps rather the channel south of the English Bank, and those intended for Buenos Ayres remained in the port of Barragan.

The terror of these dangerous banks with which the mouth and the course of the River Plata was supposed to be infested, in former days was so great among navigators that it was called the "Infernal Region for Sailors," and good seamen were as capable of navigating it as those who paid insurance from Europe to its mouth, its safe navigation being considered as miraculous. There were but few merchant vessels visiting it in those days, and only in times of war was a vessel of the State seen there. Those which frequented it most were Spanish merchant vessels, but none of these were over 500 tons.

It is never navigated by night, vessels always then lying at anchor. The passage is made by going east of the Ortiz Bank; but in proportion as the river became better known and ports were formed in it, the

fear of the banks gradually subsided, and navigation improved much, being assisted by good charts and plans, and a good pilot service being also organized.

If we are to believe the authors of works, as well as the seamen of last century, the strength of the wind in the storms of the river is by no means so great as it used to be, nor are they so frequent as in the early days of its discovery.

Now that the ports of Maldonado and Monte Video are formed and the north shore of the river is better known, the navigation of the southern shore is entirely abandoned, not only on account of the scarcity of good points for recognition, but also from the want of places of shelter, as well as from the exact configuration of the shore being ill-known as well as the true position of Cape San Antonio. And again from the necessity of avoiding English cruisers off Cape Santa Maria and Maldonado, Spanish vessels were obliged to pass south of the English Bank keeping within the parallels of  $35\frac{1}{2}^{\circ}$  and  $36^{\circ}$  until they had reached the meridian of the mount of Monte Video, and then making for that port, or continuing up to Barragan or Buenos Ayres, according to the size of the vessel.

Once this navigation and leaving the river being safely established, it has continued, and with the erection of so many lighthouses it is now generally entered by the northern shore.

*Anchorage.*—Wherever the lead shows mud the anchor may be dropped, care being taken notwithstanding to try for it, at a fair distance from the banks, so that the ship may not drag her anchor and get on one of them.

With southerly winds, the anchorages on the southern shore are best, and should be preferred to those of the northern.

Large frigates may enter as far as the roads of Monte Video, and vessels drawing eighteen to nineteen feet may go up fearlessly as far as Buenos Ayres and the Hornos islands.

The anchorages in which shelter from N.W., N.E., E., and S.E. winds will be found are Hornos, Monte Video, and Maldonado, although this last named port does not always afford it in a S.E. wind, but which she will have under Gorriti. The Bay of Barragan and the roads of Buenos Ayres afford shelter from S.W. winds.

Small vessels can also anchor off Cape Santa Maria, in the mouth of the river San Lucia, and at Colonia on the northern shore. In the river Tuyu near Cape San Antonio, at Saladillo, and in the interior of Barragan Bay, in the Riachuelo, near Buenos Ayres on the south shore.

At Maldonado the anchorage is in six to eight fathoms.

In Monte Video roads in four and three-quarters to six fathoms.

In the port of Monte Video in two and a half to three fathoms.

In the roads of Barragan in three and a half to three and three-fifths fathoms.

Off the City in two to three fathoms.

At the anchorages on the northern shore vessels lie with an open hawse to S.W., and in others with open hawse to S.E.

Of all these anchorages and ports the best holding ground is that of Maldonado, the bottom there being ooze covered with sand. In the others the bottom is mud, in which the anchors will not hold when it blows hard.

*Lights.*—The lighting of the river Plata for navigation has been considerably improved of late years. At present there are five lights established on shore, and five floating lights. The former are on Point Este, the isle of Flores,\* the mount of Monte Video, Colonia, and the Custom house tower of Buenos Ayres.

The floating lights indicate the following dangers :—the English bank, the Panela rock, the Nuevo rock, the Chico bank, and the roads of Buenos Ayres.

We will endeavour to give the particulars of these lights hereafter, admitting for the present that they very much facilitate the entrance and navigation of the river Plata.

The details of these lights will appear in their respective places.

*Buoys and Beacons.*—These are variously established in the river Plata; although an entire dependence must not be placed in their being *at their stations*, as the strength of the wind or current often displaces them; or perhaps what is still worse, displaces even the site which they occupied, for instead then of marking the danger they are intended to shew, they run a ship on it. The beacon on San Jose at Monte Video, and those which indicate the channel of Martin Garcia, and the bell-buoy on the English bank have disappeared in a gale, and are not yet replaced.

*Shores of the river Plata.*—The two margins of this majestic river are of such an opposite nature, that they deserve some notice.

The southern shore comprehended between Point Rasa, of Cape Antonio, and the delta of the Parana is the limit here of the vast Steppe of South America, known by the name of Pampa. It is composed of land, so low and uniform that at first appearance, it would be taken for alluvium, and it is necessary to be very near it to distinguish where the water ends, and the land begins; for at the distance of seven or eight miles, some islet is all there is to mark it, which islet may be covered with trees only growing in certain parts.

In the whole length of the south shore of the river of 216 miles, as we have already observed, there is not a single island nor the vestige of a stone, unless it has been carried there by the hand of man. It is bordered by an extensive strip of hardish ground, but of a nature which only seems to become harder in the vicinity of Point Piedras, where it is converted into a gritty substance or petrified marl, having partly the consistency of rock. This character of ground continues along the shore to the vicinity of Ensenada where it again begins to be soft.

\* The first light known in the river Plata, was that placed on the island of Flores, being the poop lantern of the Spanish frigate *Loreto* lost on point San Jose in May, 1792, which light was placed on the mount at Monte Video in 1798, from which time it has suffered from many a hard knock, until one was finally established on the island, and another on the mount.

The opposite shore, to the north is just the reverse of this, for it is almost all composed of primitive ground. High and rocky it is bound by a beach of stones, which vessels avoid and only approach in its bays where they find such a beach. For the Cordilleras which traverse the interior of Uruguay, throw out ramifications which reach down to the river shore, forming mostly sharp points, which continue out under water considerably. These are more remarkable and greater between point Este and the Toledo brook, in which space towards the interior there are high and very sharp points as well as deep ravines, giving birth to a multitude of minor streams. The shore is generally low and covered with vegetation.

The islands above alluded to might be considered as the produce of this rocky coast formed by the action of the waves; and even the summit of the English bank may be considered as the remains of an island; and there can be no doubt that the rocks of Panel, Pipas, Carretas, and many more have once formed an integral part of the Banda Oriental.

If we contemplate the geological formation of both sides of the river with the map before us, we might go back to antediluvian times, for it would be easy to reconstruct the South American continent in its original form. It would suffice to eliminate the Pampas, and the overflowed plains of Chaco, and we should see a vast extent of ground over which once lay the ocean, even to the base of the Cordilleras; and the high mountains of Uruguay and Brazil, with part of the continent converted into a crest of the loftiest mountains lying north and south from lat.  $20^{\circ}$ , diminishing in breadth as they approach the southern pole.

The map would show its figure, and the kind of ground which now forms this primitive alluvion called the Pampa and Chaco, reveals to us how the diluvian currents formed this high vast territory, which we have supposed; and how they continued invading the modern alluvions, the ocean bed continually trenching on the estuary of the Plata.

The delta of the Parana, and the deposits of the Uruguay advancing daily to the S.E., threaten on the other hand also to diminish this estuary; and who shall say that in future ages the bank now called Playa Honda may not form part of the Argentine continent, and which with the Banda Oriental may not form a narrow pass for the fluvial waters, descend those great arteries shown to us by our charts.

It may be observed that the increase of the delta of the Parana assumes the direction of the eastern coast, which being high and compact guides its waters to the ocean; that the opposite shore is that which is invaded, for from Buenos Ayres to the mouth of the Guazee is a labyrinth of low swampy islands of modern formation being in a state of transition into swampy plains; and that with the bank of Playa Honda which is in front of them (the depths on which are constantly decreasing), even now are forming the base of the future delta which threatens to reach to Colonia, and to shut up the port of Buenos Ayres, or at least convert it into a channel. And to such a degree may the estuary, we are now discussing, be reduced in future, that the

outlet of those powerful rivers may be transferred to Monte Video, where the delta itself will derive its main support from the English bank. It is the continual lessening of the depths in the roadstead of Buenos Ayres that justifies these conclusions; the daily appearance of new rocks, and the increase of the existing banks in the river, in our humble opinion continues forming the base of future sedimentary ground, which will go on increasing until that roadstead disappears from the map. This prediction need not be attributed to lucubrations, for there are many instances by which it is corroborated.

We may cite as corroborative instances the colossal deltas of the Mississippi, no less than the oldest of all, that of the Nile, or those of more secondary class such as the Danube and the Elbe. But sufficient indeed for us is the humble Po, which is no more than a thread of a stream compared with the Parana, and notwithstanding its bar it advances seventy yards annually into the sea, while that of the Rhone gains annually fifty yards; but without forsaking the Spanish peninsula we might take the delta of the Ebro, in the mouth of which we daily see new islands forming, which increase marvellously the extent of the marshy land and carry out the line of coast for many miles.

*The Narrows of the Plata.*—As we have seen in the foregoing, the mouth of this river is very wide. But the 122 miles of its entrance are reduced to 50 between points Espinillo and that of Piedras, bearing N. 40° E., and S. 40° W. of each other, and is the first narrowing of the river. The second is formed by point Lara and that of Alcantara of Colonia lying N. 30° E. and S. 30° W., dist. out from each other 20½ miles. From thence upwards the breadth diminishes considerably, so much indeed, that at the mouth of the Guazu it is only seven miles wide.

These narrowings divide the river naturally into three zones. In the first (the largest), it has a surface of water of 5,734 square miles, and contains the following banks:—The English bank, the Archimedes, the Medusa, the Narciso, and Rouen; and its depth varies from sixteen to three fathoms, the deepest part being towards the Maldonado shore.

The second zone which is included within the lines from points Piedras and Espinillo and those of Lara and Alcantara contains a superficies of 2621 miles, with a depth varying from four and a half to one and a half fathoms. The great and little Ortiz banks, Chico and Nuevo, are within this zone.

The third zone reduced to 800 square miles of surface and a very trifling depth, is almost entirely occupied by the great bank of Las Palmas, and the adjacent banks from Colonia, and the island of Martin Garcia, which constitute the bar of the powerful affluents of the Plata.

The fulness of the first zone, or perhaps the distance which it measures between the mouth of the river and first narrow is fifty-three miles; the distance of the second is sixty-six miles, and that of the third to the mouth of the Guazu is 47 miles.

*Line of Coast.*—The north shore from

Point Este to Monte Video	- N. 88° W.	80 miles	} 235 mls.
Monte Video to Colonia	- N. 72° W.	103 „	
Colonia to Point Gordo	- N. 38° W.	52 „	



## The south shore from

Point Rasa to Point Piedras	- - N. 10° W.	80 miles.
Point Piedras to Buenos Ayres	N. 20° & 50° W.	90 "
Buenos Ayres to Guazu	- - - N. 4° W.	46 "
Total	- - -	<u>216</u> "

So that the difference in length between the two shores is not great.

There are two States which contain the margin of the Plata. The northern one, which is naturally the most favoured, belongs to the eastern republic of Uruguay, and the southern one to the province of Buenos Ayres, the principal of the Argentine Republic.

We shall endeavour to describe each of these States with the intention of supplying the navigator with a general view of their importance, taking that of Uruguay first and commencing with its coast-line.

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 THE BYE-WAYS OF EUROPE—A VISIT TO THE BALEARIC ISLANDS.

*(Concluded from page 153.)*

WHEN I had roughly mapped out the sky with its few fleeting clouds, some one exclaimed, "He has finished the mountains, there they are," and they all crowded round me, saying, "yes, there are the mountains!" While I was really engaged in the mountains, there was a violent discussion as to what they might be; and I don't know how long it would have lasted, had I not turned to some cypresses nearer the foreground. Then a young man cried out, "Oh that's a cypress! I wonder if he will make them all,—how many are there? one, two, three, four, five,—yes, he makes five!" There was an immediate rush, shutting out earth and heaven from my sight, and they all cried in chorus, "one, two, three, four, five,—yes, he has made five!" "Cavaliers and ladies," I said, with solemn politeness, "have the goodness not to stand before me." "To be sure, Santa Maria! how do you think he can see?" yelled an old woman, and the children were hustled away. But I thereby lost the good will of those garlic-breathing and scratching imps, for very soon a shower of water drops fell upon my paper. Next a stick thrown from an upper window, dropped on my head, and more than once my elbow was intentionally joggled from behind. The older people, scolded and threatened, but young Majorca was evidently against me. I therefore made haste to finish my impotent mimicry of air and light, and get away from the curious crowd.

Behind the village there is a gleam of the sea near, yet at an unknown depth. As I threaded the walled lanes, seeking some point of view, a number of lusty young fellows, mounted on unsaddled mules,

passed me with a courteous greeting. On one side rose a grand pile of rock covered with ilex trees,—a bit of scenery so admirable, that I fell into a new temptation. I climbed a little knoll and looked around me. Far and near no children were to be seen; the portico of an unfinished house offered both shade and seclusion. I concealed myself behind a pillar, and went to work. For half an hour I was happy; then a round black head popped up over the garden wall, and a small brown form crept towards me, beckoned, and presently a new multitude had assembled. The noise they made provoked a sound of cursing from the interior of a stable adjoining the house. They only made a louder tumult in answer, the voice became more threatening, and at the end of five minutes the door burst open. An old man with wrath flashing from his eyes, came forth. The children took to their heels; I greeted the new-comer politely, but he hardly returned the salutation. He was a very fountain of curses, and now hurled stones with them after the fugitives. When they had all disappeared behind the walls, he went back to his den, grumbling and muttering. It was not five minutes, however, before the children were back again, as noisy as before; so, at the first thunder from the stable, I shut up my book and returned to the inn.

While the horses were being harnessed I tried to talk with an old native, who wore the island costume, and was as grim and grizzly as Ossawa Tomie Brown. A party of country people from the plains, who seemed to have come up to Valdemosa on a pleasure trip, clambered up into a two-wheeled cart drawn by one mule, and drove away. My old friend gave me the distances of various places, the state of the roads, and the quality of the wine; but he seemed to have no conception of the world outside the island. Indeed to a native of the village, whose fortune has simply placed him beyond the reach of want, what is the rest of the world? Around and before him spread out of its loveliest pictures he breathes its purest air; and he may enjoy its best luxuries, if he heeds or knows how to use them.

Up to this day the proper spice and flavour had been wanting. Palma had only interested me, but in Valdemosa I found the inspiration, the heat and play of vivid, keen sensation, which one (often somewhat unreasonably) expects from a new land. As my carriage descended, winding around the sides of the magnificent mountain amphitheatre, in the alternate shadows of palm and ilex, pine and olive, I looked back, clinging to every marvellous picture, and saying to myself, over and over again, "I have not come hither in vain." When the last shattered gate of the rock closed behind me, and the wood of insane olive trunks was passed, with what other eyes I looked upon the rich orchard plain, it had now become a part of one superb whole; as the background of my mountain view, it had caught a new glory, and still wore the bloom of the invisible sea.

In the evening I reached the "Four Nations," where I was needlessly invited to dinner by certain strangers, and dined alone, on meats cooked in rancid oil. When the cook had dished the last course, he came into a room adjoining the dining apartment, sat down

to a piano in his white cap, and played loud, long, and badly. The landlord had papered this room with illustrations from all the periodicals of Europe, dancing girls pointed their toes under Cardinal's hats, and bulls were baited before the shrine of saints. Mixed with the woodcuts were the landlord's own artistic productions, wonderful to behold. All the house was proud of this room, and with reason; for there is assuredly none other like it in the world. A notice in four languages, written with extraordinary flourishes, announced in the English division that travellers will find "comfortation and modest prices." The former advantage I discovered, consisted in the art of the landlord, the music and oil of the cook, and the attendance of a servant so distant that it was easier to serve myself than seek him; the latter may have been "modest" for Palma, but in any other place they would have been considered brazenly impertinent. I should therefore advise travellers to try the "Three Pigeons" in the same street rather than the "Four Nations."

The next day, under the guidance of my old friend, M. Saurens, I wandered for several hours through the streets, peeping into court-yards, looking over garden-walls, or idling under the trees of the Alameda. There are no pleasant suburban places of resort, such as are to be found in all other Spanish cities; the country commences on the other side of the moat. Three small cafés exist, but cannot be said to flourish, for I never saw but one table occupied. A theatre has been built, but is only open during the winter, of course. Some placards on the walls, however, announced that the national (that is, Majorcan) diversion of baiting bulls with dogs would be given in a few days.

The noblesse appear to be even haughtier than in Spain, perhaps on account of their greater poverty; and much more of the feudal spirit lingers among them, and gives character to society than on the main land. Each family has still a crowd of retainers, who perform a certain amount of service on the estates, and are thenceforth entitled to support. This custom is the reverse of profitable, but it keeps up an air of lordship, and is therefore retained. Late in the afternoon, when the new portion of the Alameda is in shadow, and swept by a delicious breeze from the sea, it begins to be frequented by the people, but I noticed that very few of the upper class made their appearance. So grave and sombre are these latter, that one would fancy them descended from the conquered Moors, rather than the Spanish conquerors.

M. Saurens is of the opinion that the architecture of Palma cannot be ascribed to an earlier period than the beginning of the sixteenth century. I am satisfied, however, that either many of the fragments of Moorish sculpture must have been used in the erection of the older buildings, or that certain peculiarities of Moorish art have been closely imitated. For instance, that Moorish combination of vast, heavy masses of masonry with the lightest and airiest style of ornament, which the Gothic sometimes attempts, but never with the same success, is here found at every step. I will borrow M. Saurens words, descriptive of the superior class of edifices, both because I can find no better

of my own, and because this very characteristic has been noticed by him. "Above the ground floor," he says, "there is only one storey and a low garret. The entrance is a semi-circular portal without ornament, but the number and dimensions of the stones, disposed in long radii give it a stately aspect. The grand halls of the main storey are lighted by windows divided by excessively slender columns, which are entirely Arabic in appearance. This character is so pronounced, that I was obliged to examine more than twenty houses constructed in the same manner, and to study all the details of their construction in order to assure myself that the windows had not actually been taken from those fairy Moresque palaces, of which the Alhambra is the only remaining specimen. Except in Majorca, I have nowhere seen columns which with a height of six feet have a diameter of only three inches. The fine grain of the marble of which they are made, as well as the delicacy of the capitals, led me to suppose them to be of Saracenic origin."

I was more impressed by the *Souja*, or Exchange, than any other building in Palma. It dates from the first half of the fifteenth century, when the kings of the island had built up a flourishing commerce, and expected to rival Genoa and Venice. Its walls once crowded with merchants and seamen, are now only opened for the Carnival balls and other festivals sanctioned by religion. It is a square edifice, with light Gothic towers at the corners, displaying little ornamental sculpture, but nevertheless a taste and symmetry in all its details, which are very rare in Spanish architecture. The interior is a single vast hall, with a groined roof, resting on six pillars of exquisite beauty. They are sixty feet high, and fluted spirally from top to bottom, like a twisted cord with a diameter of not more than two feet and a half. It is astonishing how the airy lightness and grace of these pillars relieve the immense masses of masonry, spare the bare walls the necessity of ornament, and make the ponderous roof light as a tent. There is here the trace of a law of which our modern architects seem to be ignorant. Large masses of masonry are always oppressive in their effect; they suggest pain and labour, and the Saracens even more than the Greeks seem to have discovered the necessity of introducing a sportive, fanciful element, which shall express the delight of the workman in his work.

In the afternoon I sallied forth from the western coast-gate, and found there, sloping to the shore, a village inhabited apparently by sailors and fishermen. The houses were of one storey, flat roofed, and brilliantly white-washed. Against the blue back-ground of the sea, with here and there the huge fronds of a palm rising from among them, they make a truly African picture. On the brown ridge above the village were fourteen huge windmills, nearly all in motion. I found a road leading along the brink of the over-hanging cliffs, towards the castle of Belver, whose brown mediæval turrets rose against a gathering thunder cloud. This fortress, built as a palace for the Kings of Majorca immediately after the expulsion of the Moors, is now a prison. It has a superb situation on the summit of a conical hill, covered with umbrella-pines. In one of its round, massive towers

Arago was imprisoned for two months in 1808. He was at the time employed in measuring an arc of the meridian, when news of Napoleon's violent measures in Spain reached Majorca. The ignorant populace immediately suspected the astronomer of being a spy and a political agent, and would have lynched him at once. Warned by a friend, he disguised himself as a sailor, escaped on board a boat in the harbour, and was then placed in Belver by the authorities in order to save his life. He afterwards succeeded in reaching Algiers, where he was seized by order of the Dey, and made to work as a slave. Few men of science have known so much of the romance of life.

I had a long walk to Belver, but I was rewarded by a grand view of the Bay of Palma, the city, and all the southern extremity of the island. I endeavoured to get into the fields, to seek other points of view, but they were surrounded by such lofty walls that I fancied the owners of the soil could only get at them by scaling ladders. The grain and the trees on either side of the road were hoary with dust, and the soil of the hue of burnt chalk, seemed never to have known moisture. But while I loitered on the cliffs, the cloud in the west had risen and spread; a cold wind blew over the hills, and the high, gray peaks behind Valdemosa disappeared one by one in a veil of rain. A rough *tartana*, which performed the service of an omnibus, passed me returning to the city, and the driver, having no fare, invited me to ride: "What is your fare?" I asked. "Whatever people choose to give," said he, which was reasonable enough; and I thus reached the "Four Nations" in time to avoid a deluge.

The Majorcans are fond of claiming their island as the birth-place of Hannibal. There are some remains, supposed to be Carthaginian, near the town of Alcudia, but singularly enough, not a fragment to tell of the Roman domination, although their Ballaris Major must have been then, as now, a rich and important possession. The Saracens, rather than the Vandals, have been the spoilers of ancient art. Their religious detestation of sculpture was at the bottom of this destruction. The Christians could consecrate the whole temple to a new service, and give the names of saints to the statues of the gods, but to the moslem every representation of the human form was worse than blasphemy. For this reason, the symbols of the most ancient faith, massive and unintelligible, have outlived the monuments of those which followed.

In a forest of ancient oaks, near the village of Arta, there still exists a number of Cyclopean constructions, the character of which is as uncertain as the date of their erection. They are cones of huge irregular blocks, the jambs and lintels of the entrances being of single stones. In a few the opening is at the top, with rude projections resembling a staircase to aid in the descent. Cinerary urns have been found in some of them, yet they do not appear to have been originally constructed as tombs. The Romans may have afterwards turned them to that service. In the vicinity there are the remains of a Druid circle, of large, upright monoliths. These singular structures were formerly much more numerous, the people (who call them "the altars

of the Gentiles") having destroyed a great many in building the village and the neighbouring farm-houses.

I heard a great deal about a cavern on the eastern coast of the island, beyond Arta. It is called the Hermit's Cave, and the people of Palma consider it the principal thing to be seen in all Majorca. Their descriptions of the place, however, did not inspire me with any very lively desire to undertake a two days' journey for the purpose of crawling on my belly through a long hole, and then descending a shaky rope-ladder for a hundred feet or more. When one has performed these feats, they said, he finds himself in an immense hall, supported by stalactite pillars, the marvels of which cannot be described. Had the scenery of the eastern part of the island been more attractive, I should have gone as far as Arta; but I wished to meet the steamer *Minorca* at Alcudia, and there were but two days remaining.—*Atlantic Monthly*.

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A VISIT TO THE FISHING GROUNDS OF LABRADOR by H.M.S.  
*Gannet*, in the Autumn of 1867, W. Chimmo, Commander.

(Continued from page 120.)

Now to return to our fishery! Notwithstanding the tolerably large collection of inhabitants a good livelihood is earned by each of them in the pursuit. One family owning a fishing schooner will collect 700 quintals in a season, for which, as 18s. per quintal has been paid, 15s. may be considered a fair market price. And they are generally taken with the seine, there being no hook and line fishing here.

The sixth of August commenced with a cold raw morning, but we left our anchorage in Occasional Harbour before daylight and pursued our voyage to the northward not without some anxiety on account of ice. Our first determination was the Seal islands as we made sail to the N.W. breeze, passing many vessels running south with cargoes of green fish as they are called, before any of the process is commenced towards preserving them. This was a tolerably good omen too, for the season for fishing had not been half expended. The coves as we passed them were full of fishing craft, and in some harbours we had ascertained there were above 1000 boats at work. Indeed, wherever the eye might rest on the rocky shore, boats employed in fishing were to be seen.

Our observations soon enabled us to detect the inaccuracies of the chart even in its general coast-line. We were now at the eastern entrance point of the coast of Labrador. There is an island called Pond Island on the chart, exactly in the position of the *Gannet* as she lay afloat, and therefore, although not far out in latitude, is at least ten minutes too far east in longitude, a fault indeed which applies to every portion of the coast. Indeed, Mr. Lane's chart, on which we

had to depend, in many places seemed to have been formed from mere imagination, where a fair eye-sketch would have been far more valuable. Some fishermen who visited us seemed to think our pilotage good. One of them remarked, that we must have a good pilot on board to pass through channels as we had done. "Pilot, indeed," he was told, "We have two good leads, besides a good look out, and a ship that will stop her way and back out nearly in her own length." But to attempt to follow Lane's chart would lose any ship.

We had now come to a piece of navigation called Indian Tickle. Why this last appellation had been adopted it would be hard to say, but might perhaps have arisen from the *ticklish* nature of the navigation. However our least water in it was three fathoms, little enough too for a stranger to put up with. And we were obliged to keep good way on the ship, for to have gone easy or waited for boats ahead to sound; all such precautions would have kept us three months at it. We were certainly well rewarded for our winding course through this said Tickle, as it presented us with some delicious scenery. Fishing boats were everywhere, fishing stages on the very edge of the water in abundance, and these covered with people hurrying down to witness the novel sight of a ship of war passing through the Tickle, were still more interesting.

We had no sooner passed safely through our "ticklish" navigation than an easterly wind was observed to leeward, by its dark and dismal rolling fog; in fact it was but a mile and a half from us, covering up islands and reefs one after the other, and seeming determined on covering us also. It was forthwith resolved therefore to run for Indian harbour, where we took refuge at an anchorage in five and a half fathoms water. As soon as we had made a snug ship, all hands got hold of fishing lines, and very soon were they repaid for the trouble. For in less than half an hour as many as one hundred and twenty-six cod fish had been taken—hooked in all kind of ways. But in the midst of our success in fishing, the wind veered to S.W., and drove all the fog away, and our little *Gannet* (anxious to be on the wing and making progress in her work) was again under sail, making for a place called Greedy anchorage not far distant. Threading our way through whole fleets of fishing craft, we gained our new anchorage, and were all snug before dark at about eight the same evening.

We were no sooner at anchor than we had a visit from the agent of Messrs. Lamour and King, at Plymouth. The principal piece of information obtained from him, was that the cold S.E. winds had occasioned much mischief. All the people were suffering from sore eyes from the ice, and the cold wind. Indeed, we had found this ourselves, for since we had been on the coast, the use of the spy-glass had been almost laid aside. At night we had another beautiful display of the Aurora, but as usual paid for it after, in having heavy squalls of wind and rain from the northward.

On the morning of the 7th of August, we were again on our way for Indian Island (one of the Esquimaux group), where Sir Leopold McClintock finished his lines of soundings from Greenland. Here

again we had occasion to observe the defects of Lane's Chart, which altogether ignored the important Greedy Island, and being equally deficient in other details.

We had now gained Hamilton Inlet, the rendezvous appointed for our coaling ship. In our way up the inlet we found a strong set against us, and were obliged to make an allowance of two points in our course for it, and did not gain our anchorage west of Indian Island until evening. But we found no *Alma Jane*, and were content to make arrangements for landing our coals on her arrival with Mr. Norsman, the chief agent at this place.

The only party acquainted with this coast, and consequently the only source from whence to look for pilots, are the Esquimaux. But these people accustomed enough to their own craft and their own mode of navigation do not like to take charge of a ship. Besides which, by so doing they lose the advantage of fishing! So that such work as piloting is by no means profitable to them, and hence one of the reasons, besides the ignorance of the charts, why pilots are so difficult to be found.

On entering Indian Harbour a curious and interesting scene was before us. Every available rock of the shore was covered with fish undergoing the process of drying or curing. Men were observed busily occupied in transferring "wet" fish in barrows from their boats to the wash-houses. Boats, again, were constantly arriving with cargoes of fresh caught fish. Brigs and brigantines of all sizes were lying ready to receive their cargoes. People who had nothing to do, or had left their work, were hurrying down to points where they could see the man-of-war steamer, which they had heard of, and which even the Indians came to look at from the hills surrounding the harbour. Indeed the scene, which was lighted up by a glorious sunset, was one of the most interesting we had yet witnessed.

The 8th of August was a delicious day in point of weather, and well calculated for the important operation of making a survey of the harbour. However, all that we now did was to measure a base, for our *Gannet* was to be again on the wing. On sighting our anchor, much to the astonishment of us all, we found both flukes gone; for having anchored on a sandy bottom, such a mishap could not have been anticipated. However, it was well to be no worse. The strong northerly squalls seemed to have set in, and moreover the fishermen seemed to be finding out that their capelin bait was all but expended, and were looking out anxiously for the herring to supply its place; for the cod had got tired of it too, from the capelin having grown large and coarse and too dark coloured, thus these knowing cod displaying considerable refinement of taste in fish where least expected.

We found a clear passage north to Cape Harrison from that amiable channel called "Cut Throat Passage;" but the current invariably sets to the southward and is only changed by a strong N.E. gale. On our way from Indian Island to Webeck numerous fishing boats were passed, all being employed in the curious operation of "jigging" the fish: that is, by having two hooks secured back to back, sunk by a lead



resembling a small fish, which, let down among a crowd, and hauled up with a sudden jerk, brings them up hooked by all parts of the body, thus dispensing with all kinds of bait, etc.

As we were preparing for leaving our anchorage we were accosted by an old fisherman in their familiar way, "You'll tarry a wee wi' us, Capt'n," he said, as he was spreading his fish for the sun to dry; on which I observed he was making hay while the sun shined. "Yes," said the old man, "but the lasses would not like to roll about in it; they w'd like to see the man-of-war better." And this he was promised they should do as soon as she returned, which would be before long.

We took our course anxiously along from "Cut Throat" through unexamined waters, expecting to find a place called Webeck about nine or ten leagues distant; instead of which we found it about eighteen leagues. So much for our chart. Again, on this track we passed an island called Sloop Island, and fourteen miles northward of "Cut Throat," Quaker Island, with a reef to the southward of it, part of which was fifteen feet above water. There is also in Byron Bay an island called Split Island, some fifty feet high, about sixteen miles from "Cut Throat," with detached rocks off it; and yet not one of these islands are in the chart. But we arrived safely at Webeck, and dropped our anchor in eight and a half fathoms, passing through the north channel over a twelve feet rock, as the fishermen reported; although we did not find less than eight and a half fathoms of water; on our passage we had found a strong indraft into Byron Bay, and also a strong northerly set in our favour.

Webeck is a place that has about 200 sail of boats employed in the fishery, and has moreover enjoyed the best fishing of the present season along the coast. There is a rival place, rejoicing in the ominous name of Windy Tickle, about 180 miles further northward. However we were snug in Webeck harbour, and although the first part of the night was calm, a severe gale set in from the South without any indication whatever from the barometer.

August 9th. In pursuance of our mission preparations were now made for the survey of this harbour, while outside of it was blowing a gale. The wind makes itself felt too inside, for it gathers into the harbour in a remarkable manner, and the fine steady squalls press heavily on the vessels at anchor. Occasional blasts of hot wind also raise the thermometer reading to 72°. These blasts were from S.W. generally, but their effects were very perceptible to all of us.

In the course of the evening we had several visitors from among the fishermen, who smoked their pipe with much relish in the company of their new friends. To us, this was quite a novelty and one productive of some information as to their proceedings in the fishery. It appears that they make two trips to their grounds in the boats during the day. Starting off at daybreak about half-past three, they return at noon, and make another trip in the afternoon. We had an opportunity here of seeing a process of fishing carried on, that more than anything else will give an idea of the multitude of fish on this coast. This is called

jigging, in fact taking the fish with the bare hook as fast as they can haul them up, and hooking them anywhere. Fish are thus taken that weigh from three to four pounds.

August 11th. Being desirous of obtaining some information concerning the coast to the N.W., and especially of a place called Hopedale, a Halifax schooner near us afforded a good opportunity for doing so. She was a craft of about seventy tons. We found the master a good humoured fellow, an Irishman and no mistake, although in Ireland he had never been! But his brogue at once betrayed him. His wife with six children were his companions in his schooner, besides two servants, perhaps sisters of his wife. A cabin, about 8 feet square! formed their place of abode, in the midst of which stood a table: a small stove in a corner, and no small contributions of dirt and filth. This would be wretched enough on shore, but in this craft, subject as it was to the most violent movements, to occasional seas, and no limits of wind, it was enough to cure the strongest bias, for a sea life and that especially, when to all was superadded that strong odour of stinking fish to give flavour to a meal that was in course of preparation consisting of baked apples and dried fish! These were the occupants of the cabin, and their bed places, commonly called by sailors "bunks," as might be imagined were neither the cleanest, nor the driest places for repose, considering that the small skylight was frequently invaded both with rain and salt water. Here, indeed was the perfection of a sea life.

And yet this Halifax fishing boat had another family on board of eleven, to be seen enjoying themselves down the fore-hatchway. My informant, the Captain, was lavish in his praise of the harbours to the northward. They were to be found in plenty, but from twenty to forty miles away, and two were particularized as being very superior named "Strawberry" and "Rogers."

The weather was cold, raw, and wet, but no weather seems to prevent the fishing boats from going out to their work. Having obtained some statistics relating to fishing, it appears that the cost of a vessel may be thus stated:—

A brigantine of 130 tons built at Newfoundland, costs	£800
Her outfit, sails, anchors, etc.	£600
A schooner of 70 tons, complete	£800
Boat, with sails, etc., complete	£20
A cod seine of 100 fathoms, 70 feet deep, which requires 10 men to use	£75
Lines 15s. per dozen, hooks 3s. 6d. per gross	-
Salt 10s. per hogshead	per ton £2 10s.

A man working on his own account only, will clear from £40 to £45 per trip. Men working for agents are paid £25 the trip, from May 10th to November 1st, and have to work twenty hours per day—four hours sleep allowed. One boat with two men (if fish are plentiful) will take 15 quintals per day (dried).

A seventy-ton schooner will clear £270 the trip, after paying her

people, eight hands, £45 each. The number of men estimated to leave Newfoundland every season on fishing employment, is considered about forty thousand.

We learnt here that the method of jiggging the fish beforementioned is in disrepute, as highly destructive of the fish, and not yielding more than three out of every eight fish, the rest are wounded and torn, and frighten all the rest away from the ground (not to be wondered at either), besides which the laceration which the unfortunate fish receive from the hooks spoil them for curing.

Of those forty thousand men who come to fish, one-half would willingly go to N.E. Labrador if they had the means, as at present on the S.E. Coast they can only get half their cargoes. But at present the number on the N.E. coast is not more than 20,000. There are about 2,000 families consisting of five to seven each.

Of the vessels actually employed:—the number of brigs containing about twenty men, each on this coast are estimated at about 300. The number of schooners containing ten or twelve men each are about 300. The number of boats with three men in each, are about 3,000 at least. There are those who are fishing on their own account out of the 20,000, considered about 7,000.

A capelin seine, costs about	-	£20
A herring seine - - -	-	£45
A herring net - - -	-	£5

The brigs and brigantines abovementioned generally come to the fishery in May, literally crammed with boats and people, and the first thing done is to land these people on the beach, that they may lose no time in their work of gutting and curing the fish.

It appears also that the seal fishery commences on the first of March, and employs about 200 vessels. It is a work of miserable destruction in which the unfortunate animals are clubbed to death. The dams are drifted down from the Straits and their young are dropped on the drifting ice and ready for the hunter, about the 20th of this month. A vessel may be easily loaded in three days, slaying as many as 7,000 seals in that time, each young seal being worth about twelve shillings.

On the 14th of August having completed our surveying operations at Webeck, for the benefit of the charts, our next attention was directed to Indian Harbour, as we had appointed our coaling vessel the *Alma Jane* (wrongly named in our last *Alice Jane*) to meet us at that place. We were, therefore, anxious to get to our rendezvous, as the cost of demurrage that would occur if she had to wait for us, by getting there first would be heavy—about £4 per day! Early in the morning, we therefore, made sail for that place. On our way, we were passed by the Hudson's Bay Company's steamer, but we soon ran over our distance of thirty-seven miles, finding nothing like a danger in our way.

It was somewhat remarkable that as we approached Indian harbour, we found our friend with the black diamonds, the *Alma Jane* herself,

hove to the wind off the entrance of the harbour; and we both ran in together as if we had made the passage along the coast in each other's company, or had met on purpose. However, we were soon at anchor inside, with the cause of our solicitude lashed alongside of us!

The next day we commenced coaling in a dense fog, and had transferred fifty tons by the evening from our companion into our own *Gannet*, the survey of the harbour meanwhile going forward under the officers.

Among other information which had been volunteered to me, was one concerning the provisioning of the fishermen that appears worthy of record. The poor fishermen are loud in their complaints of the prices they have to pay for their subsistence. But here, where there is no kind of competition they are of course at the mercy of the proprietors. The current prices run thus:—

	£	s.	d.
Flour per barrel of 196lbs. - - -	3	10	0
(or about 4½d. per lb.)			
Biscuit per bag (No. 2), 112 lbs. - - -	2	2	0
Pork per barrel 2 cwt.—American - - -	8	0	0
Molasses per gallon - - -	0	4	6
Tobacco per lb. - - -	0	4	6

Now these prices are a hundred per cent more than they should be, but there seems to be no competition among the fishermen, or care for purchasing in a more reasonable market.

The sixteenth of August was rendered somewhat remarkable by a heavy thunderstorm, for such phenomena are not of frequent occurrence on this coast.

The few days we passed in Indian harbour were devoted to its examination, as well as that of the adjacent coast, for the improvement of the charts, when on the 20th of August, a fine promising morning, we unmoored our little *Gannet* and left our snug anchorage. We had obtained an Esquimaux pilot, who might be excused for a peculiar character. He was an old man known by the name of John Tooktooshner, which, considering the language of the people to whom he belonged, was not difficult to make use of in common parlance. He hailed from a place known by the name of Windy Tickle, already alluded to, but rather an odd combination of words. The latter "Tickle" is a common expression on this coast, and applies to an anchorage or channel, and the former would at once convey an idea of its boisterous nature. So that to obtain an old pilot from such a place might induce one to expect him to be a good sailor.

But there are some curious names scattered along this coast, for on leaving our harbour, the first place we examined was Cut-throat-Run, another ominous name indeed, and one which no doubt proclaimed a deed of blood. If not, it was quite sufficient to remind one of the operation to which a visitor might be liable, should he happen to fall into the hands of the lawless characters who are found not only on the coast of Labrador, but in many such out of the way parts of the world.

Our old Esquimaux pilot, John Tooktooshner, had a peculiarity in

his visage, which it was impossible to look at without a lively remembrance of it ever afterwards; and this was in the mouth, which was only to be distinguished by one solitary remarkable front tooth in his upper set. This was large enough in itself for the rest, and terminated in a point at its lower end, making a wedge-like impression on the lower lip, and giving a peculiar twang to his words. One of these which seemed to be the readiest he had for use at all times was "handy-bye," meaning "close to" the wind, as we supposed. But we soon found ourselves quite at home with him, although to write down the names of all the islands as we passed them (and he was very particular in letting us know their names) would have puzzled Dr. Johnson, or all the lexicographers in the world, if they were even to lay their heads together. But the knowledge which we had gained of them in our boat excursions from Indian harbour, had rendered us familiar with them, so that their positions on the chart were satisfactorily placed, and this would go far to certify the wretched state of the charts of this coast.

However at two p.m. of this day, we considered it time to shape our course for Aillik, the name of a harbour which we were desirous of reaching by sunset. So as our pilot had some misgivings about the correct position of a breaker in the inner passage, he wisely preferred taking the outer one which we accordingly adopted. It was getting late when we first caught sight of the buildings of this place, from a few lights of the windows. But we were running over new ground, indeed, we passed soon after shaping our course, the northern limits of our Admiral's command, and discovered the position of a new danger which we marked on the chart as we proceeded. And it was getting dark as we were feeling our way into the harbour, when we once more had the satisfaction of finding ourselves snug at anchor, without any mishap to our *Gannet*.

In the course of our passage to this place, we could not help observing the evident rising of the coast, clearly enough defined by the uniform beaches, composed of sand and shells, and again of rocky boulders, all alternating at different elevations of twenty, thirty, and forty feet above the present sea level, a feature which he had also observed on the Newfoundland coast. A devoted geologist would be delighted with all these, and would no doubt go so far as to determine the rate at which this coast is rising above the sea. He might have his theory like others, and certainly his observations here would go far to convince him that the whole of the shores of this our northern hemisphere are gradually lifting upwards. Indeed, the gradual elevation of the bed of the Baltic has long been a subject of remark among geologists, and a recent statement says, that a celebrated cliff in Denmark, called "the Queen's Seat," has just fallen bodily into the Baltic from the effects of the shock of an earthquake. It is said that this rock, about 400 feet high, was an object of great interest to tourists from the magnificent view to be had from it. On a clear day Rogen and the coast of Pomerania could be plainly seen. Every part of the rock has disappeared except some masses of chalk that form a

kind of islet near the shore. No life was lost in consequence, but the account says that the inhabitants of the neighbouring villages were terrified at the noise it produced, which lasted several seconds.

Sunrise, on the 21st of August, revealed to us the Hudson Bay Settlement of Aillik, the principal objects consisting of a comfortable looking red house with a hut near it, a fishing stage and an old store-house, a settlement certainly, but that is all. There was, moreover, a flag flying on some elevated ground, the English red ensign on a very respectable flagstaff.

It was almost a point of duty to take a look at the place ashore, where I found the principal gentleman, who in fact was in charge of it (a kind of Governor) in the person of Mr. E. A. Goldston (formerly Bright), who with his right hand man, Rennie Labbie, received me and did the honours of host. The first information imparted by him was that our *Gannet* was the first man-of-war they had ever had a visit from, and the latter gentleman confirmed it by adding, that he had been thirty years at the place. The fact of our arrival he was accordingly requested to note in his journal. We found nothing very worthy of remark here, but in case of vessels requiring water, they would easily obtain it from a good large lake hard by the Governor's house, and yet as to supplies, a vessel would have little chance in that way, for even firewood was scarce, and a few small stunted fir trees were all that we could obtain, and although a Hudson's Bay Company's Station, no such thing as a fur was to be had!

In our ramble on shore, we counted in the offing as many as sixty-five icebergs, and, moreover, made the discovery of no less than sixteen islands, not a single one of which was acknowledged in the chart. Seeing that there was little to be gained from Aillik, we lost no further time about it, and started at once for our next point of call, which was Hopedale, at no great distance from us.

Finding ourselves on a strange coast, in the presence of numerous unknown islands, reefs, and flats, with weather that became dull and threatening, as the day advanced, it behoved us to be very tender in our progress; for our pilot himself was by no means at home with his duty. All seemed smooth enough, but the lead was constantly going, especially as we passed through Sugarloaf tickle, another piece of navigation of euphonious sound, but of no promising safety. However, we found nothing less than fifteen fathoms in the middle of it, and were encouraged in our progress by fishing boats, which we knew kept to a depth of fourteen fathoms in their fishing occupations. But verily, caution was necessarily our watchword, for not liking the look of our pilot touching his acquaintance with the coast, when we could count no less than sixty-five islands from our masthead, of which our chart knew nothing, and sixty-two icebergs besides at one time, we were in a comparatively critical navigation to plain sailing at sea.

However, we arrived safely at Hopedale about two in the afternoon, and were welcomed by several Esquimaux in their curious kyaks.

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## THE SUEZ CANAL OR RAILWAY.

WHICH shall it be "*Canal* for navigation or *Railway* for the transit of goods from Port Said to Suez"—that we believe is after all the whole question. And on this very interesting question—interesting indeed to English capitalists, and most especially at the present moment, we have thrown together a letter from an old and highly esteemed correspondent, along with the very attractive picture on the subject, drawn by an editorial article in the *Daily News* of the 19th February. On these two papers we may simply say, "*Audi alteram partem.*" And how shall we state our humble opinion? Shall we at once take to our nautical parlance? Why not? Then we will distinctly say to those bent on this navigation—"Look out; shoal water ahead! Ocean vessels, keep clear." "What water in the chains?" "Quarterless two, Sir." "Mark twain, Sir." "No more?" "No, Sir." "Won't do—lay your lead in—come out of the chains." "Aye, aye, Sir."

Let us then suppose the ship to have anchored in Port Said. The captain of the port comes on board and reports, "capital canal boats, Sir,—built on purpose for canal, will soon transfer your cargo." "Transfer where?" "To Suez, Sir." "Suez? yes—but I shall not be there to receive it for Bombay with my ship."

"Will it come to this"—there is something very much like it in the distance. Canal boats after all. No ship passage! *Nons verrons!*

Meanwhile here are the two accounts, of which our readers must make the best they can. But how little all this concerns passengers any one will readily perceive.

Perhaps one of the most pleasant suggestions which can be made to an Englishman of wealth and leisure, who has no ties at home and does not care for politics, is that of a journey to meet the Spring. While we are shivering amid these winds of March, which even the snowdrop has scarcely dared to "take with beauty"—all along the northern coasts of Africa the swallows are gathering to come northward with the spring, and the air is fragrant with the breath of coming summer. It is perhaps a little too late in the season to enjoy the Nile at its very best; but it is almost tantalising to read of the glorious sunshine and the almost oppressive heat which so many of our countrymen are enjoying on the banks of the ancient river. The Prince and Princess of Wales have been well advised to take a holiday in Egypt. The visit of the Prince to the cradle land of civilization in 1862 has made him already acquainted with many of its wonders, and must have added greatly to the pleasure of the Princess in this, her first visit. Probably there is no country in which English people find more entire change and relaxation than is found in a journey on the Nile.

In nearly all respects Egypt is the antithesis of England. It is a green and beautiful oasis surrounded on all sides by barren, burning desert, and has been literally won from the desert sands by the abounding river. The fruitfulness of the soil is not rained on it from the sky,

but is entirely given by the water of the glorious stream, which rolls for a thousand miles through the inhospitable sands, and spreads fertility and beauty all along its course. The atmosphere is that of the surrounding desert, with all the dryness and transparency of air which no vapours dim; so thin and clear that it is kindly to the tenderest lungs, so pure and bright that the nocturnal sky shines like a new revelation to travellers from these misty climes. Rain is far more exceptional along the Nile than glorious sunshine is upon the Thames; and even the depth of the Egyptian winter is balmy than our English spring. Nor is the climate by any means the chief point in which, to an English traveller, Egypt is the antithesis of home. In the most ancient town or cathedral city in these islands there is an air of upstart newness side by side with the antiquity of everything on the banks of the Nile. The long journey against the stream, with the desert nearly always in sight on either hand, is a voyage through the relics of the remotest antiquity on earth. The marvellous ruins which were the wonder of the ancient world are still there to be the wonder of modern times.

Herodotus said of Egypt that it contained more wonders than any other country; could he see the England of to-day, he would say the same of it; but the wonders of Egypt are wonders of ancient superstition, the wonders of England are those of modern science. The Egyptian ruins have been made familiar even to untravelled moderns; but on the spot, moving amongst them, the very air of the earlier times seem to brood above them. There is the stillness of death upon the landscape and the sunshine seems to sleep upon the graves of a world of giants. The change from our progressive and busy island to such a land is the greatest and most refreshing that it is possible to enjoy. It takes the traveller out of the noisy present into the silent past, and gives him the sense of awe which youth may feel before revered age. Our English civilization covering the land with the trophies of science perpetually reminds us of man's victory over nature; Egypt, covered with monuments which have outlasted all memory of their builders, and which seem to stand in silent mockery of the pride and vanity which built them, is the very land in which to learn the lesson of humility. Its great conquerors sleep in nameless graves, the sands of the deserts have blown over their monuments, and the men of a remote posterity make pilgrimages of interested curiosity to look upon their nameless tombs. There courtiers and great generals and statesmen lie in their rock-hewn beds, still marvellously kept from kindly and natural decay; but vulgar curiosity unwraps their cerecloths, and rifles their resting places to carry away some nameless relic of one who walked in Thebes three thousand years ago. It is something even for a Prince and a Princess to see this ancient wonder-land—to get out of modern adulation to learn some of the lessons of the past, and to get recruited and refreshed to play a great part in a great present by a visit to the cradle of our civilization, and by a little converse with the most venerable antiquity. The time will not be lost either for mental refreshment or physical health. London may miss



them; but the Princess has probably felt that it is better to be for once on the cataracts of the Nile than in the vertex of the London season.

A glance at a Nile map will show the most untravelled readers where the last accounts left the Royal party. They had just passed the most remarkable monument of Egyptian antiquity—the island of Philae. Philae was the Holy Island of the Egyptian faith. The most binding and terrible oath of the ancient world was that sworn “By Him who sleeps at Philae.” The hypaethral temple, called Pharaoh’s bed, is, in fact, the supposed grave of Osiris; and a magnificent temple of his mother, Isis, once also covered the sacred island. The river above Philae becomes exceedingly beautiful, and the journey to the second cataract, which the Royal party have just made, takes them to the 22nd degree of latitude, and a considerable distance within the tropic. Thence the Nubian Desert opens all around them, and there is a glimpse of the wandering desert life, such as Abraham and Lot may have lived in the childhood of the world. The Princess was to have a short experience of desert life, and then to return down the river to Cairo. By this time probably the whole journey has been completed, and the Royal travellers, who have seen more of the world than any royal pair in history, have returned to the scenes of that motley civilization which seems so fit a gateway to the ancient East.

The royal visit to Egypt, however, has even more significance than is given it by the contrast it suggests between the present and the past. The world has heard moralising enough on the heir of a modern throne paying his homage at the shrines of ancient dynasties: but the real significance of such an event is that of bringing Egypt more and more into the modern world, and penetrating it with the influences of this modern time. If, as was rumoured, the Prince himself is to superintend the letting in of the water to the last section of the Suez Canal, it will seem as though he was actually, as well as figuratively, opening a new way for Western civilization to penetrate the East. The Nile journey will henceforth, of course, be the rage with English people. But what Egypt wants is not only English visitors, but English energy and wealth, to develop her resources. Under the present Government this garden-land is gradually becoming once more the home of civilization, and there is probably a great future opening before it. The world is getting old, and in its age is looking with new interest to the cradle of its infancy, and the home of its youth. The Nile still flows there as it did in those days, and though its rise and fall are no longer a puzzle, and even the mystery of its origin has been solved, the flood is still as fruitful and as fresh as it was when humanity was young. There is room upon that ancient soil, perpetually as it year by year renews its youth, for new millions of men, new commerce, new cities, perhaps a new Thebes, in which science shall take the place which superstition occupied in those distant times, and in which western civilization shall repay the debt it owes to its parental source.

Sir,—If you will take the trouble to read the discussion which took place at the Institution of Civil Engineers, on Sir William Denison's paper on the Suez Canal works, on the 16th of April, 1867 (Vol. 26 of the Institute Minutes), I think you will conclude that the combined Engineering authorities named in your extract from the *Express* newspaper, cannot be deemed sufficient to weigh the facts which were advanced against the probability of the Suez Canal work being completed (as originally proposed) either by the end of this year or of many a long year to come. Facts have, however, been permitted to ooze out of a most damnatory nature by the recent visitors of the works: thus, Mr. Fowler tells us that the sand has a clean passage into the proposed harbour through the blocks of beton (consisting of sand and cement) of which the great western pier or mole of Port Said is composed; and he tells us that it must be made solid. Mr. Abernethy, at the discussion at the Institution of Civil Engineers, said that the Said mole was completed to the extent of 1800 metres, and I disputed his statement from the evidence that the result of warping up of sand to the full extent of the 1800 metres had not taken place, and therefore the said 1800 metres of work or pier could not but consist of blocks cast in at random over the length, and did not compose a finished work, and Mr. Fowler's recent admission proves that I was correct in the view I had taken. It may be true that there may be a connection made by a *ditch* between the two seas by the end of 1869, and some craft, drawing four or five feet, or with some *show of tonnage, but no show of draught*, may be hauled through, but it is physically impossible that the scheme can be carried out in its integrity, or to the effect of allowing a ship to pass through of a draught of twenty feet; and not all the opinions of eminent railway engineers on the subject will shake mine, coinciding as I do most heartily with the views held by that honest engineer, the late Robert Stephenson.

Nevertheless, I heartily wish I may be found wrong in the opinion I have steadily held, because it would, indeed, be a glorious thing for ships to be able to pass through without any shifting of cargoes from them into small craft to lighten them so as to get through, but to that it will come. My belief is, that this vast expenditure in work and *maintenance* will only release a passage for ships of about ten feet draught, or at most twelve feet; and that the cost of keeping open the canal to enable even such craft to get through will be so heavy as to necessarily entail such onerous tolls that ships will still be compelled to go round the Cape of Good Hope rather than pay them. The note by the eminent railway engineer, Mr. Fowler, "whether *new* sailing vessels, with adequate auxiliary steam power specially adapted to the Canal and the Red Sea," tells me plainly enough that he, at least, does not believe that ships of large draught will be able to get through at any time, else why does he use the words "*new*" and "specially adapted?" English capitalists, will doubtless require more weight of opinion than has been already arrayed against that of the late Robert Stephenson.

W. A. BROOKS,

Elected Member of the Institution of Civil Engineers in 1834.

## PARLIAMENTARY EXTRACTS.

**THERE** has been, perhaps, no period of our modern naval history when so great and important changes have been announced by a Prime Minister as those which were declared by Mr. Childers, the First Lord of the Admiralty, in Parliament, on Monday, March 1st. Our limited space forbids our going wholly into them, but we preserve here those portions of his very masterly statement which concern our naval officers and their ships. We have been gradually making the transfer from wood to iron, and that transition of our naval force is not yet a *fait accompli*. We do not as yet know our model man-of-war, or the part which that very formidable vessel the turret ship is to take. We are yet inexperienced—young in the subject of iron afloat, or monitors, on which rather we are already indebted to our American friends for their opinions, which have already appeared in these pages. However, our object now is our renewed navy.

On Monday, the 8th of March, Mr. Childers, the First Lord of the Admiralty, in a long and masterly speech, on which he was highly complimented by the whole House, in the course of bringing forward the Navy Estimates, spoke thus:—

*Personel of the Royal Navy.*—This matter [of reduction] brings me to the most important part of the statement with respect to the officers and men of the Navy, and that is the enormous excess of officers as compared with men. This has been a subject of inquiry by committees, commissions, and various Boards of Admiralty for some years past, and doubtless some amendments have been made, but the state of the case remains this.

As regards the upper lists of the navy—I leave out admirals and admirals of the fleet, and take only that class of officers from whom persons are selected for active service—I find this state of things. We have now 79 vice-admirals, of whom 23 are upon the active list, and four of whom are at sea, and four are in harbour. We have 127 rear-admirals, of whom 48 are on the active list, three are employed at sea, and only six in harbour. There are 725 captains, 205 being on the active list, 61 employed at sea, and 39 in harbour. There are 403 commanders, of whom 86 are employed at sea, and 99 are on shore or in harbour. This state of things to my mind is most unsatisfactory. I am happy to know that my right hon. friend agrees with me, and that, putting aside the controversy of 1863, he is anxious to see some remedy applied. The case as regards the juniors is lamentable in the extreme. I find of the 111 captains on the list of five years and less only 14 are employed. This state of things demands redress,—but it is no doubt hard to know where to get redress from.

In the first place it is a very uneconomical arrangement. No one can dispute that we are paying for a great many more officers than we can employ. It is uneconomical both directly and indirectly, for officers employed for only a short time find their pay insufficient, and they necessarily grumble. I must also say, on my own distinct respon-

sibility, that I think such a state of the navy list is injurious to the navy itself. Although our officers are as gallant a set of men as are to be found in the world, and endeavour to do their duty to the utmost, I believe there is an amount of inefficiency which is not necessary, and which is caused by the small amount of employment they receive, I therefore appeal to the Committee to support us in the proposal which we make, that these lists ought and must, with a view to the efficiency of the Navy, be reduced in some practical and clear manner—not by knocking off two or three men by pensions, and waiting until others die, but in some clear and practical way. In a short time we propose to pay off with a sum down in lieu of their half-pay, those men whom we may be able to spare, and who are willing to go.

There is a large amount of detail as to how this will be carried out, but practically it comes to this—the money will be provided by the Commissioners of the National Debt, and they will be repaid by the amounts for half-pay which will continue to be voted. The immediate effect of that will be to reduce the active list; and then we shall be able to simplify the present complicated system of retirement to one based upon some simple consideration of sea service, intelligible to every one. I do not wish to be misunderstood. We are not going to retain on the list only a sufficient number of officers for ships in commission, but we shall keep a reserve for time of war—but that reserve is now infinitely too great. We also propose to reduce the cadets from 140 to 112, but I do not think it would be politic to reduce them further.

#### *Materiel of the Navy—Ships.*

I will now state to the House our policy as regards the shipbuilding and manufacturing establishments. We propose to minimise the repairs and alterations of ships. We shall increase from three to five years the length of time for ships to be in commission, and this will very much reduce the expenses of overhauling them. We propose to thoroughly investigate the state of our stores in all parts of the world, and we have made a beginning already. With respect to dockyard work, we propose to keep up economical efficiency, making our reductions gradually, and using private contracts as an adjunct. Acting upon advice, we propose to repeal the Naval Stores Act, by which it is said we now lose more than we gain. The present state of our shipbuilding is this:—The ironclads being built are—at Woolwich, the *Repulse*, which, although launched, will not be ready for sea until July. At Chatham there is the *Monarch*, which will be ready for sea in May, and the *Sultan* and the *Glatton* will be completed at the end of the financial year, and ready for sea about July, 1870. At Pembroke there is the *Iron Duke*, which will be launched in the winter, and completed by May, 1870.

As regards contract ships, there is the *Captain* (turret), building by Laird Brothers, which ought to be ready in April, but, I fear, will not be until July. The *Audacious*, building by Messrs. Napier, of Glasgow, ought to be ready in April; and the *Invincible*, and the *Vanguard*,

both also in the yard of Messrs. Napier, ought to be ready by October. *Swiftsure* and the *Triumph*, building by Messrs. Palmer, will be half ready by the end of this financial year, and the *Hotspur* will be all but finished this year.

The unarmoured ships stand thus—We have at Woolwich the *Thalia*, corvette troopship, which will leave that dockyard in September, to be fitted at Sheerness; the *Druid*, corvette, which will be finished in July; and the *Spartan*, corvette, which will be finished in April. At Sheerness we have the *Briton*, corvette, which will be finished by the end of the financial year. At Portsmouth we have the *Dido*, corvette, which will be finished before the close of the financial year; and we have at Devonport the *Tenedos*, corvette, to be completed at the same time. At Pembroke we have the *Inconstant*, a large frigate, to be completed in May, and also two gun vessels. By contract we have building the *Active* and the *Volage*, large corvettes, to be ready for sea in June or July. At the end of the financial year 1869-70, the only unfinished work will be at Chatham, the *Sultan* and the *Glatton*, which it will take three months to complete; at Pembroke, the *Iron Duke*, which it will take one month to complete; the *Triumph* and *Swiftsure*, which it will take nine months to complete, and the *Hotspur*, which it will take one month to complete. We shall have no unarmoured ship in hand except a small gun vessel at Chatham, and the *Osborne*, at Pembroke.

I will now proceed to give the Committee the particulars of the new ships which it is our intention to lay down in the dockyards. We propose, in the first instance, to build at the commencement of the next financial year at Chatham and Pembroke two ships, which I do not hesitate to say, will be the most powerful in the world. They will be two turret ships, each of 4,400 tons, with 800 nominal horse power, working up to seven times that amount; they will each have a double screw and four engines, with a speed of twelve and a half knots an hour, and carrying 1,750 tons of coal, or twelve days' consumption, at the rate of twelve knots an hour; they will each carry four twenty-five-ton guns, with a freeboard of four feet six inches, the base of the turrets being protected by a raised breastwork of oval form seven feet high. Their armour will be from ten to twelve inches on the sides and breastwork, and from twelve to fourteen inches on the turret, with a backing from thirteen to twenty inches and a skin plating behind the armour of from one and a quarter to one and a half inch, and a plating on deck of from two to two and a half inches. They will have no masts, so that they will have an all round fire; their crews will each consist of two hundred and fifty men and officers, and their cost, including engines, will be £286,000 each.

Their draft will be from twenty-five to twenty-six feet. We also propose to build, at Portsmouth, a third ship of the same class which my right hon. friend proposed last year, namely, a turret ram—a species of improved *Hotspur*; but it will be somewhat larger, will have a thicker armour, and a revolving instead of a fixed turret. It will be of 3,200 tons, of 700 nominal horse-power, working up to six

times that amount, with a speed of twelve knots an hour, and carrying 350 tons of coal, sufficient for three and a half days' steaming at ten knots an hour. She will carry two eighteen-ton guns in one turret, will have a freeboard of one foot six inches, and seven feet of breastwork round the turret. The iron on the breastwork will be twelve inches thick, that on the sides from nine to ten inches, and that on the turret from twelve to fourteen inches. There will be a two inch deck plating; she will carry two hundred and fifty men and officers, and her cost, including engines, will be £195,000. We also propose to construct one or two vessels like the *Staunch*, a vessel for which my right hon. friend (Mr. Corry) deserves credit, and which ought to be very efficient, inasmuch as it is nothing more than a gun borne by a floating carriage. With reference to the turret ship which is to be built at Pembroke. I may state that Her Majesty, with her usual consideration, has approved of the postponement of the building of the *Osborne* until the following year.

I will now proceed to inform the Committee of what the navy of England will consist when all those vessels shall have been constructed. The present state of our navy is this. We have 36 broadside armoured ships, carrying 555 guns, which may be classed as follows:—Class 1, the *Hercules* and the *Sultan*, protected by an armour of from 6 to 9 inches, with a speed of  $14\frac{1}{2}$  knots, and carrying 18-ton guns and under. Class 2, the *Audacious*, the *Invincible*, the *Vanguard*, the *Iron Duke*, the *Swiftsure*, and the *Triumph*, all of which are protected by an armour of 6 to 8 inches, with a speed of  $13\frac{1}{2}$  knots, and carrying 12-ton guns; and under class 3, the *Bellerophon*, the *Lord Warden*, the *Lord Clyde*, the *Minotaur*, the *Agincourt*, the *Northumberland*, the *Royal Alfred*, the *Repulse*, and the *Penelope*, protected by an armour of from  $5\frac{1}{2}$  to 6 inches, with a speed of from 13 to 14 knots and carrying 12-ton guns and under. Class 4, the *Hercules*, the *Royal Oak*, the *Prince Consort*, the *Caledonia*, the *Ocean*, the *Valiant*, the *Hector* (these last two badly protected) and the *Jealous*, all of which are protected by  $4\frac{1}{2}$  inch armour, with a speed of  $12\frac{1}{2}$  knots, and carrying 9-ton guns and under. Class 5, the *Warrior*, the *Black Prince*, the *Defence*, and the *Resistance*, all badly protected with  $4\frac{1}{2}$  inch armour, with a speed of from 12 to 14 knots, and carrying 9-ton guns and under. Class 6, the *Pallas* and the *Favourite*, protected by  $4\frac{1}{2}$  inch armour, with a speed of from 12 to 13 knots, and carrying 9-ton guns, and under. Class 7, the *Enterprise* and the *Research* (sloops), and the *Viper*, the *Vizen*, and the *Waterwitch* (gunboats), protected by  $4\frac{1}{2}$  inch armour, with a speed of  $9\frac{1}{2}$  knots and carrying  $6\frac{1}{2}$ -ton guns.

In addition to these we shall have eleven turret and special ships, carrying 43 guns, and classed as follows:—Class 1, two new designs, with from 10 to 14 inch armour, having a speed of  $12\frac{1}{2}$  knots, and carrying 25-ton guns. Class 2, the *Monarch* and *Captain*, with from 7 to 8 inch armour, having a speed of 14 knots, and carrying 25-ton guns. Class 3, the *Glatton*, with from 12 to 13 inch armour, having a speed of  $9\frac{1}{2}$  knots, and carrying 25-ton guns. Class 4, two after the model of the *Hotspur*, the first from 10 to 14 inch armour and the

other with from 8 to 12 inch armour and both having a speed of 12 knots and carrying 18-ton or 25-ton guns. Class 5, the *Royal Sovereign* and the *Prince Albert*, with from  $4\frac{1}{2}$  to  $5\frac{1}{2}$  inch armour, having a speed of 12 knots, and carrying 12-ton guns. Class 6, the *Scorpion*, and the *Wyvern*, with  $4\frac{1}{2}$  inch armour, having a speed of 10 knots, and carrying 12-ton guns. Total of armoured ships 47, with 598 guns, of which 18 will be 25-ton guns; 19 will be 18-ton guns, and the remainder will be 12-ton guns.

Of unarmoured ships it may be said that we have now available 12 line-of-battle ships and frigates of old types, including the *Galatea* and *Ariadne*; one heavy frigate, the *Inconstant*, with a speed of 15 knots, and carrying 12 $\frac{1}{2}$ -ton guns; two large corvettes, the *Active* and the *Volage*, with a speed of 15 knots, and carrying 6 $\frac{1}{2}$ -ton guns; 12 corvettes of the *Blanche* class, with a speed of 13 knots, and carrying 6 $\frac{1}{2}$ -ton guns; two corvettes of the *Druid* class, with a speed of 13 knots, and carrying 6 $\frac{1}{2}$ -ton guns; 12 gun vessels of new types, with a speed of 11 knots, and carrying 6 $\frac{1}{2}$ -ton guns; 17 composite gunboats, with a speed of 10 knots, and carrying 6 $\frac{1}{2}$ -ton guns, besides other of the old types, including eight heavy corvettes, making in all about 66 efficient ships, together with a considerable number of old sloops and gunboats. We can, moreover, rely on a force of torpedoes, which in maritime warfare must be of the greatest importance.

I do not think it is practicable to make any detailed comparison between the British fleet as I have stated it and that of foreign Powers; but I may state generally that France will have, compared with our 47 armoured ships, 37, besides 11 floating batteries for harbour use. She cannot, however, compare with us in first or second class broadside or turret ships, though she is strong in third class. The old class of the unarmoured ships of France is in better condition than ours; but she has only two or three of new type to compare with us. The United States have no seagoing armoured ships, but an immense fleet for home defence; and with respect to their unarmoured ships, there is so much controversy that I must decline to plunge into it. These are the facts which, I think, the House and the country will be interested in knowing with respect to the present state of our fleet, including those which are now being built and those which we propose to build. Perhaps the House will permit me to say, in conclusion, with respect to the arrangements of the department, that I believe what we have done will be for the benefit of the service. We have brought home a general responsibility to all the superior officers and the other officers of the Admiralty, under those most distinguished and gallant officers Sir Sydney Dacres, as First Sea Lord, and Sir Spencer Robinson, as the head of the manufacturing department. I believe the organisation of the Admiralty is working thoroughly well; at least we are all perfectly satisfied with our different relations to one another and the progress of business. With respect to the second branch of the question which I have brought before the Committee, speaking on my own responsibility, and after having consulted most minutely with my naval advisers, I believe that what we propose to do

in reference to the men and the fleet will not diminish, but will decidedly add to the efficiency of the Navy. With respect to the third point, namely, our shipbuilding, we have laid before the country a distinct and positive policy, to which we propose to adhere. We believe that it is not only economical at the present moment, but that it will end in a still greater economy. The right hon. gentleman concluded amid cheers by moving that 63,300 men and boys be employed for the sea and Coast Guard service for the year ending the 31st of March, 1870, including 14,000 Royal Marines.

Some further matters of interest to our readers have transpired in the House of Commons recently, among which are the following :

*Military Aid to Consular Agents Abroad.*

Colonel SYKES asked the First Lord of the Admiralty, whether, in the recent instructions transmitted to naval officers on foreign stations, a discretionary power was given to such officers to obey or not the requisitions of British diplomatic and consular agents for military aid in cases of emergency, or in any other case.

Mr. CHILDERS said there was nothing in the recent instructions issued to naval officers, for their guidance upon the occurrence of any matter of difficulty in a foreign port, at variance with Article 44 of the Admiralty printed instructions. That article was in the following words:—"The officers in command of her Majesty's ships are to pay due regard to any requisition which may be made to them, in the absence of the commander-in-chief, from the governors within the limits of the station on which they are employed, for their co-operation and assistance on any necessary service, whether it be for the protection of her Majesty's possessions or for the benefit of the trade of her Majesty's subjects, or otherwise, so long as the same does not interfere with or infringe any instructions they may previously have received from a superior naval authority, it being of course the general obligation on all her Majesty's civil and military officers to afford mutual aid and assistance to each other in all cases affecting the welfare of the Queen's service. In any very urgent case where requisitions made by governors or other authorised persons may interfere with the instructions under which the officers in command of her Majesty's ships are acting, the commanding naval officer on the spot must, in the absence of the commander-in-chief on a part of his station too distant to admit of reference being made to him in the first instance, very maturely weigh and consider the importance of any such required service as compared with that directed by his instructions, and he must then act with regard to complying with or refusing to comply with such requisition as his judgment shall point out to be right, always recollecting the very heavy responsibility he will incur by an infringement of the orders of the superior naval authorities unless the urgency of the case shall most fully warrant it." That had been a fixed instruction for between thirty and forty years, and had not been altered.



It is impossible to read this reply of Mr. Childers without a feeling of sorrow and shame, that the power of the navy was so cruelly exercised at Jamaica a year or two ago, merely to satisfy feelings of revenge and hatred, under the pretext of fear of rebellion, when urgency and discretion were both out of the way.

*Dietary Scale for Seamen.*

Mr. GILPIN asked the President of the Board of Trade whether he had considered the desirability of introducing a dietary for seamen into the Mercantile Marine Bill; and, whether he had been informed that the carrying out of the Admiralty scale for troops and her Majesty's Emigration Commissioners' scale for emigrants had been highly satisfactory, and that a similar scale for seamen could now be arranged without entailing additional cost to shipowners.

Mr. BRIGHT said that by the Merchant Shipping Act of 1854, the dietary scale agreed upon between the parties must be inserted in the articles of agreement. The Board of Trade had no power in the matter, and generally he might say that he thought that to settle the question of what should be the supply of food between the employer and the employed, would not be a very desirable occupation for the Department of the Board of Trade.

We always thought the Board of Trade was the place of appeal for our merchant seamen's rights. What will be said to the memorial at page 219, or are our mercantile seamen to be always at the mercy of their employers, and to take their chance of litigation to obtain those rights when they are withheld.

*The destruction of the Mermaid.*

Mr. HEADLAM asked what had been the result of the proceedings with the authorities of Spain concerning the destruction of the ship *Mermaid*.

Mr. OTWAY said the commission which had been appointed to inquire into the subject concluded their labours on the 27th of last month, and their decision was in favour of the claimants, who were to receive £3866 10s. 11d., payable within ninety days. This award was considered satisfactory by the claimants themselves.

We congratulate the owners of the *Mermaid* on this conclusion of their case.

*Sea Birds Preservation Bill.*

Mr. SYKES, in moving the second reading of this Bill, stated that on Tuesday, March 16th, a very large meeting of gentlemen interested in the ornithological history of the country would be held at the Zoological Society's rooms to discuss this subject. He had brought it forward as a farmer's, merchant seaman's, and deep sea fisher's question, disclaiming all acquaintance with it from the natural history point of view.

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THE LIFE-BEAT WORK.

Mr. O. STANLEY said that people in general were not perhaps aware of the importance of the measure, not only from the wanton cruelty practised in destroying these birds by thousands, but because they were one of the greatest preservatives against shipwrecks upon our coasts. He had written to the Trinity Board on the subject, and had received a reply from the Deputy-Master to the effect that they did all in their power to protect these natural fog signals, and would gladly hail any legislation having that object in view. He thought that to render the measure effective the preservation of eggs should be included, and he believed a clause would be introduced for that purpose.

The Bill was read a second time.

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### THE LIFE-BOAT WORK.

It must be a source of much satisfaction always to make approving remarks on the Annual Reports of the Royal National Life-boat Institution. The last of these documents was submitted to a public meeting, held at the London Tavern, Bishopsgate Street, on the 9th ultimo. His Grace the Duke of Northumberland, P.C., President of the Institution, in the chair on the occasion, and as adding to our satisfaction, at the liberal support received by the Society, it was gratifying to observe amongst those present—The Right Hon. Earl Percy, M.P.; Sir Edward Perrott, Bart.; Admiral Sir W. H. Hall, K.C.B.; Captain Richards, R.N., F.R.S., Hydrographer of the Admiralty; Thomas Chapman, Esq., F.R.S.; General Moore, C.B.; Colonel Mackenzie; James Glaisher, Esq., F.R.S.; William Botley, Esq., F.S.A.; Captain the Hon. F. Maude, R.N.; Colonel Fitz Roy-Clayton; Admiral J. W. Tarleton, C.B.; Francis Brodigan, Esq., J. P.; Admiral Sir George Sartorius, K.C.B.; Edward Birkbeck, Esq.; N. B. Downing, Esq.; Christopher Brown, Esq.; Francis Lean, Esq., R.N.; Arthur Pendarves Vivian, Esq., M.P.; and Captain Sir Frederick Arrow, Deputy Master of the Trinity House.

The admirable manner in which the noble chairman discharged his duties on the occasion elicited general satisfaction. His Grace observed, if we remember rightly, that, it was to him a source of great satisfaction to see so large an attendance before him, showing that the objects of the Institution had lost none of their interest in the hearts of the British public. It was only natural that the attention of the people of this country, should be attached to a Society like this, for if there ever was an Institution calculated to rouse the feelings of Englishmen and Englishwomen, it was one intended for the benefit of those who might be called the first labourers in the foundation of our ocean supremacy, and who, when overtaken by tempests and shipwrecks, looked to this Institution for succour. Its life-boats, now

spread over almost every point of the British Isles, where danger was to be apprehended, and the fearful gales of last winter must have told to every one, the absolute necessity of life-boats being placed on every available spot. The noble Duke further expressed a hope that *owners and charterers* of ships would have some regard to the condition of the vessels which *they* sent to sea, too many of which were now so ill-found that they were not only lost; but also the precious lives of those who were in them, were too often sacrificed! We trust that this special appeal will not be made in vain, and that it will be met by a response worthy of these gentlemen.

In a duly becoming spirit, gratitude to the Giver of all good was expressed for the success which continues to attend the labours of this Institution; and thanks to its supporters for their continued and generous aid.

As years went by, the Committee felt more and more sensibly the great responsibility that rested on them in conducting a work wherein human lives were at stake, and in the prosecution of which even one false step might be productive of lamentable consequences.

They felt, however, that if the responsibility was great, yet greater still was the privilege of being permitted to take a part in the noble work of saving their fellow men from an untimely and melancholy end; and they hoped, resting on the support which had not hitherto failed them, to persevere in that work for the time to come.

We shall now proceed with a brief account of the doings of this Institution during the past year, and could indeed must be the heart which will remain unmoved as we unfold our narrative describing some of the noblest works in which man can be engaged, of assuaging the sufferings of his fellow creatures, the great work in the past year, of the Life-boat Institution.

Since the last Report eighteen life-boats have been placed, or are about to be placed, on the coast; twelve of them being at new stations, and six taking the place of inferior or worn-out boats.

As a necessary completion transporting carriages and boat-houses have also been provided, where required.

The report stated that the Institution now possesses one hundred and ninety-eight life-boats. During the past twelve months they had been the means of rescuing *six hundred and three* persons from various shipwrecks; nearly the whole of whom were rescued under circumstances in which dear life could not have been saved by an ordinary description of boat.

On some of the occasions, when lives had been saved, the services of the life-boat crews had been of the most heroic character. Two instances, occurring in the month of December last, the one near Penzance and the other near Bideford, demand especial notice. On both occasions, when seventeen shipwrecked persons in all had been saved, the boats were described by eye-witnesses as having to encounter terrific and overwhelming seas, which at times threw them into a position almost perpendicular, and eventually both were upset, but happily both boats speedily righted themselves, and the crews

regained them in safety, and have expressed renewed confidence in their valuable qualities. Mr. N. B. Downing, Banker, of Penzance, and who is the Honorary Secretary of the Institution in that town, described much to the edification of the meeting, in graphic language, the noble services of the Penzance Life-boat on the occasion in question. (This was noticed in our number for last year.)

The crews of the several life-boats of the Institution continue to regard them with unbounded confidence. That confidence was undoubtedly fully justified by the very small number of lives which (considering the perilous character of the life-boat work) had been lost from them, amounting to less than an average of one in each year since the Institution, in the year 1852, undertook the work of providing our coasts with improved life-boats.

Gratifying and encouraging as was the fact that the National Life-boat Institution had contributed, during the past twelve months, to the saving of nearly nine hundred lives, it was sad to refer to the distressing loss of life that had taken place during the same period on the coasts and in the seas of the British Isles. As we have often shown in this Magazine, year after year our coasts are strewn with shipwrecks to the number of nearly 2,000, by which the lives of at least 5,000 or 6,000 men are placed in jeopardy. The number of lives thus imperilled during the past year was fully up to this average. The majority of these would undoubtedly have perished had it not been for the exertions which are promptly and unceasingly put forth on such occasions by the life-boats as well as by shore-boats, the Rocket and Mortar Apparatus of the Board of Trade, and other available and practicable means.

Notwithstanding these exertions, nearly 700 persons perished from shipwrecks on the coasts of the United Kingdom during the past year—a number which may appear large if uncomparred with the death-roll of former years, or if the enormous extent of British trade, and the dangerous character of our shores, are not considered; but which, whilst it was sufficient to call forth the continued efforts of this Institution, and the generous aid of a humane public, yet showed so great a reduction in the death list of the previous year—which was 1,333—as to afford every encouragement to persevere in the noble work of saving human lives as shown in the list given below.

The services of the Life-boats of the Institution continue not only to elicit the gratitude of the men who have been rescued, in many instances, from the very jaws of death, but also to call forth universal approbation.

The Committee had likewise proofs by them that many ships during the past year had been saved from destruction by the life-boats, which had been signalled off to them, remaining for hours together by the distressed ships, thereby encouraging their crews to renewed exertions and skill to contend successfully with the tempest.

Public meetings had been held in some of the large cities and towns of the country, to promote the objects of the Institution, thus testifying their appreciation of its great and national work, and affording the

most gratifying encouragement to the Committee to persevere in their efforts on behalf of shipwrecked sailors.

Attention was called to the unceasing efforts of the Board of Trade, in maturing and maintaining the Rocket Apparatus in a state of thorough efficiency. That agency contributed every year, under the able management of the officers and men of the Coastguard service, to the saving of hundreds of lives from shipwreck in situations where, from the presence of rocks and other impediments, it would be absolutely impracticable for Life-boats to be rendered equally available.

The number of lives saved during the forty-five years from the establishment of the Institution in 1824, to the end of the year 1868, either by its Life-boats or by special exertions for which it had granted rewards, was as follows :—

In the Year.	No. of Lives Saved.	In the Year.	No. of Lives Saved.	In the Year.	No. of Lives Saved.	In the Year.	No. of Lives Saved.
1824	124	1836	225	1848	123	1860	455
1825	218	1837	272	1849	209	1861	424
1826	175	1838	456	1850	470	1862	574
1827	163	1839	279	1851	230	1863	714
1828	301	1840	353	1852	773	1864	698
1829	463	1841	128	1853	678	1865	714
1830	372	1842	276	1854	355	1866	921
1831	287	1843	236	1855	406	1867	1086
1832	310	1844	193	1856	473	1868	862
1833	449	1845	235	1857	374		
1834	214	1846	134	1858	427		17,849
1835	364	1847	157	1859	499		

This is certainly a glorious life-saving record, of which our country may well be proud, reflecting honour, as it does, alike on those who have personally by their intrepidity and exertions contributed to the happy result, and on those who have, by their liberality, enabled the Institution to effect and encourage its accomplishment.

During the past year, 13 Silver Medals, 15 Votes of Thanks inscribed on vellum and parchment, and £2,431 had been granted for saving the lives of 862 persons by Life-boats, shore and fishing-boats, and other means, on the coasts and outlying banks of the United Kingdom. The rewards of the Institute continued to be regarded by the Coast boatmen and Fishermen as next in importance to those granted by the Queen.

Since the formation of the Society it has expended on Life-boat establishments £214,439, and voted 90 Gold and 801 Silver Medals for saving life, and pecuniary rewards to the amount of £29,167.

The Local Branch Committees, which constituted so important a portion of the machinery of the Institution for the supervision of its several Life-boat establishments, were unceasing in seconding the efforts of the Parent Society.

It was gratifying to find that the receipts of the Institution had been during the past year £31,668 9s. 8d.; of that sum no less than £6,713 0s. 2d. were special gifts to defray the cost of 13 Life-boats.

It was natural that the Committee should express their thanks to the many Ladies who continued to give their sympathy and support

to the Institution; and the remarkable fact was alluded to in courteous terms that Ladies had contributed £21,200 to defray the cost of sixty-two life-boats, which are stationed on various parts of the coasts of the United Kingdom, and which every winter save a large number of lives.

The Institution had received during the past year many gratifying donations.

The Committee had lost several valued friends during the past year, and particular reference was made to Admiral Robert Gordon, and Captain C. R. Egerton, R.N., both of whom had, for many years past, been active members of its Committee of Management.

We feel bound to give prominence to the legacies which had recently been left to the Institution, for by these acts of benevolence on the part of the departed, the stability and perpetuity of the Institution will hereafter mainly depend.

Here are the deeds, which though of deceased persons, still speak in noble words :—

	£	s.	d.		£	s.	d.
Mr. George Berger, New-castle Street, Strand.....	10	10	0	Thomas Temple Silver, Esq., Woodbridge .....	650	0	0
R. S. Fydell, Esq., Rutland	50	0	0	The Earl of Shrewsbury and Talbot, Probable Share of Residue, not to exceed ...	250	0	0
Felix Slade, Esq., Lambeth	300	0	0	Edmund Astrop, Esq., Hull	19	19	0
Mrs. Mary Chapman, Aldborough .....	60	0	0	Miss E. S. Warner, Bath ...	350	0	0
E. A. Bromehead, Esq., Thornthwaite, Cumberland	100	0	0	W. Jones, Esq., Norwich ...	200	0	0
Miss Louisa Hall, Maida Vale (New Three per Cents) .....	1000.	0	0	W. Naylor, Esq., Twickenham .....	500	0	0
E. D. Baker, Esq., New-castle Street, Strand ...	20	0	0	Francis House Kingston, Esq., Harpenden (Stock)	500	0	0
Dr. G. E. Aldred, Richmond (Bonds) .....	100	0	0	Jacob Gorfenkale, Esq., Liverpool .....	500	0	0
Joseph Hudson, Esq., Barrow-upon-Soar .....	100	0	0	J. S. Beckett, Esq., Tor-moham, Devon .....	600	0	0
Friend Hoar, Esq., Rochester	10	0	0	William Dangar, Esq., Cheltenham .....	200	0	0

We observe that during the past year £10,834 19s. 9d. was expended on additional Life-boats, transporting-carriages, boat-houses, and necessary gear; £6,513 6s. 7d. on the expenses of repairs, painting, refitting, etc.; and £6,573 13s. 7d. in rewards for services to shipwrecked crews, coxswains' salaries, and quarterly practice of the Life-boats' crews; making altogether, including liabilities amounting to £4,668 6s. 6d. for Life-boat Stations now in course of formation, and other expenses, a total of £31,585 4s. 8d.

A public accountant, had as usual audited the accounts of the Institution.

The Institution have now as we have previously mentioned under its charge a magnificent fleet, consisting of 198 Life-boats, and it will be at once evident that owing to its magnitude the costliness of its operations is unavoidable; yet it must be a gratifying fact, that the generosity of the Public has in this, as in every other good and beneficent work, been proportionately large and liberal.



To maintain and perpetuate these operations is a matter of unceasing solicitude on the part of the Committee, who cannot fail to be deeply sensible of the responsibility incurred in the management of this great and national Institution. Nevertheless, encouraged as they had been by the public, aided also by their invaluable local organisation, and by their own able and experienced Secretary and two Inspectors of Life-boats, they did not shrink from that responsibility; on the contrary, they appear determined, with the continued blessing of Almighty God, to leave no effort untried that can in any way tend to decrease the loss of life from shipwreck on the coast of the United Kingdom.

The Life-boats of the Institution in 1868 were instrumental in saving the crews of the following wrecked vessels :

	Lives Saved.		Lives Saved.
Sloop <i>Industry</i> , of Whitby .....	2	Brig <i>Jabez</i> , of Scarborough .....	8
Schooner <i>Mulgrave</i> , of Whitby .....	2	Ship <i>R. H. Tucker</i> , of Wisconsin, U.S. ....	27
Schooner <i>Seven Brothers</i> , of Wicklow .....	3	Brig <i>Oscar</i> , of Tonsberg .....	8
Ship <i>Oasis</i> , of Liverpool .....	21	Newbiggin Fishing Boat—Saved vessel and crew .....	4
Schooner <i>Maria</i> , of Newport, Monm. ....	5	Fishing Coble <i>Gentle Annie</i> , of Redcar .....	3
Schr. <i>Edward Stonard</i> , of Lancaster .....	5	Pilot Coble <i>Sybil</i> , of Redcar .....	2
Several Fishing Boats belonging to Pittenween and St. Morman—Rendered assistance.		Ketch <i>Garside</i> , of Bridgewater .....	2
Schooner <i>Mischief</i> , of Carnarvon ...	6	Schooner <i>Elizabeth Davy</i> , of Goole—Assisted to save vessel and crew ...	3
Schr. <i>Douglas Pennant</i> , of Carnarvon ..	4	Schooner <i>Airdrie</i> , of Stranraer .....	4
Smack <i>Clipper</i> , of Great Yarmouth—Saved vessel and crew .....	8	Several Buckie Fishing Boats .....	45
Schooner <i>Anne</i> of Aberystwith .....	4	Schooner <i>Carnaen</i> , of Hayle .....	4
Brig <i>Ellen</i> , of Sunderland—Rendered assistance.		Schooner <i>Victor</i> , of Grimsby—Assisted to save vessel and crew .....	5
Brig <i>Britain's Pride</i> , of Falmouth—Saved vessel and crew .....	8	Fishing Boats of Cullercoats—Rendered assistance.	
Schr. <i>Denbighshire Lass</i> , of Beaumaris ..	4	Smack <i>Rover</i> , of Annan .....	1
Schooner <i>Sarah Caroline</i> , of Girvan. ....	5	Fishing Boat <i>Active</i> , of Collardyke—Assisted to save vessel and crew ...	4
Smack <i>Kate</i> , of Ipswich—Assisted to save vessel and crew .....	4	Government Lighter <i>Devon</i> .....	1
Schooner <i>Kate</i> , of Liverpool—Rendered assistance.		S. S. <i>Ganges</i> , of Hull—Remained alongside, and rendered assistance.	
Barque <i>Kate Agnes</i> , of St. John's, N.B. ....	14	S. S. <i>Augusta</i> , of Bristol—Rendered assistance.	
Smack <i>Gloucester Packet</i> , of Cardigan ..	2	Barque <i>Betty &amp; Louise</i> , of Hamburg ..	9
Ship <i>Omega</i> , of Newcastle .....	7	Brigantine <i>Francis</i> , of Shields .....	4
Schooner <i>Gipsy</i> , of Chepstow .....	5	Flat <i>William</i> , of Carnarvon—Assisted to save vessel and crew .....	2
Pilot Gig belonging to St. Ives .....	1	Brigantine <i>Theodoros</i> , of Liverpool—Assisted to save vessel and crew ...	15
Schooner <i>March</i> , of Liverpool .....	3	Brig <i>Rochdale</i> , of London .....	7
Schooner <i>Richard</i> , of Bangor .....	3	Ship <i>Grand Bonny</i> , of Liverpool—Remained alongside.	
Brig <i>Phæbe</i> , of Scarborough—Rendered assistance.		Brig <i>Robert and Sarah</i> , of Blyth ...	8
Schooner <i>Avenir</i> of Nantes .....	1	Smack <i>Mary</i> , of Hull .....	5
Schooner <i>Exchange</i> , of Goole .....	3		
Barq. <i>Sparkling Wave</i> , of Sunderland ..	15		

Schooner <i>Mary Jane</i> , of Padstow ...	3
Sloop <i>Emperor</i> , of Grimsby—Remained by vessel.	
Barque <i>Anne Scott</i> , of Arbroath.....	9
Bar. <i>Mauda</i> , of Liverpool—Saved ves.	
Ship <i>Nictauz</i> , of St. John's, N.B.—Rendered assistance.	
Schooner <i>Selina</i> , of Swansea .....	2
Schooner <i>Wave</i> , of Boston—Saved vessel and crew .....	4
Ship <i>Conway Castle</i> , of Liverpool—Rendered assistance.	
Fishing Boat belonging to Loos—Saved boat and crew .....	2
Smack <i>Cynro</i> , of Almwch .....	2
Sloop, <i>Richard</i> , of Goole .....	3
Two Withernsea Fishing Boats .....	9
Schooner <i>Athol</i> , of Ardrossan—Rendered assistance.	
Brigantine <i>Agenoria</i> , of Lowestoft... ..	5
Brigantine <i>Douglas</i> , of Guernsey—Assisted to save vessel and crew ...	7
Brig <i>Arran</i> , of Irvine—Saved vessel and crew .....	5
Schooner <i>Dasher</i> , of Amlwch—Assisted to save vessel and crew .....	4
Swedish Barque <i>Balder</i> —Saved vessel.	
Schooner <i>John C. Wade</i> , of Newry... ..	2
Sch. <i>Mar. Cunningham</i> , of Whitby. ....	2
Yacht <i>Fvam</i> , of Wisbeach .....	1
Ship <i>Empire Queen</i> , of Dublin—Saved vessel and crew .....	21
French Smack <i>Jules Josephine</i> .....	4
Brigantine <i>Nameless</i> , of Cork .....	7
Schooner <i>Emily Ann</i> , of Carnarvon .....	3
Brigantine <i>Helen Anna</i> , of Cork.....	5
Brig <i>Peregrine</i> , of Cork .....	2
Schooner <i>Sarah Pringle</i> , of Liverpool .....	3
Schooner <i>Annie Jane</i> , of Runcorn... ..	1
Schooner <i>Dove</i> , of Barrow—Remained alongside.	
Barque <i>Economist</i> , of Milford—Rendered assistance.	

Ship <i>Favourite</i> , of Fleetwood—Rendered assistance.	
Schooner <i>Vivid</i> , of Wexford.....	5
Austrian Barque <i>Mea</i> .....	17
Smack <i>Canton</i> , of Scarborough—Saved vessel and crew .....	4
Barque <i>Honfleur</i> , of Sandiford, Norway—Saved vessel and crew .....	13
Schooner <i>William Henry</i> , of Belfast ..	5
Barque <i>William Gillies</i> , of Greenock ..	15
Ship <i>Castilian</i> , of London .....	18
Schooner <i>Atlanta</i> , of Kirkwall .....	11
Schooner <i>Vision</i> , of Drogheda .....	5
Barque <i>North Britain</i> , of Southampton ..	8
Schooner <i>Mail</i> , of Alloa—Saved vessel and crew .....	6
Lugger <i>Ranger</i> , of Yarmouth—Saved vessel and crew .....	11
Brigantine <i>Ino</i> , of West Hartlepool. ....	6
Schooner <i>Prudence</i> , of Aberystwith. ....	4
Brigantine <i>Jane</i> , of Workington.....	4
Sloop <i>La Jeune Fanny</i> , of St. Malo—Saved vessel and crew .....	5
Lugger <i>Augustine</i> of Port L'Abbe—Assisted to save vessel and crew ...	4
Fishing Coble of Yarrow—Assisted to save vessel and crew .....	2
Schooner <i>Diamond</i> , of Goole .....	3
Barque <i>Pace</i> , of Flume.....	9
Smack <i>Castle</i> , of Aberystwith.....	9
Schooner <i>Pioneer</i> , of Exeter .....	4
Brigantine <i>Hitena</i> , of St. John's, New Brunswick—Saved vessel and crew .....	6
Brig <i>Bilboa</i> , of Seaham .....	6
Brig <i>Flying Cloud</i> , of Bidford .....	10
Total Lives saved by Life-boats, in 1868 .....	603
During the same period the Institution has granted rewards for saving Lives by fishing and other boats. ....	252

General Summary for 1868.

		£	s.	d.
Number of Lives rescued by Life-boats, in addition to 25 vessels saved by them .....	603			
Number of Lives saved by Shore-boats, etc. ....	259			
Amount of Pecuniary Rewards for Saving Life during the Year .....		2,431	6	4
Honorary Rewards: Gold and Silver Medals .....	13			
Votes of Thanks on Vellum and Parchments .....	15			
<b>Total.....</b>	<b>28</b>	<b>862</b>	<b>2,431</b>	<b>6 4</b>

## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 163.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen Mls	[Remarks, etc. Bearings Magnetic.]
14. Wrecks in the	Downs and Gull Stream	... ..	...	...	...	See Note No. 14.
15. Arosa Bay	Spain S. Coast	Rua Island	F.	52	11	Established 19th March, 1869.
16. Various, on N. Coast of	France	... ..	...	...	...	See Note No. 16.
17. Para River Light Vessel	Entrance	26° 9' 1" S. 47° 54' W.	R.	30	8	Est. 24th November, 1868. See Note No. 17.
18. Leghorn	Breakwater	South End	F.f.	74	9	Est. 1st March, 1869. Flash every minute. See Note No. 18.
Cape Morno	G. of Corinth	38° 22' N. 21° 53' E.	F.	46	8	Est. 27th January. Red.

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

*Note 14.*—15th February, 1869.—Information having been received at the Trinity House that, owing to the hurricane of Friday evening, the 12th February, three vessels, with masts showing out of water, have been sunk between the Elbow buoy and the shore; one small vessel on the Quern, close to the buoy; one vessel inside the South Brake buoy, another to the southward of it, and two vessels in the Gull Stream; and that fears are entertained that more have foundered, the masts of which are not visible.

Mariners are hereby warned to use extreme caution in navigating these channels.

Wreck buoys will be placed to mark the sunken vessels as promptly as possible, and such other measures taken as may be expedient for the safety of navigation.

*Note 16.*—*Snow or Mardyk* light vessel will be moved about one mile westward of her present position, to near *Snow* bank in 11 fathoms, and will lie in 51° 3' 5" N., 2° 12' 6" E.

*Dyck Lights.*—A light vessel will be placed in 11 fathoms water, 3½ miles N. by W. ¼ W. from Gravelines lighthouse; she will shew two *fixed* white lights, one 34 feet, the other 23 feet above the sea, and should be seen distant 11 miles. The light vessel will be painted *red*, and have a ball on each mast. Position 51° 3' 1" N., 2° 3' 1" E.

*Ruyttingen* light vessel will be moved to north part of Out Ruyttingen bank, about a mile from its N.E. extremity, in from 8 to 10 fathoms water, and N. by W.  $\frac{1}{2}$  W.  $11\frac{1}{2}$  miles from Dunkerque lighthouse. Position  $51^{\circ} 12' 9''$  N.,  $2^{\circ} 12' 1''$  E. The names of each light vessel will be painted in white letters on their sides.

*Directions.*—The Dyck lights kept in line with the revolving light of Dunkerque will lead to Dunkerque roads from the westward. The Snouw and Dyck lights when in line also indicate the position of Dunkerque roads. The Dyck light kept a little to the left, or eastward, of the fixed light of Gravelines, leads through the passage between the western point of Out Ruyttingen and the small bank west of it.

As the exact date on which these alterations will be made cannot be given, the Navigator will be cautious when in the vicinity about the time proposed for the change. If the light vessels be moved, vessels from the North making for the French coast, after passing the West Hinder Light 3 to 4 miles, will see the Ruyttingen light to the S.S.W. when Dunkerque light bears South. Vessels from the west keeping in deep water, will see the Ruyttingen light to the East on losing sight of Walde light, when Gravelines light should bear S.S.E.

*Buoys.*—The following nine buoys will be placed on the outer margin of the banks extending from the Bergues bank to the Riden of Calais:—viz., *Bergues Bank*, No. 1, a black buoy with ball in 11 fathoms, N.  $\frac{3}{4}$  E. from Dunkerque lighthouse, in lat.  $51^{\circ} 16' 25''$  N., long.  $2^{\circ} 18' 9''$  East. Three buoys on the Great Bank of Out Ruyttingen, viz.:—*North-east Buoy*, No. 3, black. *Middle Buoy*, No. 5, black. *South-west Buoy*, No. 7, black. Also, three buoys on the Little Bank of Out Ruyttingen, viz.:—*North Buoy*, No. 2, red. *South Buoy*, No. 4, red. *West Buoy*, No. 9, black and white chequered. Also, Two buoys on the Riden of Calais, viz.:—*North-east Buoy*, No. 6, red. *South-west Buoy*, No. 1, black. The buoys at the western entrance of Dunkerque roads, viz.:—Black Buoy, No. 1, and Red buoy, No. 2, will be removed about a mile to the eastward of their present position.

*Note 17.*—The light vessel has one mast, and is moored in 16 fathoms water; from her, the point of the island of Tajoca bears S.S.E., and Curaza point S.E.  $\frac{1}{4}$  E.

*Directions.*—When making for the entrance of the river Pará after sighting the light, keep her on the port hand, and pass half a mile from her, steering S.W.  $\frac{1}{2}$  W., paying great attention to the tide, as the ebb sets towards the banks, and the flood from them.

*All bearings are Magnetic. Variation  $1^{\circ} 50'$  Westerly in 1869.*

*Note 18.*—From the lighthouse on the North end of the breakwater a sector of green light will be exhibited through an arc of 65 degrees seen from, and embracing the extent of, the Meloria bank.

*Directions.*—Vessels near the Meloria bank will avoid too close an approach to it on the North and South, by keeping the white portion of the North breakwater light in sight.

## PROTECTION OF SEA-BIRDS.

LEGISLATION is really in an active condition, for although it ignores the "dietary scale of our Mercantile Seamen," to compel their employers to do what they engage to do, and thereby obliging the merchant seamen themselves to undertake that task at their own cost, still this same legislation does not find the protection of gulls even beneath its doctrine. And yet this seems strange, for we should have held that seamen are more important to their country than a great many sea gulls! However, strange things do occur sometimes, so let the gulls and their feathered brethren of the briny ocean rejoice in their good fortune, and we too will heartily rejoice with them. Wishing that their success had been greater than it is to be by parliamentary edict; for it is to extend only to four months out of the year (April, May, June, and July) to include the whole time of incubation, and we much fear that they will yet suffer from the idlers' guns, and get shot down to the destruction of the race, on the more public and frequented parts of our coast.

Those parts of our sea board which are far away from common intruders, such as the high lands and islands of Scotland, and the still more distant and unfrequented western coast of Ireland, will keep their feathered population, who might laugh (if they were such beings as do laugh) among the wild recesses of their lofty cliffs at the boy sportsman, or the fiat of parliament! Among the western islands of Scotland, not to mention the superb mountain scenery of the west of Ireland, how plentiful is the sea-bird there, but happily out of the reach of the fowler. In the low island of Flad da Huna swarming with puffins, which come there to breed in May and depart again precisely on the 12th of August, risking these twelve days over the parliamentary date of exemption from being shot. But among

"The woods and wilds and solitary glens,"

of the Hebrides, and the no less unfrequented cliffs of the opposite shore of Scotland across the Minch, what immunity does their distance afford their feathered inhabitants from the fowler's gun; albeit, one or two may be heard in a season. Mother Carey's chickens revel there in their solitary wave, the parasite gull can there chase his neighbour unharmed on the wing, to make him disgorge his food to undergo a second demolition by the pressure, after a screaming and terrified flight, as he falls exhausted on the water; while the great northern loon and the curlew are making their meals among the rocks of the weedy shore amidst wild ducks, geese, and pigeon and plover, further inland enjoying their green food, leaving the divers and dipsticks to find their's in the ocean wave. All these we say, may look down from their distance with the eagle of the cliff, perched on a projecting pinnacle a thousand feet high, in their safety on any measures for their protection.

However, the projected law is to protect all these from the fowler's

gun, unless it can be proved that they are really required for his food; a poor exception truly, for where will not the *devotee* of such sport find some such saving excuse as will suit his purpose to cover his propensity. And as time admits for the law being completed early, we may presume that the approaching months of spring and summer will see some quiet among the sea-birds of our shores.

This same subject of the preservation of sea-birds we perceive has engaged the attention of our daily press, in one page of which we find the following information on it. We will not undertake to defend that portion of our fair readers to whose propensity for feathers allusion is herein made, as no doubt their own reflection will prove a far more effectual monitor than our remarks. And we may, therefore, content ourselves with the exultation that no such charge can be laid at the door of their male companions. But we can attest to the truth of the importance of the sea-bird to the mariner in apprising him of the proximity of the shore, and we well remember being suddenly made aware of the too close proximity of a cliff precipice, which had been unperceived, until the soaring of the sea-bird apprised us of our dangerous position in a walk.

From New Zealand it says:—Not long since a cry came forth that the small birds were getting day by day scarcer and scarcer. Early navigators had spoken with delight of the melodious notes with which the feathered songsters filled the woods. Now scarcely a note is to be heard. "The silence of our summer mornings," wrote a colonist, "is like a note struck out of natural melody." The common rat had worked all this mischief, robbing the nests of their eggs, and devouring the young fledglings. And now a complaint is made that in England certain birds—chiefly sea-birds—are being rapidly destroyed. In this case, it is to a cause of quite a different character that the destruction of the birds is ascribed. Can our readers guess what that cause may be? As Madame de Sevigné would have said, we "give them the riddle in ten;" and we might give them a hundred guesses without their lighting on the truth. The ladies and the fashion are the cause of the terrible destruction of sea-birds. We have it on the authority of a Fellow of the Royal Society. Mr. Flowers states that "the fashion adopted by ladies of wearing feathers in their hats and bonnets, has resulted in the terrible destruction of grebes, kingfishers, seagulls, etc." So far has this destruction proceeded that the Manx authorities obtained a special Act of Parliament—not indeed to prevent ladies from wearing feathers in their hats, but to prevent the destruction of sea-birds on the coasts of the Isle of Man. And the reason they alleged for desiring the preservation of the birds will perhaps seem to many as surprising as the cause of the birds' destruction. It appears that the cries of the birds are a more effectual warning to seamen of the dangers of a rock-bound coast than lighthouses or fog-bells. In storms, doubtless, the roar of the breakers would drown the cries of the birds. Yet birds when they please can make hideous noises. Audubon speaks of one "which utters a shriek so loud that the woods echo for miles around to the dismal sound." And White,

of Selborne, says he has "known a whole village up in arms on account of the cries of the white owl, imagining the churchyard to be full of goblins and spectres."

It has been calculated that within a short time last year 230,000 eggs and young birds were destroyed along only eighteen miles of the coast of Yorkshire. It is time that something were done to save these useful creatures. We fear ladies will hardly adopt Mr. Flowers' suggestion, that they should leave off wearing feathers in their hats; nor is it likely that an Act of Parliament will be brought in to render the wearing of feathers a misdemeanour, punishable by the confiscation of the offending ornaments. But we may help the sea-birds in other ways. Bustards, storks, and cranes have been lost to this country in long past ages for want of efficient protection: it will not do to let seagulls, grebes, and kingfishers be destroyed likewise. We must watch our sea-birds as carefully as we have been watching our river fish; and the process will doubtless be as effective in one case as in the other. "Nature," says the Poet Laureate, is "careless of the type, she cares for nothing; all must go;" and if Nature operates in this particular case through the fashions, her destructive influence is likely to be none the less effective. It is in the power of man, however, to limit her action, or at least to delay its effects; and this is a case in which it behoves us to exercise this power.

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BOTTLE LEFT AT SEA.

St. Croix, 26th February, 1869.

SIR,—On or about the 14th instant, at Cane Garden Bay on the South side of this island, in latitude 17° 42' N. and longitude 64° 41' W., a bottle was picked up on the beach which contained the following, written on a leaf of paper in English, French, and Dutch. In English first, as follows, viz. :—

"Ltt. Q. Q.

"The finder of this bottle is most politely invited for the profit of science to give information of 'time and place' where this bottle was discovered, to the subjoined address.

"On board of the Dutch Ship *Fop-Smit*; longitude 31° 4' W., latitude 16° 41' N.

"The Lieutenant R. D. Navy,

"Sept. the 16th, 1868.

"NYGH.

"All is well on board.

"Adres, Holland, Rotterdam.

"H. NYGH, Esq.,

"Lieutenant R. D. Navy."

The preceding is as copied into our Newspaper. I have seen the original and read the ship's name *Top-Smit* in place of *Fop-Smit*, and at present, from memory the Lieutenant's name ZYGH in place of NYGH. I cannot make out at the beginning what the meaning is of Ltt., Q. Q., or D. D. As I consider that this bottle has been found

within a day or two after its reaching this Island, it renders its voyage of not quite six months more interesting, and will no doubt receive a place in your valuable Naval Magazine. The original is or has been forwarded to the Dutch Consul at St. Thomas, to be sent by him to Rotterdam.

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### SEAMEN'S GRIEVANCES.

A MEETING of Seamen was held on Wednesday, March 3rd, in the Albion Hall, Paradise Street, Liverpool, for the purpose of taking into consideration the necessary steps for the presentation of the following memorial to parliament. Mr. W. H. Baldwin presided, and, after explaining the object of the meeting, moved the adoption of the following memorial, which is to be placed in the hands of S. R. Graves, Esq., M.P., for presentation:—

“ 1. That your petitioners gratefully acknowledge the benefits conferred upon them by the Mercantile Shipping Act of 1854.

“ 2. That in the opinion of your petitioners, which is founded upon their own experience, the men employed in the British Mercantile Marine Service are subject to great disadvantages, which can only be remedied by further legislation.

“ 3. That the present way in which ships' articles are drawn up is arbitrary and productive of inconvenience and injustice, and that advantage is taken of the articles to bind Seamen to other duties than those which properly belong to them on board ship, and to membership in 'benefit societies,' which have no natural relation to the purpose for which articles of agreement were designed by your Honourable House.

“ 4. That it would conduce to the welfare of Mariners and the interests of Owners of ships if, at the time of signing articles, it were made compulsory upon Owners to give to any Mariner who required it an Allotment Note for two-thirds of his pay, for the support of his family or relations, and that it would tend to diminish the evils that arise from the present system of Advance Notes.

“ 5. That in the opinion of your petitioners it is undesirable and unjust that a Mariner who fails to comply with the articles of agreement is punished criminally, while he is compelled to take costly and tedious civil remedies against an employer who fails on his part.

“ 6. That the laws and regulations which regulate the supply of food to Mariners are in many cases evaded or defied by Owners or Masters, that the quantity is deficient, the quality inferior, and that no inspection of food is provided or enforced.

“ 7. That under the present system so much time elapses between the discharge of Crews and their being paid off that much suffering and immorality arise therefrom.

“ 8. That in the opinion of your petitioners it would be of great advantage to Owners, Masters, and Seamen, and the nation at large, if Seamen were required to pass a practical examination in Seamanship



before being allowed to sign as Able Seamen, and if it were made penal on the part of the Master, or other person, to engage uncertificated men.

“9. That great inconvenience and injury result to the Mercantile Interest of the kingdom from the large and increasing employment of foreigners in British ships. That within the last few years the proportion of foreigners to British Seamen has reached to more than one quarter of the whole.

“10. That great abuses have crept into the present system of shipping Seamen at the various Shipping-offices in the United Kingdom, which require the attention of the Legislature.

“Your petitioners, therefore, pray your Honourable House to appoint a committee to inquire into these and other grievances of the Merchant Seamen of the United Kingdom, or that your Honourable House will take such measures as may to your wisdom seem right.”

There are some cases in the foregoing worthy of consideration by the Board of Trade, and even this Board, much as it desires to promote our commerce, would do well to look into the complaint No. 9, before the present race of British seamen have left us.

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#### NOTES OF NOVELTIES.

*Boats in the Navy.*—One of the most important parts of the equipment of a ship of war is undoubtedly her boats and her capabilities. In this respect the ships of the English navy a few years since were far behind those of France or Russia, but at the present time, owing, it must be admitted, to the exertions of the Controller and Chief Constructor of the Navy, they are much more efficiently provided in that respect than the ships of any other nation. For some time after steam power was applied for the propulsion of boats attached to ships of the French and Russian navies, our first efforts in the same direction were to place twin-screw engines and boilers in the heavy built steam launches already attached to our ships, retaining them at the same time in all their original form as gun-carrying boats, with armed crews, and stores of shot, shell, masts, sails, oars, water, and provisions, etc., the clumsy bluff-bowed monsters being, when thus loaded, scarcely able to hold their way against a moderate wind or tide in a river way, and useless altogether for towing purposes.

The fitting out of two surveying sloops for service in the Chinese and Japanese seas led to the introduction of quite a different class of steamboat into our navy, a type of boat which more nearly approached that adopted in the French and Russian navies in its general principles as simply a despatch and towing boat, but excelling them greatly in having superior speed combined with the life-boat principle in the boats' construction, the latter arrangement rendering them unsinkable when filled with water to the gunwale's edge when carrying engine and boiler and a double crew on board. Quite recently also it has been proved that the engines of these boats can be driven noiselessly,

a most important desideratum when they may be engaged on reconnoitring or cutting out expeditions. And orders issued from the Admiralty direct that all such boats in future supplied to Her Majesty's ships are to be fitted with engines working upon the noiseless principle.

The builder to the Admiralty of these steam life-boat launches and pinnaces, Mr. John Samuel White, of East Cowes, Isle of Wight, has sent in to Portsmouth dockyard during the past week four pinnaces, Nos. 8, 9, 10, and 13, under his contract with the Admiralty, which have since been put through their trials by the officials of the yard, and very satisfactory and successful results obtained. After passing through the water-pressure test, they were finally tried over the measured mile. No. 8, 9, and 10 are boats of about 37 feet between perpendiculars, and are driven by single screw engines of six-horse power nominal. No. 8 was tried at a draught of water of 3ft. 1½in. aft., and 2ft. 4½in. forward. Her four-bladed common screw had a diameter of 2ft. 9½in., a pitch of 4ft., a length of 6¾in., and an immersion of the upper edge of 1in. The mean revolution of the engines were 249·33, and the boat's mean speed was 7·986 knots per hour. No. 9 was tried at the same draught of water as No. 8. Her four-bladed common screw had a diameter of 2ft., a pitch of 4ft., and a length of 6½in., and an immersion of the upper edge of 2¾in. The mean revolutions of the engines were 244·63, and the boat's mean speed was 7·988 knots per hour. No. 13 was tried at a draught of water of 3ft. aft. and 2ft. 5½in. forward. Her four-bladed common screw had a diameter of 2ft. 5½in., a pitch of 3ft. 4in., a length of 4½in., and an immersion of the upper edge of 3¾in. The mean revolutions of the engines were 282·66, and the boat's mean speed 7·288 knots per hour. No. 10 was tried at a draught of water of 3ft. aft. and 2ft. 8in. forward. Her four-bladed common screw had a diameter of 2ft. 9in., a pitch of 4ft. 2in., a length of 6¾in., and an immersion of the upper edge of 1½in. The mean revolutions of the engines were 249·5, and the boat's mean speed 8·040 knots per hour. It was boisterous weather when all the boats were tried over the measured mile. All four of the boats were very handsome and bouyant in their appearance when under full steam pressure running over the measured mile.

*Graving Dock at San Francisco.*—The following communication has been forwarded to the Board of Trade :—

“ British Consulate, San Francisco, Nov. 16, 1868.

“ SIR,—I have the honour to inform you that a graving dock, excavated in the solid rock, and four miles distant from the business part of the Port, has just been completed. It is of the following dimensions: Extreme length, 450 feet; length on blocks, 416 feet; width of top, 120 feet; width at bottom, 60 feet; and will take in at mean high tide a vessel drawing 22 feet. The dock is fitted with a caisson gate, and supplied with two centrifugal pumps, which will entirely free it from water in two hours. The charges for docking vessels are :—For steamers, first day, 75c., 3s. per ton; ditto each

succeeding day, 37½c. ditto. For sailing vessels, first day, 50c. ditto; each succeeding day, 25c. ditto. With the exception of the United States' Government Sectional Floating Dock, situated at Mare, Ireland, 25 miles from this Port, there has not been until now a dock on this Northern Coast capable of taking up a large vessel. The proprietors of the stone dock have also just completed a floating dock capable of taking up vessels of 1,500 tons.—I have, etc.—W. L. BOOKER, Consul."

*Docks at Bordeaux.*—The Council of the Prefecture of Bordeaux met a few days back to receive tenders for the construction of the new docks in the northern quarter of that town. The works had been estimated by the Government Engineer at a cost of about six millions of francs. Fifteen offers were put in. The proposals from three were to take the work at the estimated price; the others at reductions varying from three per cent. to sixteen, at which rate the tender of M. Bernard, of Bordeaux, was accepted. The entire works will occupy a superficies of 120 acres, and will extend for 1,200 metres (the metre is rather more than three feet three and a half inches) from east to west, and from 450 to 500 metres from north to south. The basin itself will be 600 metres long, 120 broad, and of an average depth of seven metres. It will present a surface of about twenty-five acres of water, affording room for seventy-six large vessels. This dock will communicate with the Garonne by a canal 120 metres long, having locks at each end. The total cost is calculated to amount to twelve and a half millions of francs, of which the Chamber of Commerce advances ten millions, to be reimbursed by a toll of twenty centimes per ton on vessels of all countries entering the Port of Bordeaux. This charge is to be levied from the 1st January of the present year. The State likewise engages to concede to the Chamber of Commerce, at cost price, ground for erecting bonded warehouses adjoining.

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#### NEW BOOKS.

**BIOGRAPHICAL SKETCHES.**—By *Harriet Martineau*. *McMillan and Co., London*, 1869.

A NEAT and engaging little volume has just appeared from an experienced hand, sufficiently attractive to command attention from its birth, if not from the names it bears on its pages. But, after all, biography is tender ground. There are briars and brambles in the path of its follower, that are sure to pester and annoy, unless avoided with the most scrupulous care. And who can do this? Be its author never so punctilious, and never so careful to follow the injunction most religiously—

"Nothing extenuate, nor ought set down in malice"—

still the biographer must inevitably be in the hands of informers here and there. That sage person with whom these communicate may know a great deal, and be able to vouch for it; still how much is said

in biography that is something worse than problematical. And even in the "Sketches" before us, from the prolific and much admired pen of Miss Martineau, one at least is not exempt from the blemish. In plain words, she has stated and restated here what has been denied in our own pages long ago by an authority, than which none can be higher.

In our volume for 1858 we recorded the death of Admiral Sir Francis Beaufort, hydrographer to the Admiralty, "rich in honours and ripe in years," and very soon afterwards the authoress of the work before us produced a biographical memoir of the Admiral that appeared in one of our daily journals.\* Soon after the appearance of that memoir a letter was addressed to this journal by Mrs. Heywood, who denied the authenticity of a passage in the above memoir as unfounded and untrue.

A reference to the journal would shew the erroneous statement complained of, but which as it is brief we may quote here.

Miss Martineau said :—"After the resignation of the Duke of Clarence as Lord High Admiral, Lord Melville again became First Lord of the Admiralty, and one of his first objects was to fill the office of Hydrographer with the best man that could be found, who should hold it permanently."

"There were many applicants, but by 1829, two names only remained for a choice, and one of them at least was not an applicant—Captains Beaufort and Peter Heywood."

It was from the inference which might be drawn from this paragraph, as well as the assertion concerning *application for the office*, that Mrs. Heywood desired to shield her late husband, Captain Peter Heywood; and knowing as she did well, the real truth of the whole, who could be surprised that she should indignantly deny the truth of the obnoxious statement; which combined merely what had been said by Sir John Barrow in his autobiography with the offending words so mischievously thrown in, "one of them at least was not an applicant," an ambiguous assertion, and one really in itself, if not worth nothing, looked as if it were intended as a reflection on honour!

Now, any one might have expected that the objectionable assertion that Mrs. Heywood was careful to deny, would not have been repeated by the same authoress ten years afterwards, when both officers are gone by; yet here it is plain enough in page 223 of these "Sketches."

For our own part, we believe that neither of the officers (both most strict in honour's cause) could have been the "applicant." Under one, we have personally served all the time he was in the office in question, and of the other, we know from the authority mentioned, that he absolutely refused the personal offer of it from Lord Melville. How then could either of them have been an "applicant," although we are told by Miss Martineau, that "one of them at least was not an applicant," leaving it to be inferred that the other was! We say again, it was a gratuitous assertion, and whether intended or not, that it carried a thorn that was calculated to rankle somewhere!

\**The Daily News.*

Yet we are far from imputing any such intention to the authoress of these sketches, although we regret for her sake to see it repeated as it is in the work before us, after an interval of ten years from its original appearance and denial.

We have thus pointed to a blot in one of the memoirs of this little book. The officers which it concerns, were long and well tried friends, and each one was incapable of forestalling the other by endeavouring (unknown to him) to obtain the appointment to a high office of the Government, that was attained by one. They have both gone from us. But the memory of their names must not be sullied by the imputation which it conveys; nor must the reflections of the relatives whom they have left among us be embittered by the insinuation it conveys. Will Miss Martineau obliterate the offensive words? As she values truth, and its worth, in the reputation of her own works, we can have no doubt that she will do so.

But we hope to return to this very interesting volume, which has a more than ordinary attraction for our notice. We may add that the work before us is the first edition, the second being already in the press.

**ANNALES HYDROGRAPHIQUES, ETC.**—*Collection of Sailing Directions and Notices relative to Hydrography and Navigation. Published by the Dépôt des Cartes et Plans de la Marine. Volume 31, Paris, 1868.*

WE have received the four parts of this very valuable work, replete with stores of information most important to the Seaman, and adding to the high character of the office from which it is issued. In the last part we perceive some interesting papers on the Bar of Takow, the Longitude by Circum-meridional Altitudes; and a lengthy but highly interesting paper on the density, saltness, and currents of the Atlantic. We must take another opportunity of looking to these.

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CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in March, 1869.—*Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill. London.*

2669 a, b DE m = 0·5 Channel Islands, and Coast of France Northern and Southern portions. Staff-Commander Richards and Pilote Francais, to 1868, two sheets. 2s. 6d.

1872  $\frac{DE}{2}$  m 0·5 North Sea, Belgium North Coast, approaches from Dunkerque to Schelde River. Lieut. Stessel, Belgian Navy, 1866. 1s. 6d.

254 DE m = 2·0 West India Islands, Montserrat Island and Plymouth anchorage. Staff-Commander J. Parsons, R.N., 1867. 2s. 6d.

2544 DE m = 0·2 South America, East Coast, Rio de la Plata, with four Plans, various authorities to 1868. 2s. 6d.

EDWARD DUNSTERVILLE, *Commander, R.N.*

*Hydrographic Office, Admiralty, 20th March, 1869.*

THE  
NAUTICAL MAGAZINE

AND

NAVAL CHRONICLE.

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MAY, 1869.

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THE RULE OF THE ROAD AT SEA.—REMARKS ON SHIPS' LIGHTS.

*By a Nautical Assessor.*

*To the Editor of the Nautical Magazine.*

SIR,—You may have remarked how many collisions have occurred from a *misuse of the Rule* about the port helm—how many disasters of this kind have been owing to a vessel altering her course which would have taken her clear, and actually going out of her way to run into danger, as if the transit of ships at sea were a *legal* problem instead of a *nautical* one, as mariners ought to know it must always be as long as there is a sea, and ships to sail on it.

The Marine Department of the Board of Trade, by its latest regulations, has left mariners without an excuse in this matter, yet as an additional aid to seamen it may not be useless to remind them, that no rule of any kind can be meant to supplant the common principles of safety belonging to navigation proper, and for the carrying out of which every captain is responsible.

The following are offered as a very simple and short form of Night Rules for Ships' Lights, and if they are found of any service, it will be only because they are easily learnt and remembered.

PASSING SHIPS.

With red light on the *port* in view.  
Keep on your course and nothing do.

A green light on the *starboard* side  
Can nothing ill to you betide.

When red and green *abeam* you make,  
That ship will pass *across your wake*.

## MEETING SHIPS.

When ahead *both* lights appear,  
*Port* your helm that ship to clear.

## CROSSING SHIPS.

Where there is *danger of collision*, the rule to port the helm holds good in *most* cases. But it is impossible to define the limits or extent of such a rule for useful purposes, and each case ought to be determined according to the relative positions of the respective ships, and other circumstances. I will only mention here what appears a clear case for using the *starboard helm*;—it is where a red light is seen approaching abaft the *starboard beam*, when by putting the helm in this way until you bring your red light to the red light side of the approaching ship, you adopt the safest method to keep out of danger.

Let it be noted that a sure sign of impending collision is where a vessel is seen approaching, *without any alterations in her bearing*, and it is a good and proper precaution, especially in crowded waters, not to be without a ready loaded gun, and a blue light always at hand for instant use.

W. C. P.

## A VISIT TO THE FISHING GROUNDS OF LABRADOR by H.M.S.

*Gannet, in the Autumn of 1867, W. Chimmo, Commander.*

(Continued from page 195.)

HOPEDALE, or, as it is called, perhaps more properly, Hoffenthall, is the principal seat of the Moravian missionaries, formed by a most interesting body of men, busily engaged in dispensing the light of Gospel truth among the benighted people of this distant and unknown part of the world. They have occupied this position for many years, and as my intercourse with them has placed me in a position for ascertaining much concerning them, it will best perhaps serve the object of this journal to notice first what might be fairly termed their deed of settlement. This will be apparent by the document of which the following is a copy:—

“At the Court at St. James’s the 3rd day of May, 1769.

“Present—The King’s Most Excellent Majesty, Lord President, Duke of Queensbury, Duke of Ancastre, Lord Steward, Lord Chamberlain, Earl of Huntingdon, Earl of Denbigh, Earl of Rochford, Earl of Ashburnham, Viscount Weymouth, Viscount Falmouth, Viscount Barrington, Viscount Villiers, Lord North.

“Whereas there was this day read at the Board a Report from the Right Honourable the Lords of the Committee of Council for Plantation Affairs, dated the 24th of last month, in the words following, viz.:—

“Your Majesty having been pleased by your order in Council of the 20th of February last to refer unto this Committee a Representation from the Lords Commissioners for Trade and Plantation, setting forth that they have had under their consideration a memorial presented to the Earl of Hillsborough, one of your Majesty’s Principal Secretaries of State, on behalf of the Society of the *Unitas Fratrum*, stating that the said Society are Desirous of Prosecuting their Intention of Establishing a Mission on the Northern Coast of Labrador, for the purpose of civilising and instructing the savages called Eskimaux, inhabiting that coast; in which undertaking the memorialists represent that they have already taken some steps, in consequence of encouragement received from that Board in 1765, but that there is a necessity of having permission to occupy such a quantity of land on the Continent as may induce the Eskimaux to settle round the Missionaries; that for this purpose they had pitched upon Eskimaux Bay, and praying for a grant on the spot of one hundred thousand acres of land, or about twelve miles square, with liberty, in common with British subjects, of fishing and trading on that coast, submitting at the same time the expediency of Government erecting a blockhouse near the said intended settlement to protect the Eskimaux and their Missionaries from the violence and encroachment of any disobedient people who might happen to come into that Bay:—

“Whereupon, the said Lords Commissioners represent, that in the year 1765, the Society above mentioned having, with the approbation of the Government, deputed four of their Brethren to visit and explore the Coast of Labrador, with a view to propagate the Gospel amongst the savage inhabitants, those persons though unavoidably prevented from completing their design in its full extent, did, however, by the assistance and under the direction of Mr. Palliser, your Majesty’s Governor of Newfoundland, make some progress in the laudable purposes of their mission, by establishing an intercourse and concluding a treaty with those savages.

“Whereupon, in the year following, upon the favourable Report made by your Majesty’s said Governor, touching the conduct and behaviour of these Missionaries, and in consequence of a Petition from the said Society, the Board of Trade did, in a humble Representation to your Majesty, dated March 27th, 1766, submit whether it might not be advisable to allow this Society to occupy such a district of land not exceeding one hundred thousand acres upon the Coast of Labrador, as they should think best situated for the purposes of their Mission. From this opinion of their predecessors in office they see no reason to dissent, and as they do in like manner with them think it advisable to encourage and promote a settlement of this sort, as well as from the pious and laudable object of its institution, as well as from the public and commercial advantages to be derived from it, they beg leave humbly to recommend to your Majesty that the Society, or any persons deputed by the Society for that purpose, may be allowed by an order from your Majesty in Council to occupy and possess, during your Majesty’s pleasure, one hundred thousand acres of land in such



part of Eskimaux Bay, on the Coast of Labrador, as they shall find most suitable to their purpose, and that your Majesty's Governor of Newfoundland may be directed by the said order to give them all reasonable assistance and support in forming such establishment, and by a proclamation, to be published in your Majesty's name, signifying that this establishment is formed under your Majesty's express authority and direction, to warn all persons from molesting and disturbing the said settlers; and in case it should appear to him to be necessary for their welfare and security, that one or more of the principal Missionaries should be vested with the authority of Justice of the Peace, that he should in that case issue the proper commission for that purpose, conformable to the powers delegated to him by your Majesty's Commission under the Great Seal.

"With respect to the expediency of erecting a Blockhouse near to the said intended settlement for the defence of the Eskimaux and the Missionaries, and for the general protection of the British Trade and Fishery, they do not think themselves justified in advising your Majesty to comply with a request that would probably be attended with considerable public expense, and for which there does not appear to them to be any immediate necessity; but as they think it highly proper that every reasonable and necessary measure should be taken for the security of persons who shall establish themselves on this savage and uncivilised coast, they would humbly recommend to your Majesty to direct that the persons who shall engage in this settlement shall be furnished out of your Majesty's stores with fifty musquetts and a proportionable quantity of ammunition, which the Council consider may be sufficient for their personal security and defence.

"The Lords of the Committee, in obedience to your Majesty's said Order of Reference this day, took the said Representation into their consideration, and do humbly report to your Majesty that they agree in opinion with what is above proposed by the Lords Commissioners for Trade and Plantations, and to that end, that it may be advisable for your Majesty, by your Order in Council, to permit and allow James Hutton, of Lindsay House, Chelsea, gentleman; Benjamin La Trobe, of Lindsey House, Chelsea, clerk; Charles Metcalf, of Chelsea, gentleman; John Edmonds, of St. Andrew's, Holborn, Brewer; Philip Hurlock, of St. Paul's Churchyard, surgeon; John Wollin, of Lindsey House aforesaid, gentleman; and Jens Haren, of Lindsey House aforesaid, catechist, in trust for the Unitas Fratrum and its Society, for the furtherance of the Gospel, to occupy and possess, during your Majesty's pleasure, one hundred thousand acres of land in such part of Eskimaux Bay, on the Coast of Labrador, as they shall find most suitable to their purpose; and that your Majesty's Governor of Newfoundland should give them all reasonable assistance and support in forming the said establishment:

"And, by a proclamation to be published in your Majesty's name, signifying that this establishment is formed under your Majesty's express authority and direction, to warn all persons from molesting and disturbing the said settlers, and in case it shall appear to him

to be necessary for their welfare and security that one or more of the principal Missionaries be vested with the authority of Justice of the Peace, that he should in that case issue the proper Commission for that purpose, conformable to the powers delegated to him by your Majesty's Commission under the Great Seal; and the Lords of the Committee are further of opinion that it may be advisable for your Majesty to direct that the persons who shall be engaged in this settlement shall be furnished out of your Majesty's stores with fifty musquetts and a proportionable quantity of ammunition for their personal security and defence.

"His Majesty, taking the said Report into consideration, was pleased, with the advice of his Privy Council, to approve thereof, and accordingly doth hereby permit and allow James Hutton, of Lindsey House, Chelsea, gentleman; Benjamin La Trobe, of Lindsey House, Chelsea, clerk; Charles Metcalf, of Chelsea, gentleman; John Edmonds, of St. Andrew's, Holborn, Brewer; Philip Hurlock, of St. Paul's Churchyard, surgeon; John Wollen, of Lindsey House aforesaid, gentleman; and Jens Haren, of Lindsey House aforesaid, catechist, in trust for the Unitas Fratrum and its Society for the furtherance of the Gospel, to occupy and possess, during your Majesty's pleasure, one hundred thousand acres of land in such part of Eskimaux Bay, on the Coast of Labrador, as they shall find most suitable to their purpose:

"And his Majesty doth hereby further order that the Governor or Commander in Chief of Newfoundland for the time being do give them all reasonable assistance and support in forming the said establishment, and by a proclamation, to be published in his Majesty's name, signifying that this establishment is formed under his Majesty's express authority and direction, to warn all persons from molesting and disturbing the said settlers; and in case it shall appear to him to be necessary for their welfare and security that one or more of the principal Missionaries should be vested with the authority of Justice of the Peace, that the said Governor do in that case issue the proper Commission for that purpose, conformable to the powers delegated to him by his Majesty's Commission under the Great Seal; and the Governor or Commander in Chief of his Majesty's Island of Newfoundland and the Territories depending thereon for the time being, and all others whom it may concern, are to take notice and govern themselves accordingly."

(L.S.) "That the foregoing is a true copy of the original to me this day produced, I, after examination, do attest.

"London, the twenty-third day of April, in the year of Lord one thousand seven hundred and seventy-one.

"Signed, ABRAHAM OGIER, *Noty. Proba.*"

Here then we have the words of the original order in Council by which the Moravian Settlement was established on the coast of Labrador, and in pursuance, a measure in consonance with it was adopted by the Governor of Newfoundland in the following terms.

“ By His Excellency John Campbell, Esq., Governor and Commander-in-Chief in and over the island of Newfoundland, etc., etc.

“ Whereas, His Majesty in Council, on the third of May, 1769, was graciously pleased to grant unto the *Unitas Fratrum* and its Society, for the furtherance of the Gospel among the heathen, one hundred thousand acres of land on the coast of Labrador for the establishment of a mission among the Esquimaux savages, and whereas, it has pleased His Majesty in Council on the ninth day of March, 1774, to permit and allow the missionaries of the said *Unitas Fratrum* to extend their said settlement to the southward and northward of their first location, called Nain, as may be found necessary for the purposes of the undertaking; and they have taken up, agreeably to the said order of Council, one hundred thousand acres of land north of Nain, near the fifty-eighth degree of north latitude, and have established a mission settlement thereupon, called Okkak, and have taken up one hundred thousand acres of land south of Nain, between the fifty-fifth and fifty-sixth degree, and have established a mission settlement thereupon, called Hopedale, and whereas His Majesty did at the same time order that the Governor or Commander-in-Chief of Newfoundland, for the time being, do give them all reasonable assistance and support in forming the said mission settlement, and in His Majesty's name to warn all persons from molesting or disturbing the said mission settlement.

“ Therefore, be it known to all men, that these said settlements are under His Majesty's immediate direction and protection, and I do hereby enjoin His Majesty's subjects to live in amity and brotherly love with the said missionaries and the native Indians inhabiting that country, in no wise molesting or disturbing the said missionaries, or those who shall settle with them. And I do require that all His Majesty's subjects who shall come upon the coast of Labrador, do act towards the Esquimaux Indians, justly, humanely, and agreeably to those laws by which His Majesty's subjects of all classes are bound throughout His Majesty's dominions, and to the Proclamation, issued at St. John's, in the island of Newfoundland, on the 21st of June, 1772, respecting the savages inhabiting the aforesaid island and coast.

“ Given under my hand in London, the 15th of May, 1774.

Signed,

“ JOHN CAMPBELL.”

And thus we have the two main settlements of Nain and Hopedale established with due form and authority.

We had arrived at this city of the Gospel on the desert icy shore of the sea on the afternoon of the 21st of August, and found not more than four or five fishing vessels, which were waiting for a fair wind to enable them to proceed to the south. The little *Gannet* was the first man of war steamer that had ever visited the place, and she was of course a wonder to the Esquimaux (those savages which the missionaries had come to civilize), who soon appeared in the kyaks and baiadars to be gazing in wonder at us, calling us the *Oomiak-wak-Gannet*. Doubtless, none of these had seen H.M. brig *Clinker*, which was here in 1821.

Having collected together in the course of the time we had been in commission a substitute for a band just to shew that some of the *Gannets* had music in the soul, our drums suddenly being called into play, were no doubt the signal which the Indians translated into an invitation to come on board, and accordingly all the Esquimaux within hearing of them, and the boats from the fishing craft, simultaneously made a rush for the *Gannet*, and we were very soon beset by a large number of them, the Esquimaux expressing their unbounded delight at seeing us in all manner of odd ways. It was an interesting sight to see these unsophisticated beings, but half removed from the state of a wild, savage nature, thus assembled, expressing the utmost delight in their odd ways at the sounds of our drums and fifes, but poor specimens of music from our own civilized land. But here we were beyond the Admiral's station, far away from home, on the bleak icebound shores of Labrador, in company with a race of the human family little removed from barbarism. It was an interesting sight to witness these happy beings, to see what little had conduced to their joy, but how much they owe to the exertions of the Moravian missionaries who must have worked hard indeed to have brought them to their present state of civilization. And it is a curious fact which is probably due not only to the general character of the Esquimaux, but also to their being more present at the mission, that the tribes of hunting Indians, who merely visit the coast, pay but little heed to the endeavours of the missionaries to make any impression on them. No, they are too deeply attached to their old superstitions than to abandon them at missionary persuasion. These do not hesitate to sacrifice even a favourite child on the grave of its deceased parent, under a belief that their earthly dissolution is at once succeeded by a blissful reunion above. Such extraordinary imaginings it appears are beyond missionary reach, but it must be acknowledged that the mind of the individual must be in a barbarous condition and sadly deficient of human affections that will proceed to such revolting extremities.

Having preserved above a copy of the original order in council establishing the mission on this coast, it became one of my first objects to pay a visit to the Principals, who are at present in charge of it, with the view of learning some particulars of its progress. Accordingly I took an early opportunity of paying a visit to Messrs. Ribback and Kretschmer, the two gentlemen in that position. We found the former with his wife and family inhabiting a comfortable wooden house, and learnt from him that he had been twenty-five years at this establishment. Of course the house was surrounded by huts of the Esquimaux, with their usual complement of dogs innumerable. The features of these people bear a strong resemblance to the Chinese, and there is no fraternising between them and the hunting Indians, their respective characters being essentially different.

To return, however, to the affairs of the mission. At my request I was enabled to refer to a kind of diary in which I read as follows:—

The mission of the Moravian church has for its object the preaching of the Gospel to the heathen in all the world, according to Christ's

command, St. Matthew xxviii. 18, and that of the Apostles. For this reason is the mission in Labrador established under the Almighty protection of our Heavenly Father.

The first series of enquiry began in 1752. Five missionaries of the Labrador Church, called Moravians, who landed on the 21st of July in Nisbett harbour, forty-eight straight miles north of Hopedale. Five sailors and one missionary were murdered by the wild Esquimaux. The other four missionaries returned from want of sailors.

In 1764, the second series, an attempt was made to settle in the northern part of Newfoundland, but it was of no use (defeated) because the Esquimaux were so unfriendly.

In 1765, a third attempt was made, the prospects for laying out a mission were more pleasing.

In 1770, a fourth time, the land for the Station Nain was chosen and marked out.

In 1771, the first Station Nain was founded.

In 1776, Okkak, north of Nain (established), in the same year a medicine man was first baptized.

In 1782, Hopedale, the most southern station, was founded: and

In 1838, Hebron, the most northerly, (also)

In 1866, Goar, between Nain and Hopedale.

This Station of Hopedale comprises (in 1867) thirty-four houses, which in winter are inhabited by 258 people: 118 women, 114 men, of these eighty are communicants. There are fifty school children of both sexes. The missionaries at present in Hopedale are Charles A. Ribback and G. Kretschmer and Father Rinderknachtflad. The two first had their wives, and the first his child.

It appears that since 1784, there have been baptized in Hopedale 578 children and 471 persons who have died.

The whole mission now comprises five Stations, containing 1024 people under the care of three married and two unmarried missionaries. The community of Hopedale since its foundation approaches to three generations, comprising not only baptized heathens, but members baptized and growing up in Christian instruction, which they apply for and enjoy in winter; for in summer they must venture on the gains by which they are to live.

It appears that there are a few Esquimaux, even of Hopedale, who remain unbaptized on account of their determination not to forsake idolatry. The Christian Esquimaux (as the instructed may be called) follow the rites of the Moravian Church, and are happy and thankful to have teachers among them. If in respect to their Christian conduct after the rules of Holy writing, much still remains to be desired, there is yet a great difference between those baptized and those dwelling in the north, wild Esquimaux who know not the Gracious God.

Until lately they lived in those isolated positions, harmless and in peace, so few coming from the outer world, but now is their country always possessed by traders, settlers, and farmers, and the strange fishermen always more numerous. They have as means for their outer existence seals and fishing. But they possess not the necessary means

nor the energy and perseverance for taking them, and each time they return from their losses, and put up with injustice from the fishermen. We recommend ourselves and the small branch of the Esquimaux natives so widely dispersed to the favour and protection of our honoured Government, and we pray for the favour of the British Empire for these subjects appertaining to it, whose honour might, through her power both south from Hopedale and those adjacent good places, Tikkerarsuck and Kanagigtok bay, might not be possessed by traders and fishermen.

The reader will kindly make allowance for some specimens of rather cramped English in the foregoing, when he knows how little English is spoken at Hopedale by the foreigners of the mission.

There had been much readiness on the part of the missionaries to place all their books and papers before me for my information. In fact I was called on in the course of my visit to decide in a case for them, wherein it appeared that some fishermen had built stages and settled themselves on a point of land, which was considered as belonging to the mission, and therefore was not open to the selection of anyone, whether fisherman or not, to make it his own. Moreover this point derived considerable value to the mission from the circumstance of its being frequented by seals during the winter. The wrong however was done. A stone marking the boundary of the mission had been broken down: the house of an Esquimaux had even been broken into, and the contents made free with, and a Bible and a hymn book torn to pieces. These and other similar depredations proceeded from a spirit of wanton mischief, but in reference to the stone marking the boundary I could do nothing until I saw the authority which the mission held, and by which they had been authorized to place the stone marking the limits of their property. Hence all the writings connected with titles, proclamations, etc., were produced, and which, of course, served as my guide.

In perusing some old journals kept at the mission, an entry caught my attention, that said, there was great joy among the people on the 12th of August, 1831, on finding the first cod fish at Hopedale; and that on the same day arrived H.M.S. *Gannet*, of eighteen guns, and one hundred and fifteen men, commanded by Captain Sweeney. Such an arrival, it appears, was highly gratifying, as soon as it was ascertained that she was not their ship called the *Harmony*, for which ship the *Gannet* had been at first mistaken. Again we had arrived in our *Gannet*, on the 21st August, 1868, thirty-eight years afterwards. Of course our arrival was truly noted. On the 3rd of August, 1830, a visit of inspection was made by Mr. Pitts, in the *Belinda*, who brought with him a Church party from Newfoundland, with the chief justice Paterson.

In the course of my conversation with the missionaries, I learnt that all the Esquimaux about Hopedale (about 300) are baptised into the Christian faith, and assume names taken out of the Bible. Such a proceeding proved most absurd in the case of an old female Esquimaux, who rejoiced in the name of Mrs. Catherine Nicodemus. These appear

to adopt the marriage rite as civilized individuals, but not very far north it is different with those Esquimaux who have not yet embraced Christianity, and among whom a plurality of wives is common.

There seems to be but little intercourse between the establishment at Hopedale and the true North American Indians. They seldom come here, unless driven by famine to the settlement—otherwise they do not appear on the coast anywhere. When they do come they bring all their commodities with them, and while they stay they pitch their sealskin tents, in which they remain, having as little as possible to do with the Esquimaux, whom they hold in great contempt. But the difference between the two characters is remarkable. The Indian is stupid by nature, and both cowardly and superstitious, while, on the contrary, the Esquimaux is active, ingenious, and enterprising. These Esquimaux bear a remarkable resemblance to the Tartar and Chinese.

The Esquimaux are generally well attended by dogs, and these about Hopedale are not without their share of these useful animals. They very much resemble the wolf, and are very fierce, probably arising from their being half starved. Thus it need be no matter for surprise that they make free occasionally with some unprotected child of their masters that cannot take its own part; and their battles over a fish that by chance may be thrown to them are frequent and fierce, to which latter their starved condition mainly contributes. Their great use consists in drawing sleighs over the snow; not but that their pups are considered delicacies by the Esquimaux, and highly valued as food!

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#### THE EASTERN REPUBLIC OF URUGUAY.

*(Continued from page 132.)*

THE Republic of Uruguay, surrounded as it nearly is by water, may be considered in the light of a peninsula attached to the southern extreme of the Brazilian Empire. The divisional line, which is nearly the same as it was under the Spaniards, was revised in 1856, and measures some four hundred and fifty miles. It passes along the summits of the Haedo Mountains and Santa Anna, until meeting in the west the head waters of the River Cuareim which joins the Uruguay, and in the east the Yaguaron, which falls into the Merim Lagoon. The outline, in which may be traced nearly the figure of a many-sided polygon, is washed on the west by the waters of the Uruguay, on the south by those of the Plata, on the south-east by the ocean, and on the east and north-west by the lagoon and secondary rivers before mentioned.

The fluvial and oceanic boundary, as well as the terrestrial, is above 1,075 miles in extent, which is thus made up:—

From the mouth of the Cuareim to Point Gorda	270 miles
„ Point Gorda to Colonia - - - - -	52 „
„ Colonia to Monte Video - - - - -	103 „
„ Monte Video to Point del Este - - - - -	80 „
„ Point del Este to the Chuy Brook - - - - -	120 „
„ Mouth of the Chuy, following the border of Merim Lagoon and the channel of the Yaguaron to the mountains, and descending the Cuareim to its junction with the Uruguay - - - - -	450 „

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1,075

*Surface.*—The general surface of the whole State is estimated as 7,037 square leagues, and is included within the parallels of 30° 5' and 34° 58' and the meridians of 47° 12' and 52° 16'.

The ground consisting alternately of mountains and valleys, lagoons and ponds, and crossed by numerous rivers and other streams (nearly all of considerable volume), is amazingly fertile, producing all the European fruits. Towards the borders the ground is generally low and covered with vegetation, but gradually rises towards the interior.

Still, the soil wants the work of the farmer, the few inhabitants being devoted to the rearing of flocks, and to preserving their meat, etc., from which, no doubt, they obtain a large profit. In 1861 the population scarcely reached 350,000 souls.

*History.*—Many and great have been the troubles through which this beautiful province of the Vice-Royalty of Buenos Ayres has passed since its definite separation from the metropolis in 1814.

The insurrection of the 22nd of May, 1810, and the displacement of the Viceroy initiated at Buenos Ayres, emancipated that province, which the rest of the interior soon joined, and the Banda Oriental alone for some time remained faithful to Spain. But undermined by the spirit of independence which then prevailed in all the Spanish Colonies, and supported by the Argentine forces, the defence of the country became confined to its capital, Monte Video, which vigorously supported General Vigodet, who being attacked by land and sea, with his resources cut off and his troops suffering from scurvy, capitulated on the 20th of June, 1814, with the honours of war.

After this success anarchy commenced in Monte Video, from which evil also other provinces suffered, a war of independence soon breaking out, in which each one was for asserting its own freedom.

Meanwhile the Portuguese, who were looking on with hungry desire, and who had probably encouraged the germs of discord, saw that the moment had arrived to possess it themselves, which for more than two centuries they had been wanting. In 1812 they found a pretext for invading the frontier, and carried it out definitely by the end of 1816, occupying the capital on the 20th of January, 1817, and incorporated it with Portugal by the treaty of the 31st of July, 1821, under the name of the Cisplatina province.

The Portuguese being masters of the whole territory of the Banda



Oriental extended their hold to the Missions, intending to overrun Paraguay. But the hostilities carried on by the patriotic guerilla forces, which were raised in all parts of the country and soon converted into regular troops, compelled the Portuguese to retire to the capital and some fortified positions; thus showing to the world that they were determined not to submit to a foreign yoke; and that, when separated from the mother country, they were determined to keep themselves independent of all guardianship.

This heroic determination, assisted by the Argentine forces, had the happiest result that could happen, which was the withdrawal of the Portuguese, then converted into Imperial Brazilians, and the treaty of Monte Video, on the 27th of August, 1828. This treaty was ratified on the 4th of October following, by which the Governments of Brazil and the Argentine Confederation, represented by Buenos Ayres, acknowledged the Banda Oriental as an independent State, by the title of the Eastern Republic of Uruguay, the Constitution of which was proclaimed on the 18th of July, 1830.

However, the people were not yet relieved of much anxiety, and, in fact, new calamities awaited them, one of the principal of which may be mentioned as the siege which the capital suffered for nine years by the troops of the Argentine Confederation. Rosas being made Dictator by the Federal party chose to incorporate Uruguay into the Confederation. Being unable to effect this by diplomacy, he determined to do it by force, sending one of his generals, Don Ignacio Oribe, to occupy the territory. He invaded it in 1842, and in February, 1843, laid siege to Monte Video.\*

We must not stop to describe the severe conflict in which this city was involved, and to which she would have succumbed, notwithstanding the heroic deeds of its people, had she not been succoured by the maritime forces of the Brazilians, as well as the English and French nations, exclusively opposed to Rosas. They entirely stopped the navigation of the interior river, opposed his policy, and succoured the capital by sea, while Oribe invested it by land.

The siege wore the appearance of lasting long, when a bold and singular man, General Urquiza, perhaps the right hand of Rosas, wearied with seeing the despotism with which he governed the Union, revolted against him in 1851. And taking command of a handful of valiant troops placed himself in the front of the party who were fighting for the confederation and free navigation of the affluents of the Plata.

The first movement which Urquiza made with the assistance of the Brazilians was against Oribe, who at length capitulated on the 8th of October, a large part of his army passing before that of the liberator. From that time the affairs of this beautiful country assumed a new face; its commercial prosperity increasing, and although some political

\* Don Juan Manuel de Rosas was a gaucho, or native of the country, and a rich proprietor, when, in 1829, he was nominated Captain General and Governor of Buenos Ayres by the Argentine Federalists, and hence the war which he carried on during his governorship against the independent provinces.

differences, occasioned by the two great parties, white and coloured, disturbed its quiet now and then, such as the differences of 1864, and the no less disastrous one of February of this year, its population was increased by the continual European emigration and its commerce flourished.

In the early days of February, 1868, the streets of Monte Video were stained with blood, and on the 19th of the same month, a revolution was got up by the white party, placing arms in the hands of some ruffians, who in the day time assassinated Don Venancio Florez, the representative of the opposite party, in the open street. Under the Presidency of this distinguished chief, the Oriental Republic had prospered in every branch, and especially in agriculture and commerce, its code of civil laws originating with him also, instead of the old code by which the country until then was governed, the abolition of which was decreed on the 23rd of February of the present year, the new civil code being established as to commence on the 19th of the following April.

The province now contains 400,000 inhabitants, of which 150,000 are foreigners; and their number increases in almost a fabulous manner under the protection of the Government. To encourage this, on the 2nd of December, 1865, a decree was published, establishing a central commission of emigration, under which the emigrants of all countries who required assistance found protection, board, and lodging gratis, until they were located. The results which this benevolence produced in the year 1867, the following figures shew.

Emigrants who desired employment	-	-	-	1,913
„ who received lodging	-	-	-	187
„ applied for by the capital and departments	-	-	-	2,586
„ employed by direction of the commission	-	-	-	1,802

Total Emigration of 1867 - 6,488

In order that an idea may be formed of the number of European emigrants who resort to Uruguay in search of work, and who desire a grant of ground, we will continue with a statement from the returns up to the 31st of December, 1867, of the Central Direction Commission.

European Emigration and Passengers entered in 1866 and 1867.

FROM	IN 1866.	IN 1867.	INCREASE.
Italy .....	4,090	6,982	2,892
Spain .....	1,558	3,783	2,225
Brazil and Escalas .....	1,497	2,886	1,389
France .....	1,033	1,665	612
England .....	936	1,065	129
Belgium .....	108	149	41
Germany, United States, and other Nations .....	85	851	766
	9,327	17,361	8,034

These figures speak eloquently in favour of the increase in the population, and the favourable future which awaits her with the assistance of so many stout arms.

Besides the 17,381 emigrants and passengers who came into the State by the port of Monte Video in the year 1867, 9,525 from the Argentine Republic, and 220 more came from Paraguay, so that the access of settlers from all parts and of all classes in 1867, was 27,126.

Some publications make the European emigrants amount to 150,000, who came to the different States of the Plata in the course of thirty years, and many of this number rested at Monte Video to be dispersed among the other republics. In the five years from 1862 to 1866, 13,468 individuals landed at this port who were transferred to Buenos Ayres in search of a location.

An idea of the progressive increase in the department of Monte Video alone may be formed up to 1860 by the following statement—

In 1835, the census showed 23,404 inhabitants.				
1853,	„	„	33,994	„
1859,	„	„	60,230	„

Of these last 60,230, 32,150 were natives, 21,310 were foreigners, and 3,770 were people of colour, shewing that the foreign element represented more than a third part.

In the year 1868, 8,359 emigrants landed at Monte Video, of which 2,446 remained in the country, but since that date the stream of emigration has been progressive as we have ascertained from returns of the Central Direction Commission.

*Subdivision of Territory.*—The country of Uruguay is divided into three departments, of which that of Maldonado only is bounded by the ocean. Those of Canelones, Monte Video, San Jose, and Colonia, are bordered by the waters of the Plata and those of the Uruguay fertilize the boundaries of Paisandu, Soriano, and Salto; but as all the wealth of the republic flows through the department of Monte Video, we will enter further into the description of it in the sequel.

General Reyes speaking of the increasing prosperity of the capital, says:—that she invites and attracts foreign emigration, to unite their flag with that of any of the States they may desire to join, with the view to work out the rewards of industry in agriculture and the arts, profiting by the terrible lessons which the severe trials in their history necessarily caused to the people in great and terrible suffering, under which they would have undoubtedly sunk, had they not been faithful and heroic in the defence of their liberties and their honour.

And certainly Monte Video being the key of the river Plata, and having the best port of the whole estuary, is and ever will be for the reception of emigrants, the great resort of large vessels, and its roadstead the station for squadrons.

Here are some curious data which will give an idea of the increasing riches of the beautiful territory of Uruguay.

In 1831 vessels from oversea arrived	-	-	-	264
„ „ from Argentine ports	-	-	-	127
„ „ from its own ports	-	-	-	200
				591
In 1858 entered from oversea	-	623 vessels	-	182,778 tons.
„ 1860 „ „	-	945 „	-	224,972 tons.
„ 1866 „ „	-	1039 „	-	303,818 tons.
„ 1867 „ „	-	1462 „	-	507,524 tons.
And in this last year the following—				
From Brazil and Europe in-				
cluding steam packets	-	449 vessels		141,936 tons.
From England	-	297 „		136,491 „
„ Spain and Antilles	-	234 „		61,778 „
„ United States	-	132 „		54,194 „
„ France	-	118 „		48,879 „
„ Italy	-	72 „		24,449 „
„ Other States	-	160 „		39,805 „
				507,527
				1,462

Besides those vessels in 1867 there entered into the port of Monte Video—

From ports of the Argentine Confederation	-	703 vessels		158,377 tons.
From ports of Paraguay	-	79 „		30,948 „
From small traders from ports of the States	-	1,248 „		93,661 „
				282,986
				2,030

So that the trade from the port of Monte Video shews in 1867 the entry of 3,492 vessels measuring 790,513 tons. Of the proceedings from Ultramar no register has been opened, and consequently no mercantile operations have been effected.

The imports and exports of the Republic shew a similar amount, and may be taken by the following figures :

		Imports.	Exports.	Totals.
In 1862	-	8,151,802	8,804,443	16,956,245
In 1866	-	15,330,000	13,238,000	28,568,000
		7,178,198	4,433,557	11,611,755
Increase	-			

*Public Works.*—Many public works have been undertaken throughout the State of Uruguay, and especially in the department of Monte Video. Besides the churches which are rebuilding, the streets and roads are being improved, charitable asylums are in course of construction, and an hospital in the island of Flores, and also a railway from Monte Video, which will penetrate one hundred miles into the State, and a tramway for horses between Monte Video and La Union.

*Monte Video* is the capital of the Republic and seat of the constitu-

tional government, and therefore the centre of mercantile operations. This province forms a beautiful panorama, spreading over a peninsula somewhat but not very high, extending from east to west, where it is terminated by a rocky point.

It was commenced in 1717, under the advocacy and care of San Felipa and Santiago. His Excellency Sr. D. Bruno Masericio de Zavala being governor, and received in 1726 with families brought from the Canaries, Dr. Francisco de Abzeibar. It was then surrounded by a strong wall, and a fort was built at its western end, and a citadel at a part that was intended to make it the key of the river Plata. The port was no sooner opened as a free port in 1778 by royal decree on February 2nd, increasing its prosperity so much that in 1792, sixty-seven vessels from oversea were entered bringing goods to the value of 2,993,267 dollars, and sixty-nine departed, taking silver and produce to the value of 4,750,094 dollars.

In 1781, the population of the city amounted to 6,466 inhabitants, in 1787 it numbered 8,826. At the end of the century it was 15,000.

The city increased so much since it had been made the capital of the State, that it became necessary to remove its walls in order to extend them to the eastward, in a manner so that at present the road which crosses it, includes much new ground covered with a multitude of establishments, houses, etc. Its streets which are very spacious are crossed from north to south and east to west, extending in this latter direction some 3,000 yards, and with different breadths from 400 to 1,300.

To the eastward the city is bounded by the Santa Barbara and Albacas brooks which fall into the Ensenda of Pocillos, and to the N.W. by the Sero and Miguelate.

Towards the bridge of the Miguelate extend the houses of the Aguado, a quarter containing more than 2,000 inhabitants, and on its eastern side that of Cordon with a much larger population, both forming part of the capital. The village of La Union, three miles to the west, has been the most prosperous. It contains many commercial establishments, restaurants, manufactories, gardens, etc., and a population of about 4,000.

The most elevated part of the city is the Plaza Cagancha, from which there is a gradual descent to the market place, which was formerly the site of the citadel; the descent continuing to the west as far as the bastions of Fort San Jose.

The Plaza of Matriz is the oldest of all, and the Matriz, or rather the Cathedral of the present day, occupies the S.E. angles. Its towers are 138 feet above the ground, and 207 above the level of the river. In 1860 Monte Video contained 37,787 inhabitants, in 1862 with the quarters of Cordon and Aguado 45,765. From this last date the population has so much increased that now in 1868 it is estimated at from 85,000 to 90,000 souls, including its environs. This increase has entailed the necessity of another enlargement, and some 900 new houses have been in progress for the last three years, including a new exchange, a new post office, etc. Considering the increase of the

population it will not be very long before the village of La Union will be annexed to Monte Video.

The greatest source of riches of the Oriental Republic may be considered its pasture for cattle, of which nature has been fabulously prodigal to her. Thanks to this exuberance the example may be quoted of their number having doubled itself in three years.

In 1860 the Republic possessed 5,218,760 head of cattle; 750,158 horses and mules; 2,606,101 sheep, goats, and swine; 8,575,019 animals. From these figures it will be seen that its great riches consist of hides, dried beef, suet, wool, hair, horns, etc. Besides this it exports live animals, ostrich feathers, flour, and other agricultural produce.

Monte Video has exhibited a surprising commerce in a very few years. Besides the trade which she keeps up with distant parts, and the whole of America, it is actively carried on by means of steamers between Buenos Ayres and all the towns of importance seated on the banks of the Uruguay as far as Solis.

*The Province of Maldonado*, according to General Reyes, measures 572 square leagues of surface. Its maritime limits are the stream of the Chuy to the N.E., and the great Solis to the west, which includes an extent of coast of 152 miles, along with sinuosities of line.

Its capital, Maldonado, was established in 1724, as it increased much up to 1780, in 1782 it was promoted to a city. It was commonly called Old Maldonado to distinguish it from the town of San Carlos, or New Maldonado, built afterwards eight miles inland.

The citadel stands about a mile from the shore in latitude  $34^{\circ} 54' 50''$  and longitude  $40^{\circ} 45' 16''$ , 249 feet above the level of the sea. Its population entire from home and foreign sources in 1859 exceeded 15,490 inhabitants. It is much scattered, and the city contains only about 1,000.

Its principal sources of riches consist in animals, which in that year numbered 315,200 heads of cattle and 175,140 horses, sheep, swine, etc. It also reckons some profits from seals on the islands of Lobos and Torres, and on the Great and Little Castillos.

*Department of Colonia*.—Leaving the departments of Canelones and San Jose, the first of 179 square leagues of surface, and the last of 432, we will turn to that of Colonia, which after Maldonado is the most important.

This department measures 218 square leagues of surface, and is limited on the west by the Sauce Brook, and on the east by the Cufre, with an extent of coast 101 miles long.

The capital of it, the city of Sacramento, reckoned in 1860 some thousand inhabitants, and the population of the whole department, natives and foreigners, 10,250, of which latter there were 1,500.

As usual with these States the principal source of their riches is cattle of all kinds, which in that year reached the number of 738,700 heads. Corn, maize, etc., are also its exports.

The position of the capital is always a subject of the utmost importance, considered both in a military and commercial point of

view. Commanding the principal river, which affords a passage to the two great affluents of the Plata, and facing the metropolis of the Argentine Republic, its numerous streams connecting it with the people of the whole interior of South America by the millions of vessels which resort to it from all parts of the world, as its magnificent geographical position does with the splendid country by which it is surrounded.

It was founded by the Portuguese General D. Manuel Lobo, sent there for the purpose in October, 1678, under the title of Governor from Rio Janeiro. The expedition was prepared at Santos, and sailed in December, 1679, with 800 men and many colonists. They arrived at the mouth of the Plata in January, 1680, and proceeded to erect the present city under the name of Colonia del Sacramento, the construction of which was carried on with despatch.

The Governor of Buenos Ayres, D. Jose de Garro, on learning this intrusion intimated to Lobo that he should retire while he set about invading him; and having received instructions to dislodge the Portuguese, with all his power he attacked the new city; the first assault being made on the 7th of August, 1681, and taking Lobo prisoner, he sent him off to Lima, where he is supposed to have died. The attempt to settle here gave rise to innumerable letters between the courts of Lisbon and Madrid, and to all the collisions which took place between the Orientals and the Brazilians.

The Portuguese, by thus endeavouring to establish themselves stealthily at this place, selected by them as the most desirable for strategical purposes, suggested the idea that the Portuguese were desirous of gaining a strong position in the Banda Oriental at the very mouth of the Uruguay, with the view of extending their hold leisurely over the left bank of this affluent, a project which was not abandoned by their descendants, the Brazilians.

The subterfuge of which they availed themselves to give right to their intrusion was the celebrated decision of the meridian, since selected by Pope Alexander VI., which should pass one hundred leagues west of Tercera, and which afterwards, by mutual consent of the two rival monarchs, in 1506, Pope Julian II. extended to three hundred and seventy leagues west of the Cape Verd Islands, giving them the right of possessing the whole of Uruguay.

This imaginary line should separate the lands discovered and to be discovered by both nations, and the Portuguese availing themselves of all the artifices they could devise, both by altering the lines of the maps, and denying the opinions of learned and impartial men, desired to prove that the said Meridian passed to the west of Uruguay, and that the Banda Oriental belonged by right to them; looking on it as literally enclosed by their own territory!

We have before us the original diary of the Pilot José Gomez Jurado, one of the Congress which sat in Badajoz, among the commissioners, geographers, and pilots of both nations. Herein he describes minutely the evasions and artifices of the Portuguese, borne out by maps of their own construction, in order to show that Colonia

and the whole of Uruguay was included within, or were to the East of the Meridian, most tenaciously opposing the reasoning of the Spaniards, who asserted that the said Meridian passed eighty-three leagues to the east of Cape St. Mary. Nor would they even admit, as being impartial documents, the Dutch charts, which in those days were in high estimation. So that after two long months, which the conference lasted, the Portuguese left it still asserting their right to Uruguay.

The first conference was held on the 10th of November, 1861, at the Cabilda of Badajoz, and on the 22nd of January in the following year, the commissioners met on an island in the midst of the river Caya, which divides the two kingdoms on the road from Zeloos to Badajoz, where they read the decisions of each commission.

The Spaniards maintained the same opinion that the Meridian passed eighty-three leagues to the east of Cape St. Maria, and the Portuguese that it passed west of the river Uruguay. Which of the two parties was right, the works of later hydrographers have fully demonstrated.

This dispute, supported frequently by a recourse to arms and always kept up by diplomacy, had not concluded at the end of the last century, in which the limits of both States were fixed so ambiguously as to occasion continual dissension between the Orientals and the Brazilians, the latter availing themselves of every opportunity to occupy the Banda Oriental as they have also done in the present century.

Great were the troubles suffered by Colonia, while the two governments were thus disputing; sometimes the Spaniards yielding territory, and sometimes regaining it, according to the phases of peace and war of the time, until in 1777, when the walls were demolished by General Ceballos, who definitively renounced all pretensions of right on the part of the court of Lisbon to the whole territory.

*National Flag.*—The national flag of Uruguay is composed of the same colours as the Argentine, white and blue, although more divided. In fact, it is subdivided into five white and four blue, placed alternately in horizontal stripes, the white being the upper and lower. In the principal quarter is a golden sun on a white ground.

#### A RIDE OVER THE LAVA FIELDS FROM KIWAHAE TO KONA, in the Island of Owhyhee.

MY steed was not one of Harry's best, but he was Kona bred and had good hoofs, an important desideratum where there are no blacksmiths, and a horse shod is looked upon with something like wonder. His rider is certainly regarded as a travelled gentleman and treated with due and courteous respect. I was offered Kilauea, the finest horse in Waimea, large, strong, with fiery eye, dilated nostril, and who seemed as though the speed of thought was in his limbs; but I could not get him shod, and I audibly wished that the whole fraternity of blacksmiths on the island, should never know bodily rest and peace of



conscience nor taste the joys of prosperity, until they sent one of their number, a good workman and a good horse-shoer to Waimea!

A kerosene can filled with water and enveloped in a cloth to keep it cool, a loaf of bread, two boxes of sardines, two strips of smoked salmon, a round of boiled corned beef, part of a smoked tongue, a paper of tea, and a pound of crushed sugar constituted our outfit. It is true that fish and poi can be procured at two places on road, but the poi comes from Waipio and not always fresh, and the fish are sometimes squids and at others sea-urchins.

With these preparations and Boki (a relation of the former Governor of Oahu) for a guide, I struck out from Lihue over a stony and lava-covered desert for a ride of seventy-five miles.

The morning was beautiful, the mountains clear of clouds and their bold outlines bathed in golden light. Our route lay down the Waikoloa stream and its many artificial channels, cut by the ancient Hawaiians for the purposes of irrigation. Marks of former cultivation were everywhere abundant, and an emerald line of vegetation marked the course of each stream through the brown arid plain. An occasional grove of stunted koa trees, rapidly disappearing, marked the line of the deepest valley. Our road was a mere path over volcanic debris, angular and vitreous, except where the grass on the margin of the water ditches relieved our horses' hoofs. But passing a school house on a rocky point in the midst of this stony desolation, we struck off down the sloping hills of the Waikoloa to wind their way to the sea through a deep rocky chasm to the right. The soil among the rocks was dry and thirsty, and composed of a loose reddish brown powder which the breeze whirled in clouds around us. A few withered shrubs and plants were seen, and some evidences of a former vegetation appeared. The whole scene presented the desolate appearance of the peninsula of Sinai, but it lacked the thrilling legends connected with that pilgrim land. However, these brown rolling hills are not always a desert. When the rains commence to fall in February, and the spring months, what was before a bleak and barren waste, as if by the hand of magic, is clothed with verdure, and the desert is transformed into a blooming Eden.

Then the scorching heat of summer soon withers its beauty and converts it into an arid desert once more. The sun poured down with intense heat as we advanced, and a radiant glare glimmered and quivered up from the rocky surface, as we rapidly descended toward a grove of cocoa palms, that stood on the margin of a beautiful little cove of the sea below us. A plain made down from the mountains, beyond the ravine of Awaikēakua, and the point of Keahualono, and it appeared green and inviting and covered with luxuriant grasses. What was my astonishment on descending into the plain to find it one vast level flow of old vesicular lava, partially decomposed, with a thin dusty soil, and salt sea-weed growing upon it with scarcely a blade of grass! We rode over this, which had a metallic, ringing sound under our horses hoofs, passed a neat stone church, and reined up at a native house on the margin of the sea, dismounted and rested at ΠΥΛΟ.

I called for coconuts, and some half a dozen were prepared by ridding them of their outer bark. By a delicate process with the blade of a pen-knife, in one of the monkey's eyes of the nut, I soon had the cool delicious liquid—the cocoa nectar flowing and sparkling in a large goblet—fit drink for the gods, in this thirsty land! How delightfully refreshing! Those only can fully appreciate it, who travel weary and parched with thirst and meet with these portable fountains in the desert. The native dwelling was thatched with coconut leaves and was cool and clean. The leaves and branches of the coconut also furnished the material for enclosures. A pretty girl had a calabash of sea-urchins, that she was cracking between her pearly teeth and handing to a crone of eighty summers to empty. It looked filial, if not picturesque. The cocoa palm grove, and the ocean view alone were beautiful, all else was arid desolation.

We mounted and rode rapidly along the sandy and coral piled beach. We passed two more cocoa groves, and several scattered lauhala trees grew in fissures or little nooks that the old lava flow had spared. Several deep holes used as fish ponds appeared in places of this description.

We came at last in front of a low, black promontory of recent lava that jutted out into the sea, and leaving the beach struck over the volcanic plain to the left. In a few hundred yards we arrived in front of the abrupt wall of the lava flow of 1859. It appeared like a fresh embankment of giant cinders about twenty-five feet high with the glow of a red heat still upon them. Through this a road had been cut with infinite toil, by forming an embankment on each side with the larger cinders and fragments, and breaking those in the track intended for the road, generally from the size of a coconut through all the gradations down to that of a lime, though some of the fragments were much larger. They were loose, sharp, angular, vitreous, and rolled and crushed under our horses' hoofs, with a harsh grating and sometimes metallic sound. Mounting up to the general level of the great flow, we found our path extending in an air line across it, marked by its low wall on either side. Pausing in the edge of a wide and deep fissure I gazed awe struck on the scene around. It was the very sublimity of utter desolation. I dismounted from my tired steed, and stood upon a vast basaltic spheroid, that appeared to be cast by some apprentice cyclops, trying to mould a twenty ton bomb for the next rebellion of the infernal angels. Around me in every direction was a confused mass of cindery heaps, cooled lava jets, pinnacles, and columns of the most weird and fantastic shapes, spheroids like rough and rugged cyclopean shells, yawning caverns, deep dark pits, and over all a reddish brown glow in the intense sunlight that made everything appear as if still hot from the red mouth of the volcano. The view was closed toward the sea, for there the great river of lava as it surged toward the sea, met the repelling waves, and paused as it cooled in the mad war of the elements, and in its expiring effort left a high sea wall. All was silent around. The sky above appeared like a vast dome of burnished steel, hot and glowing. There was neither insect,

nor bird, nor the sound of life. There was neither blade of grass nor a green thing. The breeze as it swept by made no sound in the utter solitude of the scene. Earth can now afford no parallel in sterile desolation. It is a type of its hot volcanic surface before the precipitation of water had worn it into its present form. How like the moon's surface as seen through a good telescope! I imagined myself living in a far future age, when man in his intellectual progress, having overcome or counteracted the power of gravitation, had made a machine to prevent the escape of air into the etherial void, had confined his hydrogen and nitrogen so that he could have an air renovator and could make voyages of discovery through space, and that I was exploring our little volcanic satellite and studying the geology of its surface. I was gazing into its deep pits, on its lava mountains, and its strange mineral compounds, and asking myself what hope there was to convert the desolate sterility of its surface into a life-producing soil. But I returned to earth with the thought that this lava field must remain for long countless ages before it will be decomposed sufficient for the use of man. Another *eclytical cycle* of 1,440,000 years must roll around, earth's climate must be reversed, and polar ices must perform their work in the economy of creation, before it will bloom as a garden under the industrial care of a new race of men! But toward the mountain the dark winding line of the flow could be traced.

In fancy I pictured the flow of the great red river of lava from its mountain source to the sea. The mountain side is rent, and the great red fountain pours, rushing forth with a thunder-voice that jars the earth and shakes the heavens. 'Tis night, and a wild demoniacal glare lights up the darkness. Over the lurid flame a dense column of dark smoke ascends on high, and spreads and shakes afar its terrible wings of desolation, lit by the unearthly glare. On sweeps the great river in blazing cataracts down the trembling mountain side. Widening out a league broad, on it irresistibly sweeps, great rocks, giant boulders, and even hills, are borne onward in the surging tide, or melt, lost in the fiery vortex. The forest, marked with scarce a wreath of smoke, withers as a scroll. Now glowing and grandly flashing on the brink of a precipice, it seems to pause in mad frenzy, and then makes a terrific leap below. Through the tortured air plunges the fiery mass, and falls scorching, seething, melting, with an unearthly jarring roar on the rocks below. Now bubbling up in fiery jets and fantastic whirlpools, it rushes on. The electric current, with its aurora-glow, flashes, sparkles, leaps and plays above the mighty mass. A baleful, sulphurous stench fills the air. The beasts rush frantic over the plain, or are lost in the rushing wave. The birds scream frightened through the air, or fall suffocated in the mighty current. Man, mad with terror, flies from his home, or with white lips utters a prayer to Pele.

On the mad tide sweeps, gaining breadth and velocity as it goes. Now it approaches the broad mountain ridge of Puanahulu, and surges thunderingly against its trembling sides. And now, like a great river approaching the sea, it parts in several branches to flow through its delta. It cannot remove or overleap the mountain-barrier, and it parts

to the right and left. Grandly the Rosetta branch sweeps round the base of a round green spur of the ridge, while a middle branch rushes roaring through a rocky gorge, foaming, boiling with terrific violence, a torrent of liquid fire. Earth cries out in a smothered wail of agony as the fiery currents scorch her breast. A dense, seething, hissing, crackling sound, with a dull confused roar, fills the agitated air. Away toward the base of Hualalai, the Damietta branch of the great fiery Nile flows. Now the fiery currents lap and quiver on the brink of the lower mountain bench and then madly leap in broad cataracts of flame into the plain. Then broadening out with red, majestic, fiery grandeur, they sweep toward the sea. Glowing and flashing, the broad, rushing river of flame, fifty feet deep, comes thundering and surging.

Onward, as irresistible as destiny, sweeps the red-glowing liquid wall on to the ocean's black, shingly beach. Then, like a great dragon in fiery coil, darting forth its thousand tongues of flame, with one wild leap it bounds into the "yeast of waves." The agonized waters dash wave upon wave on the red torrent, which beats them back far out. Madly they roll backward as the flaming tongues of fire flash into the deep ocean caverns and coral caves. Now the deep, gathering force from the repelling surges of red lava waves, comes combing on with a thunder-voice surf, like a vast crystal mountain lit by an unearthly glare, and bursts with a terrific onslaught on the fiery flow, that augmenting, rolls to meet it. Dense columns of steam roll upward as fiery waves still chase each other on and plunge into ocean's depths beneath. Now the most fantastic and horrific forms appear, whirling in eddying dance, as the waves of fire and ocean meet and wreath and circle and lap each other in fiery, vapoury coil. Demons wild, gorgons dire, leap from wave of flame to wave of ocean, as the fiery current blazes along the coral reefs and the chafing waters roll back with the glow of a red heat, lighting the vapoury wreaths that whirl up and fall in hissing showers on the burning tide.

Now rises from sea to sky the wild shriek of tortured waters, the terrific wail of Pele's smothering fires! The cooling lava's crashing thunder bursts, the steam hissing through the quivering, tortured air, a deep confused jarring roar, with the crackling, rushing sweep of the wide river of fire, all combine in a sound of deep, terrific awe, and make the earth tremble as a coward, while hell's sulphury banner, lit up with pale yellow glare, hangs as a funeral pall from the pillars of heaven.

Far up the base of Hualalai the Canopic branch surges and forms a mountain 2000 feet high, which glows in mockery of the extinct cone, and there turning down a deep chasm, at a sharp angle, rushes precipitately into the sea in the direction of Kailua.

Grand, indeed, is the prospect, yet it gives man but a faint idea of the grand volcanic action on this planet, in the cycles of the past, before it was prepared for the existence of life.

But I could delay no longer. Reality found me in the lava flow and forced upon me the necessity of getting over it with my *shoeless* steed, finching at every step. I toiled across the first branch, and came to

an old lava flow with a bituminous surface and a glass-like glitter. It appeared as though a lake of bitumen, heaved and rolled into billows, had suddenly become fixed and hardened. Our path across this was marked by an irregular line of stones on each side, scattered negligently along. On every volcanic swell or ridge a rude tower or monument of stones was placed, often surmounted by white and glittering bones. These cairn-like piles served as guides on the otherwise trackless lava waste. The skeletons of animals who had perished in this terrible desert, glaring in the dark lava with a strange and brilliant whiteness, frequently met the eye. From some cause they were rapidly decomposing; probably from some mineral action, for the lava bed beneath me had the elements of all earth minerals. The wear and tear of time, with electric action, will develop all from gold to alumine.

Passing over another ragged, irregular, and sharp ridge of cinders that marked another branch of the great river of lava, I again descended into another old vesicular and vitreous lake, smooth and glittering, like a wavy plain of obsidian. We crossed over it obliquely, and again ascended another flow of the sharp angular lava. This branch was more elevated and more ragged, wild and desolate in its outlines than the others. It had passed over the great walls of the fish-pond of Kiholo, and jutted out into the sea in a rough, black promontory. Descending the jagged, pitted, and pinnaced sides over deep and yawning fissures, we came in sight of the cocoa palm grove of Kiholo. Here the lava current had parted, and a portion had flowed off toward the base of the highlands, and left a few cocoanut and hau trees standing, and a long peninsula of grass, studded with fish-ponds, that made up like a green bay between the dark lava walls. Galloping over the sands and past the stone church, we reined up at a *halapili* on the margin of the calm and beautiful little bay formed by the lava flow.

The evening breeze scarce rippled the quiet waters; the sun set gloriously and a roseate glow rested on the far summit of Haleakala, which towered up apparently almost in front of us. The sweet young moon beamed down upon me like the love-lit eye of a Chinese maiden on a Mandarin, the waves sung a lullaby on the coral shore, as I enjoyed the luxury of rest. Several rashers of smoked salmon, broiled on the coals, washed down by sundry cups of tea seasoned with goat's milk, gave me an appetite for sleep. I was soon in the land of dreams—visions of horror passed over me. I was travelling over vast fields of torn, contorted, and ragged lava glowing with a white heat, while over its surface my steed went limping and flinching with unshod and bleeding feet. In the far distance the shades of non-enterprising blacksmiths were flitting in perdition, half hid in wreathes of sulphury smoke; a glowing red horse-shoe was branded on the forehead of each, and an inscription more glowing and terrific than the hand writing on the wall, blazed along the awful gloom, in these words—“Emigrate to Waimea, you recreant disciples of St. Vulcan! or loaf, tantalized forever, outside the walls of heaven!” Then the scene changed. My stomach appeared the dry bed of a mountain-lake, converted into a burning desert by fiery volcanic throes, and on its heat-

glowing surface was a Necropolis of parched salmon. Then my mouth appeared a vast reservoir, and over my lip poured a Niagara in rushing cataract into the parched desert below. I was awakened by the roar of the waters, and found myself draining the last drop of water from my kerosene can. I then resorted to the pool of brackish water near by, which only seemed to aggravate my thirst, and I came to the sage conclusion that no traveller should ever take salt salmon for supper, after a day's ride over a stony desert, in a thirsty climate and the thermometer at 96° in the shade.

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#### STORM OF AUGUST 3RD, 1867, ON THE WESTERN SIDE OF THE NORTH ATLANTIC OCEAN.

[ON the subject of the appearance of *Aurora Borealis* being followed promptly by storm, some remarks appeared in our volume for 1867 (December) by Navigating Lieut. W. Kiddle. The following information relating to the gales on the American coast following the *Aurora* described by him therein are here preserved for reference, having been carefully collected by that officer.]

One of those remarkable storms which occur but once in the existence of a generation, has swept over a great part of the United States and British North America, in the middle of summer doing incalculable damage to houses, trees, orchards, crops, etc., on shore, and sacrificing many lives and valuable ships at sea.

It differed from the usual course of great storms by being straight lined. As far as I can trace it, viz., from New York to the Gut of Canso, it blew steadily from south-south-west to south-west, commencing at the former, and gradually veering in the fierce squalls which followed.

It began at New York on the evening of the 2nd, and it is not a little singular that a brig, which left that port for Halifax in the afternoon, carried fine weather throughout, although there was a heavy swell on the following day.

Boston had the strength of the wind about midnight, but I have not been able to learn the particulars of the damage done.

In Naraganset Bay such a gale had never been known, although some of the fishermen remembered every storm which had occurred in winter or summer for sixty years.

New York and Boston must have been on the western edge, as Portland, which only lies forty miles to the westward of a line joining the former ports but beyond it, was not conscious of any atmospheric disturbance.

From Boston it travelled at a speed of sixty miles an hour and burst over the Bay of Fundy, and the coast of Nova Scotia, with all the fury of a West Indian hurricane, lifting wooden frame buildings off the ground and carrying them several yards from their original sites: large trees were rooted up and the fields strewed with branches which

had been borne from a considerable distance. I remarked that the poplars suffered more than the firs.

The United States yacht *Josephine* encountered the gale sixteen miles south of Sambro Island. She had been running for several hours with a moderate south-south-west breeze and the weather being thick had hauled off shore to wait for daylight.

At eleven p.m. of the 2nd, the wind commenced to freshen rapidly, and the barometer fell suddenly until one a.m., when the gale was at its height. By five the wind had sensibly abated, and she bore up for Halifax. The master informed me that the sea rose before the gale was felt, to a dangerous height.

A schooner which was one hundred miles south of Sambro encountered a heavy confused swell but no wind. This is another proof of the small transverse area which the storm covered, as Portland was distant only one hundred and fifty miles from her position and both escaped. In the line of its course it passed over an immense area, I have succeeded in tracing it for six hundred miles, viz., from New York to Cape Breton Island, and when it passed the latter it was still blowing from south-south-west with unabated fury, according to the statement of the officers of H.M.S. *Cordelia*, which I shall insert in its proper place.

At Halifax (N.S.) the wind throughout the whole of the 2nd had been southerly. From three to four with fog, barometer ranging from 30·32 to 30·06, thermometer 60 to 67. It will therefore be readily inferred that no one was prepared for a gale under such circumstances.

A little after one a.m. on the 3rd, the wind suddenly freshened and veered to south-south-west, coming down in short heavy squalls which were registered at ten, by the ships in port. The harbour is sheltered by a range of high hills which shelve suddenly down to the water, so that the full force of the wind is not felt on deck. Between one and three a.m. the barometer fell from 30·06 to 29·83, the temperature of the air increasing from 65 to 67. After this hour the gale broke, although it blew with a force of 8 to 6 until eight a.m. In the city a chapel was unroofed, houses seriously injured, and the roads blocked up with the trunks and branches of fallen trees. During the squalls the wind veered from south-south-west to south-west with sharp peals like the crack of a whip.

H.M.S. *Cordelia* was in George's Bay (Gut of Canso) distant ninety miles from Halifax, on a north-east by east bearing. It commenced there with as little warning as it did in Halifax at four a.m. of the 3rd.

This would give the rate of the storm at thirty miles per hour across the country, a higher rate of progression than I have seen registered on shore in England during the greatest storm.

The *Cordelia* registers the wind exactly as it was at Halifax, viz., commencing at south-south-west, and veering to south-west in the squalls. Force 9 to 11. The last heavy squall occurred at eight a.m., four hours after the first, the duration of the strength of the wind appears to have been remarkably equal at all places.

Further information from various sources.

In Wolfville the roof of the new Presbyterian Church was blown off. In Handsport the brig *Charles* broke from her moorings, went down with the tide, and has not since been heard of.

At Windsor the brigantine *Alvarado* broke from her moorings and went on shore.

At Laurencetown the schooner *Mary Jane* was totally lost, also a large vessel name unknown.

At Pictou several buildings were blown down, and the spray from the harbour carried far inland blackening shrubs and vegetables, trees were in some places rooted up and carried several yards.

At Bridgewater five barns were blown down, and several small wooden buildings were lifted from their foundations and carried several yards forward before striking the earth. The crops suffered severely, orchards were ruined, and large trees blown down. The *Auriel Corkum* is supposed to have foundered off the port.

At Falmouth the schooner *Carrier Dove* was blown on shore.

At Cape Blomidon the schooner *Westover* struck and broke in two.

At Wentworth the schooner *Susan* was capsized.

At St. Croix the schooner *Cotman* and another vessel were blown on the beach, completely out of the water.

At Handsport the schooner *Atlantic* was blown on shore.

At Oak Point the schooner *America* was blown on shore.

At Cornwallis the schooners *Northup*, *Grand Pic*, and *G. R. C.*, blown high up.

At Mount Uniache a frame building was blown over.

At Rocky Lake the heavy ice houses were severely damaged.

Off Kent Island below Grand Manan the schooner *Liberal* foundered with all her crew nine in number, and the schooner *Bessie* close to her. I am strongly inclined to believe that when the Aurora Borealis is seen in summer, it is a sure sign of great atmospheric disturbance, which will always come from the south only. Patient observation will alone show if this theory be correct. If it is, these southerly gales are evidently the result of highly rarefied atmosphere far north. The fact that they always arise in the parallel of the horse latitudes would appear to strengthen this opinion. Another reason is their great steadiness: pilots remark that they never veer like those of winter, and it is but reasonable to suppose that if the disturbing cause was in any point in the temperate zone, the air rushing in from all sides would form a revolving storm.

W. H. KIDDLE, Navigating Lieutenant.

May 3rd. A quail flying about the ship. The gulls which had followed us from the land left us to day. Overhead three boatswain birds, *phaeton pæthereus*, followed the ship for several hours, I have never seen them so far north before.

May 8th. Encountered a heavy revolving storm, wind from west by the north to N.N.E.

May 19th and 20th. Sudden and remarkable changes in the temperature of the sea, as the ship stood a few hours north or south, viz., from 49° to 70°.

W. W. KIDDLE, Nav. Lieut. H.M.S. *Royal Alfred*.



TEMPERATURE FROM QUEENSTOWN TO HALIFAX.

Date.	Surface.		26 ft. Below surface.		Air.		Barometer.		Wind.	Force.	Weather.	Lat. North.	Lon. West.	Hy.
	9 a.m.	3 p.m.	Noon.	Midnt.	9 a.m.	3 p.m.	9 a.m.	3 p.m.						
1867.														
April														
28	49½	50½	50	52	51	53	29.68	29.80	S.W.	7	b.c.	51.24	9.15	27.5
29	52½	52	52	54	53	54	29.50	29.29	W.	7-8	c.g.q.r.	51.28	12.23	27.5
30	52	53	52	54	53	49	29.8	30.		8-9	b.c.q.p.	50.7	13.7	27.5
May														
1	52	52	54	54	56	52	29.96	29.93	W.b.S.	3	c.m.	49.40	14.57	27.5
2	52½	53	52	52	57	57	29.74	29.80	W.	3	b.c.	50.4	17.53	27.5
3	53	53	54	54	56	56	29.73	29.63	S.E.	2-3	c.	49.49	19.51	27.5
4	53½	52	54	54	57	58	29.59	29.58	W.N.W.	1	b.c.	49.20	22.32	27.5
5	52	54½	54	54	54	54	29.57	29.79		7	b.c.q.p.	48.26	26.31	27.5
6	55½	56	54	54	54	52	29.8	29.5	W.b.S.	7	c.q.	46.48	29.37	27.5
7	54	55	58	58	50	53	29.29	29.54	N.W.	9	b.o.m.	46.25	30.37	27.5
8	58	58	56	56	53	55	29.59	29.74	W.N.W.	9	c.m.	44.20	31.32	27.3
9	58	58	60	60	55	57	29.80	29.92	N.b.E.	7	b.c.q.p.	43.14	34.23	27.3
10	60	60½	58	58	57	57	30.04	30.12		6	c.q.	42.13	37.23	27.3
11	62	62	56	56	57	60	30.18	30.21	N.N.W.	3	b.c.m.	40.46	38.11	27.3
12	63	64	56	56	63	64	30.14	30.15	N.W.	3	c.m.	40.33	40.48	27.5
13	64	66	62	62	64	67	30.16	30.	W.b.S.	4	b.o.m.	40.49	43.56	27.3
14	64	63	64	64	62	59	29.64	29.73	W.N.W.	6	b.c.q.	41.52	44.41	27.3
15	67	65	62	62	60	63	29.97	30.17	N.W.	6	b.	40.42	47.11	27.3
16	61	61	66	66	62	66	30.14	30.11	W.S.W.	2	b.c.	40.17	50.27	27.3
17	65	65	64	64	64	66	29.94	29.93	W.	5	"	41.22	52.30	27.8
18	66	65½	64	64	62	65	29.95	29.84	Vble.	1	"	41.7	54.17	27.3
19	54½	51	54	44	63	60	29.71	29.72	W.	2	"	42.12	55.2	27.3
20	46	48	47	47	44	46	29.70	29.79	N.W.	5	b.c.q.	42.14	55.2	27.3
21	66	70	64	64	54	56	29.94	29.89	Vble.	1	c.g.d.	42.2	56.90	27.3
22	63	41	56	56	52	51	29.86	29.76	E.b.S.	5	c.d.	42.47	59.0	27.3
23	44	43	43		41	48	29.74	29.85	S.E.	3	f.d.	Halfax.	Halfax.	27.3

## LIFE-BOAT SERVICES ON OUR COASTS.

*Royal National Life-boat Institution.*

—“ Presided o'er with skill,  
They keep the boat subservient to their will ;  
And while around the threatening billows leap,  
Defiant brave the dangers of the Deep !”

*The Life-Boat.*—A. J. ISMAY.

WE continue our usual account of gallant services rendered by the noble deeds of our life-boat crews :—

The sum of £12 9s. was voted for the Institution's life-boat at Maryport, Cumberland, saving seven men from the brig *Robert Bruce*, of *Belfast*, wrecked near Maryport on the 7th ult. The upper parts of the hull and decks of the ship were breaking up before the crew could be got on board the life-boat, and the floating wreckage made it very difficult and dangerous for the boat to get near the vessel.

£14 10s. was granted to the Society's life-boat at Thorpeness, Suffolk, rescuing in a strong gale and heavy sea on the 8th ult., eight men from the barque *Selina*, of *Falmouth*, which took the ground near Misner Haven, and afterwards became a total wreck.

The Cadgwith lifeboat of the Institution had put off on the 9th ult., during a heavy gale, and saved eight men from the ship *Calcutta*, of *London*. The Lizard lifeboat also put off with the view of saving the lives of some of the crew of the same vessel. In acknowledgment of these noble services the owners of the *Calcutta* sent a donation of £200 to the Institution and to the crews of two life-boats.

The sum of £16 3s. 6d. was likewise voted for the Margate life-boat of the Institution in rescuing five men from the schooner *Friends*, of *West Hartlepool*, wrecked on the rocks to the east of Margate-jetty, during a heavy gale on the 12th ultimo. The life-boat's stem was broken away on the occasion, and the boat had to undergo a thorough repair.

£12 18s. were also granted to pay the expenses of the Thurso life-boat, in putting off on four occasions and saving four men from the schooner *William Thompson*, of *Dumfries*, three men from the schooner *Blossom*, of *Thurso*, four men from the schooner *Elizabeth Miller*, of *Thurso*, and eight men from the schooner *Calder*, of *Findhorn*.

£25 was also voted to pay the expenses of the Caister saving the crew of twenty men of the ship *Hannah Pettersen*, of *Bergen*, which had stranded on Yarmouth beach on the 22nd ult. This life-boat had also rendered valuable assistance to the barque *Eliza Caroline*, of *London*, on the night of the 5th idem. The Lowestoft life-boat was likewise the means of bringing safely into harbour, with the assistance

of a steam-tug, the brig *Beatrix*, of *Whitby*, and her crew of seven men on the 7th ult.

The Ramsgate life-boat also saved eleven men of the crew and a pilot from the barque *Highland Chief*, of *London*, on the 12th ult. The expenses, amounting to £10 12s., were also ordered to be paid on the Winchelsea life-boat, for going off and saving eight men from the brig *Pearl*, of *Shoreham*, on the 14th ultimo. About twenty minutes after the men had been rescued, the vessel heeled over on her beam ends and was covered with water.

£20 18s. was also voted to pay the expenses of the North Deal life-boat in putting off and saving nine men from the ship *Ingrie*, of *Amsterdam*, which was wrecked during a gale of wind near the Goodwin Beacon, on the 24th ult.

Rewards were also granted to the crews of the Society's life-boats at Porthleven, Penzance, Thorpeness, Rye, Great Yarmouth, Padstow, Drogheda, Girvin, Holyhead, and Pill, for various services during the recent heavy gales. Various other rewards were also granted for saving life from shipwrecks on our coasts.

The Committee decided to station a life-boat at Alderney. Lord Strafford had munificently offered to defray the cost of the boat, his lordship having previously presented to the Institution the Weymouth life-boat. It was reported that the Ancient Order of Foresters intended to present to the Society another life-boat.

The late Mr. Benjamin Mendes Dacosta had left the Institution a legacy of nineteen guineas. Payments amounting to £1,600 were ordered to be made on various life-boat establishments. During the late storms and high tides seven of the life-boat-houses of the Institution had been seriously injured.

The Committee expressed their sincere regret at the death of Admiral R. Gordon and Captain C. R. Egerton, R.N., who had been for many years active members of the Committee of management of the Society. Admiral Tarleton, C.B., was thanked for his long and valuable co-operation to the Institution while holding the important appointments of Controller and Deputy-Controller General of her Majesty's Coast Guard Service.

£12 15s. was voted to pay the expenses of the life-boat Glasgow Workman, stationed at Ayr, N.B., in putting off during a gale and rescuing the master of the schooner *Doddington*, of *Dumfries*, which was in distress near Ayr Harbour, on the 4th ult. The rest of the crew had left the vessel in their own boat. The master had only just been saved by the life-boat when the ship capsized and became a total wreck.

The Holyhead life-boat Princess of Wales had also put off twice during a strong northerly gale, and in a heavy sea, to the assistance of the crew of eighteen men of the Brazilian barque *Adelaide*, of *Pernambuco*, which had anchored in a very dangerous position, on the east side of Holyhead Bay, on the 2nd ult. On the second occasion, the gale having freshened, the life-boat stood by the vessel until she slipped her anchors and ran into the inner harbour.

£16 was also granted to pay the expense of the Pakefield life-boat Sisters, in putting off during a fresh gale on the 6th ult., and saving the crew of seven men of the schooner *James Cuckow*, of *Ipswich*, which became a total wreck on the Barnard Sand. This life-boat had also put off on the 22nd, and rendered assistance to the brig *Henrietta Grove*, of *Granton*, which had grounded during a fresh gale in Pakefield Gateway.

£18 19s. was also voted to pay the expenses of the Fishguard life-boat, the Sir Edward Perrott, in going off twice during a strong gale, and rescuing, after having been beaten back on the first trip, four men from the schooner *Mary Lloyd*, of *Carnarvon*, which was wrecked on the Goodwick Sands on the 19th ult.; also on the following day six men from the brigantine *Rebecca*, of *Carnarvon*, which had all her sails blown away during a strong gale. Nothing could exceed the splendid manner in which the boat and crew behaved on both occasions.

The thanks of the Institution, inscribed on vellum, were voted to G. N. Maule, Esq., barrister-at-law, member of the Ilfracombe local committee, and £12 to the crew of the Ilfracombe life-boat Broadwater, in acknowledgment of their valuable services in saving sixteen men from the Italian barque *Drago*, of *Genoa*, on the 20th ult. Lieut. Williams, R.N., the inspecting officer of Coastguard, was also very active in his endeavours to get the boat afloat, and the thanks of the Institution were voted to him.

£17 13s. 6d. was also granted to pay the expenses of the Oxford University life-boat, the *Isis*, stationed at Hayle, in putting off during a violent storm, and saving the master and seven men of the brig *Lizzie*, of *Newport*, Monmouthshire, on the 20th ult. The boat was two hours battling with the storm before she could reach the vessel. The St. Ives life-boat *Moses*, was also taken to the scene of the wreck, and remained in attendance in case of any accident occurring to the Hayle life-boat in rescuing the crew.

£24 10s. 6d. was voted to pay the expenses of the boat on that occasion, and also in putting off and saving the crew of five men of the *Ariel* schooner, of *Truro*, on the 20th ult.

£24 5s. was also granted to pay the expenses of the Palling life-boat *Parsee*, in going off during a strong gale, and saving the crew of six men of the brig *Zosteria*, of *Colchester*, which had stranded on Palling beach on the 20th ult.

£9 10s. to pay the expenses of the Margate life-boat *Quiver*, in putting off and saving four men from the barge *Earnest*, of *Ipswich*, which during a gale had become unmanageable off Margate on the 20th ult.; also £9 to pay the expenses of the Yarmouth surf life-boat *Duff*, in going off and rescuing four men from the brigantine *Cherub*, of *Yarmouth*, on the 20th ult.; also £11 15s. to pay the expenses of the Sheringham life-boat *Duncan* in putting off and saving three men from the schooner *Francis Ann*, on the 20th ult. The Brixham life-boat *City of Exeter* had also gone off and brought ashore at midnight, during a heavy storm, a man whose arm was broken, and who was

one of the crew of the brigantine *Helena*. The vessel and her crew were afterwards brought in by a steamer. The Ramsgate life-boat Bradford and steamer Aid, after several unsuccessful attempts, had succeeded in bringing the schooner *Pride of the West, of Penzance*, and her crew of six men, safely into Ramsgate harbour.

Altogether, during the past month, the life-boats had been instrumental in saving eighty-nine lives and three vessels.

Rewards were also granted to the crew of the Society's life-boats at Padstow, Broadstairs, Lizard, Rye, Cadwith, Tynemouth, Hunstanton, and other places for various services during the recent heavy gales.

A grant of £20 was made to the widow of George Wyatt, who had lost his life in nobly assisting to rescue with his smack the crew of seven men of the Danish schooner *Alwilda, of Holbeck*, which was wrecked on the Long Sand on the 13th February. Wyatt had received the silver medal of the Institution for his previous gallant services in saving life from shipwreck. Other rewards were also granted for saving life from wrecks. Payments amounting to £540 were also ordered to be made on various life-boat establishments.

It was stated that Mrs. George Davis, of Clapham, had presented to the Institution a life-boat to be named the Husband. Sir Robert W. C. Hamilton, Bart., had also collected among his friends and others in South Warwickshire the cost of the life-boat proposed to be stationed on the Isle of Arran, N.B. It was decided to form life-boat establishments at Corton, Suffolk; Sidmouth and Salcombe, Devon; and Mewagissey, Cornwall; and to place an additional life-boat at Lowestoft.

New life-boats had also been recently sent to St. David's, Pembrokeshire; and to Drogheda, Ireland. The life-boat *fêtes* and bazaar held in Exeter during Easter week on behalf of the twenty-two life-boats of the Institution on the coast of Devon and Cornwall had been attended in every way with great success. Through the unceasing exertions of all connected with the movement a large sum had been collected in aid of the benevolent object in view, in addition to promised gifts of three boats to the Society by Richard Durant, Esq., R. T. West, Esq., and Mrs. Rinnington. On the occasion of the recent visit of the American Minister to Tynemouth, he had been much pleased with the exercise of the two life-boats of the Institution on that station.

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#### SPONTANEOUS IGNITION OF COAL ON BOARD SHIP.

Starcross, Devon, 17th April, 1869.

SIR,—I enclose a letter I have lately had printed in the cause of humanity, so if you have room I am sure you will give it a notice. It is frightful to think of the dreadful losses that common sense prudence might prevent. Yours very faithfully,

GEORGE PEACOCK.

DESTRUCTION OF VESSELS BY FIRE, *carrying Coal at Sea.*

On the important subject of spontaneous ignition in vessels at sea carrying coal, the following correspondence has taken place :

“ To Messrs. John Holman and Sons, Topsham.

“ Starcross, December 23, 1868.

“ Dear Sirs,—Referring you to my letter of the 17th inst., signed ‘ A Retired Steam Commander,’ it occurred to me to send you a description of my plan for ascertaining from time to time, at sea, the condition of a ship’s cargo when laden with coals, and, if found to be in a state of ignition, the means of promptly extinguishing the same, knowing that you have been sufferers by such calamities, recurrences of which, it is melancholy to see, are accumulating daily.

“ In the month of October, 1840, the ship *Portsea*, laden with a cargo of coal for the Pacific Steam Navigation Company, took fire off Cape Horn. With great difficulty the Captain managed to open the hatches, and throw overboard a considerable quantity of the ignited and heated coal, and by pouring water into the hold down the hatchways he succeeded in bringing the ship safely into Valparaiso, where the remainder of the cargo was discharged, when it was found that several of the hold beams and stancheons were burnt through and the ceiling charred in many places.

“ I was Marine Superintendent of the Pacific Steam Navigation Company at that time, and then suggested (twenty-eight years ago) that all coal ships in future should have a wrought-iron gas-pipe, two inches in diameter, fitted up and down the stancheons, leading up to the fore side of the fore hatchway-combings on deck, one at the afterpart of the main hatchway combings, and one abaft the mizenmast leading into the saloon or cabin—the latter with a stationary thermometer fixed at its top, the other two pipes to have screw-caps on them flush with the top of the combings and sufficiently clear to allow of battening down the hatches. These pipes to be perforated, say ten feet up from the keelson, so that, by unscrewing the caps at sea, a common bath thermometer might be occasionally lowered down in order to prove the exact temperature of the hold.

“ A sea-cock or screw-down-valve, to be fitted in all coal-laden ships at the light load-line, with a lever rod for opening or shutting, boxed off from the ship’s ceiling, leading into the Captain’s state-room, with an index plate and handle under lock and key, so that it could be opened or shut only at the discretion of the Captain; and the deck-pipes might also be used for pouring down water, by hose or funnel, without opening the hatches, in the event of fire. It must be borne in mind that, although apparently by the sounding-rod five or six feet of water or more might be let into the ship, the quantity of water would merely occupy the interstices of the coal, and after quenching the fire could be easily pumped out.

“ The cost of such simple appliances would scarcely exceed £10,

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and I would strongly recommend that all coal-laden ships should be compelled to have some simple, inexpensive plan of this sort fitted to them.

"I send this practical plan of mine for your consideration, as you are so extensively connected with Shipping and interested in Insurance, in hopes, that, by your setting the example, it may lead to general adoption for the benefit of the Mercantile Marine. You can make any use you please of this communication; and as I have no doubt you file the 'Shipping and Mercantile Gazette,' it might, perhaps, be worth your while to ascertain the exact number of coal-laden ships which are known to have been burnt at sea, damaged, or missing during the last twelve months only, with their names, tonnage, and value, for the information of the Board of Trade. I have an idea that the list would be found to be something alarming as to the value of property and *appalling* as to the loss of many valuable lives.

"I have the honour to be, Gentlemen, yours faithfully,  
"GEORGE PEACOCK."

"Topsham, December 28, 1868.

"George Peacock, Esq., Starcross, Devon.

"Dear Sir,—We have perused your favour of the 23rd inst., and much approve the simple method of ascertaining the degree of heat in a coal cargo, and of extinguishing fire by a sea-cock fitted above the light load-line. The *Mary Ann Holman* is now at Monte Video in consequence of her cargo of coals having ignited. She was fitted with ventilators running sixty feet along the keelson, with two upshafts or funnels two feet square, and leading through the main and after hatches. The method adopted by the Captain was to let several feet of water into the ship by boring holes, and, when the fire was got under, by lightening, and again drowning the cargo from above. By the use of a sea-cock a more ready and less dangerous means than boring holes would always be available.

"We purpose laying your letter before our committee at their next meeting.

"We are, dear Sir, yours truly,  
"JOHN HOLMAN and SONS."

#### THE LOSS OF THE PERSIA BY FIRE.

*To the Editor of the Nautical Magazine.*

P.S. "An enquiry has been recently held at Mauritius, presided over by Captain Wales, Harbour Master, into the loss by fire of the ship *Persia*. This vessel was from England bound to Bombay. Her cargo, consisting of coals, took fire in lat. 40° S., and long 22° E., and the captain and crew abandoned her when she was in flames to seek refuge on board the *Blackwatch*. The captain was exonerated from all blame, but what is worthy of attention by men of science and all interested is the concluding passage of the Report of the Board as follows:—

"In reference to this loss the Board would remark, that in their

opinion the burning of coal-laden vessels demands the serious investigation of scientific men. These fearful accidents are increasing in frequency, and spontaneous combustion is hardly a satisfactory conclusion to arrive at. Why is there spontaneous combustion? Why does one ship burn from that cause, and dozens of others laden from the same pit, at nearly the same time, arrive safely at their destination. Is ventilation of the coals advisable or dangerous? Ought hatches to be kept on or off? Could not inflammable gases be pumped out of ship's hold? Is there not a method of creating gases in an inexpensive manner on board ship that would smother and extinguish any amount of fire in a vessel's hold? Such measures are spoken of commonly enough, but are apparently never carried into practice. Three large coal laden vessels, the *Pernix*, *Volante*, and the *Persia*, have been burnt at sea, and their crews arrived in this colony during the last year. What destruction of property, what risk to life, what privation and suffering do these burnings entail! At this moment there is a valuable vessel in this port, coal laden, which narrowly escaped the same fate as the *Persia*, the coals having been smouldering many days before they could be extinguished. The Board submit these remarks for consideration, and hope that the very important subject they refer to may be thought worthy the attention of competent persons. Certainly any one who will point out the way in which coals may be conveyed to distant ports without greater risk than the generality of cargoes will have deserved well of Owners, Sailors, Underwriters, and last, not least, of humanity."

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### THE TRINITY HOUSE AND LIGHT DUES.

THE Elder Brethren of the Trinity House have availed themselves very freely of the opportunity afforded them by the Board of Trade, for replying to the facts and arguments of the Newcastle and Liverpool Memorials, on the subject of Light Dues and the existing management of Lighthouses. The agitation on this subject proposes to itself two objects which are distinct and should not be confounded—namely, the transfer of the cost of maintaining the Lights, Buoys, and Beacons of the United Kingdom to the public purse, and the revolutionising of the existing system by which the Lights, etc., are administered. To the examination of these objects and the arguments on which they rest the Elder Brethren have addressed themselves, touching briefly upon the general question, and dwelling at considerable length upon the existing management of the Lights system, and its unquestionable claims to public recognition.

The views of the Elder Brethren upon the question of transfer of the Lights may be briefly summarised. The proposed transfer being a question of imperial policy rather than departmental arrangement, they do not desire to express an authoritative opinion on the subject;



but they offer certain suggestions which, rightly considered, should, in their judgment, make the Legislature pause before giving its assent to the views of the memorialists. The Elder Brethren say, that, as matters stand, twenty-eight per cent. of the Light dues are paid by foreign vessels, and seventy-two per cent. by British shipping. After the British shipowner is relieved, the foreigner must be relieved also; and the effect would be, that the British shipowner, as a taxpayer, would have to bear his proportion—a trifle, it is admitted—of the remission of the dues made to the foreigner. Our shipowners, moreover, are reminded that it might be found, upon examination, that shipping property escapes local taxation, and that shipowners have special facilities granted to them in the management of their property and in dealing with their servants; and if to these advantages were to be superadded exemption from the Light Dues, “the final result of a compliance with the present agitation might not be so satisfactory to shipowners as a class as the memorialists suppose.” Regarded as a question of international obligation, the Elder Brethren say that the clamour for the abolition of the Light Dues rests upon a misconception. In many of the European ports, especially in the north, not only Light Dues, but Buoyage money and other charges on shipping, are still maintained. And as to France and America, if the Light Dues are not specifically charged, it may well be questioned whether equivalent charges are not included in the Port and Tonnage Dues levied in the Ports of those countries; and if we contemplate relieving the shipping of foreign States to the extent of twenty-eight per cent., we should be certain of an adequate return. But, in the opinion of the Elder Brethren, there is a still larger question behind. If it is proposed to abolish the principle “that those should pay who use,” this policy must not be limited to the Coast Lights, but must be extended to all local Lights, Buoys, and Beacons, the cost of which should also be borne by the public revenue; but this is a cost which has not been taken into account by the memorialists.

For these reasons—the value of which it is not very difficult to estimate—the Elder Brethren dissent from the proposal to place the maintenance of our Lights system on the imperial revenues; but, while taking that ground, they believe that certain modifications of the existing system might be introduced, which would have the effect of removing those inequalities in the operation of the existing system of taxation on account of Lights, which have been the subject of just complaint. For that system the Trinity House can hardly be held responsible, seeing that, for the past fifteen years, the imposition or abatement of Light Dues has rested with the Board of Trade. The principle now adopted is one of “an equal abatement on all tolls, without regard to the question whether any individual Light is paying its expenses or earning a surplus or otherwise.” This arrangement the Elder Brethren think might be changed with advantage, by allowing the abatement in those Trades where the Light Dues leave a surplus, and leaving the tolls where the trade is light, untouched. This would, in the opinion of the Elder Brethren, afford the relief

sought; and to this should be added a remission in favour of steamers, which in making their voyages, pursue for the most part direct courses, and consequently, are not beholden to particular Lights which are essential to the navigation of sailing vessels, whose courses are frequently only made by beating to windward, and who constantly use Lights which are not necessary to the safety of steamers, though engaged in the same trade.

Passing from the general question of the abolition of the Light Dues as a question of public policy, the Elder Brethren proceed to give an account of their stewardship—and it is but right to say that, having a good case, they have made the most of it. We think there is a general feeling and common consent that the work entrusted to the Trinity House, both in the construction and maintenance of Coast Lights, Beacons, etc., has been performed with remarkable efficiency. The question has been, whether the service, however efficiently rendered, has not been too costly. We think the Elder Brethren have met this objection fully and satisfactorily. The total cost of the establishment at Tower-hill is put down at £7,774. The Elder Brethren are twenty in number, and they receive amongst them £7,000 per annum, or about £300 per annum each. The total expenditure on the supervision of Lights was, in 1867, £37,004 or eighteen per cent. on the total expenditure. There are eleven vessels constantly employed in the Lights business—viz., four in the London and Harwich district, one in the Yarmouth district, one for Ramsgate, one for Penzance, one for the Isle of Wight, one for Plymouth, and two for Milford. These vessels were employed from the 12th of April, 1868, up to the 20th of February, 1869, on periods of service varying from forty-one days in the Penzance district to one hundred and ninety-nine days in the Milford district, and two hundred and six days in the London and Harwich district. At the close of 1853 the payments on account of Lighthouse and other works made by the Trinity House ceased, and in the following year the new system under the Merchant Shipping Act was introduced; the money necessary for these works was thenceforth provided by the Board of Trade out of the Mercantile Marine Fund. But all these works are still provided for by the Trinity House, and are superintended and managed by the Elder Brethren. The total amount expended under their auspices, since 1853, on the construction of Lighthouses, Lightvessels, Beacons, Fog Signals, Storehouses, and Wharves, is stated at £760,764, and this sum does not include the cost of new steam vessels and sailing tenders.

It is we believe, admitted, by those who are acquainted with the facts, that this money has been well and judiciously expended; and as it has been expended under the surveillance, at least, of the Elder Brethren, they are entitled to the credit which is due to the completion and character of the works. The general result of our Lights system is, that we have now a total of four hundred and ninety-nine Lights. The seaboard of the United Kingdom is some 4,200 miles in extent, and it is lighted by one hundred and seventy-one Coast Lights and

forty-nine Lightvessels. Besides, however, the superintendence of our Lights system, in itself a task requiring constant vigilance and exertion, the Elder Brethren have other and important functions to discharge. They have an extensive jurisdiction in matters of Pilotage and Ballastage, they are the guardians and administrators of the Pilots' Fund, and they assist the High Court of Admiralty in the capacity of Nautical Assessors. For services so varied, so important, and we must add, in justice, so adequately performed, a sum of £7,000 per annum, distributed amongst twenty men, is no excessive remuneration.

We are not sure that the interests of shipping or of commerce would gain by the substitution of any other machinery for that which is in operation on Tower-hill—of late years, it need not be denied, under salutary restraints. In the letter to which we have directed attention, the Elder Brethren have fairly vindicated their right to be regarded as efficient and valuable public servants. Their statements, to that extent, we regard as unanswerable—not so their arguments against the abolition of the Light Dues. So far as those arguments are founded upon a consideration of the advantage we may confer upon foreign States without being sure of an equivalent, they are feeble, and at variance with the commercial policy which this country has long since adopted. So far as they are addressed to the fears or cupidity of shipowners, they are unworthy of the occasion, and eminently inconclusive. It is an imperial duty which we owe to ourselves, and to the foreigners who trade with us, to light our shores, and to afford, at the national charge, every facility for the safe navigation of our waters. In the adoption of such a policy we cannot now afford that any Maritime State should set us an example of liberality, and still less can we afford that the discharge of a high duty such as this, should be interfered with by considerations of local or official prejudice, or of small advantages or disadvantages affecting any section of the commercial community.—*Mitchell's Maritime Register.*

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#### CANAL PROJECTS.

AMONG the latest schemes of commercial enterprise, are plans for making short cuts by canals for the passage of shipping. The French are proposing one, while at Liverpool another is talked of connecting Dublin Bay with Galway. The French would connect the Atlantic and Mediterranean by a canal through the valley of the Garonne. We have frequently alluded to the project of Mr. Lesseps at Suez, and we have just met with a similar proposal for Darien. We will preserve the record of each of these schemes as interesting to our readers.

The French scheme runs thus :—The project of establishing through the valley of the Garonne (France) a canal for large navigation, to connect the ocean to the Mediterranean, has been often mooted ; but

there is now a new plan for this undertaking, under the auspices of M. Staal de Magnoncourt, late peer of France. The proposed canal will admit not only merchant ships of the heaviest tonnage, but also men of war and Transatlantic steamers. A port is to be established in the Gironde, just below Bordeaux, and another on the Mediterranean. The cost of the scheme is estimated at 442,000,000 francs, and the cutting of the canal would occupy six years. The plan, if carried out, will materially shorten the navigable communication between England, the north of Europe, and India, for it will in fact be a continuation of the Canal of Suez.

THE Irish plan is briefly stated as follows, the first proposal of the kind we have met with, but doubtless if carried out the scheme would save many a wreck both north and south of Ireland, but would require a good establishment of tugs at each entrance:—The latest piece of news in connection with ship canals is a proposition to cut a canal, navigable for the largest class of American and other vessels, between Galway and Dublin. Some Liverpool men are actively canvassing in favour of the scheme, and it is stated that so well approved is it by Americans that the necessary capital could all be raised in the United States. The distance between the two ports is about one hundred miles, the ground flat, and it is understood that no engineering difficulties of moment are in the way, while a large amount of time would be saved, and danger and shipwreck avoided. The scheme embraces a fleet of steamers for towing purposes.

These are just the kind of schemes which belong to days like these, marked by a profound peace, when every modern improvement of the engineer would be effectually brought into operation.

WE find the following relating to the Darien Canal, in lieu of the present railway, in that valuable work, *The Mechanics' Magazine*.

It has been announced that the President of the United States had sent to the Senate, for ratification, a treaty which has been concluded with the Government of the United States of Colombia, respecting a ship canal across the Isthmus of Panama. This important circumstance has been brought about by General Caleb Cushing, to whom was entrusted the negotiation of the treaty, which grants extraordinary privileges for constructing the proposed work. By our last advices from America it appears that the full text of the treaty had not been promulgated up to Feb. 20, although the substance was known. From the American "Army and Navy Journal" we gather that the treaty grants the exclusive right to the United States to construct the canal anywhere between 4 deg. and 18 deg. north latitude. The Colombian government has agreed to give a large section of land on either side of the route selected, and guarantees the perfect neutrality of the canal in time of war. This latter clause in the treaty was found most difficult to settle, and for a time interrupted the negotiations between Mr. Sullivan, the American Minister, and the Colombian authorities. Mr. Sullivan maintained that the right should be stipulated for

Colombia and the United States to close the canal, in time of war, against the vessels of any other nation with which either of them were at variance. Colombia was willing to agree to almost anything in order to secure the construction of the canal, but she was not quite ready to concede this point. If she did so, her statesmen argued, foreign nations other than the United States would make it the pretext for a quarrel, in which case she, being a weak nation, would receive all the blows, while the contesting nations would reap all the advantages. Mr. Sullivan insisted upon his point, the Colombian commissioners resigned, sometime in December, and thus brought the negotiations to an abrupt conclusion. General Cushing arrived at Bogota on the 3rd of January last, specially commissioned by Secretary Seward to conclude the treaty. A few days afterward new Plenipotentiaries were appointed by the Colombian government, and the business was resumed with such energy, that in five days the terms of the treaty were settled, and a contract approved by the President. The neutrality clause, it appears, was adjusted in a manner which was considered fair to all parties concerned, and so arranged as not to give offence to European nations.

The work of constructing this canal will not be carried out by the American government. This was never intended, It will, however, be effected by a company which was formed some time since for the purpose, and which has capital waiting for the treaty to be concluded. At the head of this band of capitalists stands the name of Commodore Vanderbilt, the remainder are gentlemen who, we understand, are amongst the foremost and most energetic capitalists in America. The question of connecting the Atlantic and Pacific Oceans has been mooted several times before the present. The undertaking, however, is of such gigantic proportions that, notwithstanding concessions quite as liberal as those now made have been offered before by the government of New Granada, none have been found equal to the task of even exploring, with any degree of success, for a route. The nearest step which was ever before taken towards constructing a canal was in 1853, when an English Company was formed, with £15,000,000 capital, for the purpose of carrying into execution a plan of Dr. Edward Cullen, who had made some observations and assumed that, "if levels should prove as they were supposed to be, a canal capable of passing the largest vessels might be constructed from the bay of San Miguel, on the Pacific coast, to the bay of Caledonia, on the Atlantic." The United States and Great Britain, by treaty, agreed to extend their protection to all parties engaged in the construction of the canal. After Dr. Cullen's plan had been thoroughly discussed, the English company determined to abandon it, and proposed to adopt one of the Nicaragua routes and build a canal of smaller dimensions. The United States government then withdrew its protection, which course was followed by a similar withdrawal on the part of Great Britain. The present project has formed the subject of no less than four previous charters, which have been granted at various times by the government of New Granada and its successor, the United States of Colombia. One of

these charters was granted in 1851; one in 1852; another, that to Dr. Cullen, 1853; and a fourth in 1855. These concessions were all made to private parties or corporations, as the government avoided any alliances. The failure of private enterprise, however, has at last led to the conclusion of the treaty in question.

In constructing a canal across the Isthmus of Panama far greater engineering difficulties will have to be overcome than attended the construction of the Panama Railway, which was completed within five years. The length of that road is about 48 miles; its maximum gradient is 60 feet to the mile, and its summit level 259 feet above the sea level. To overcome such gradients locks will have to be constructed, and the main difficulty appears to be the finding of water for their supply. In 1843 two French engineers made examinations over the ridge of the Ahogaytequa, the highest point of which was 260 feet above the sea. They could devise no other way of building the canal but by constructing a tunnel through the mountain, the level of which should be 135 feet above tide, and the approach on the Atlantic side by eighteen locks, and on the Pacific side by seventeen. The available drainage area being limited, it was thought doubtful if any feasible system of reservoirs could be devised. We have at present no data upon which to found any further remarks upon the difficulties which must be overcome in building this canal. The Panama railroad route exhibits the one most easily surmounted, and even that may not be practicable for a canal. The plan of the French engineers, cited above, shows one of the chief difficulties in the way of the lock system—the insufficient supply of water. The gentlemen who have the undertaking in hand are men of experience in public enterprise; have doubtless counted well the cost, and are prepared to execute this great undertaking even though they should be compelled to tunnel the mountain at its base, or cross over it with locks, supplying the water to the reservoirs by artificial means. The great Central American Isthmus is, in fact, a chain of isthmuses, being formed of several necks, connecting large swells or lobes of extensive areas. Accordingly, we have the Isthmus of Panama at Panama; the Isthmus of Darien at the Atrato river; the Isthmus of Nicaragua at the lake of that name; the Isthmus of Honduras at the bay of that name; and the Isthmus of Tehuantepec at Tehuantepec. The general trend of the Pacific coast of Central America is northwest and southeast, but the Atlantic coast has a very irregular shore line. The Cordilleras, connecting the mountain systems of the country, lie near to and parallel with the Pacific coast. This mountain system is the great obstacle to the construction of a canal. It may be easy enough to follow a river to its head in the mountains, but to cross in the ordinary way by a mountain summit level is almost impracticable, because there is no drainage basin or area available for supplying the high summit level with water, and the mountains could only be tunnelled at an elevation when the full-sized river could be diverted into the tunnel level.

We will not, however, meet these difficulties half way, but we will assume that they will be overcome by the engineering skill of our

American friends, who have executed and are now carrying out works approaching in magnitude to those in question. By the completion of this canal, great advantage would accrue to America, and her commerce would make still more rapid strides than it at present is making. It is estimated that the saving in distance by the Isthmus canal will be as follows :—New York to Calcutta, 4,100 miles ; to Canton, 8,900 miles ; to Shanghai, 9,600 ; to Melbourne, Australia, 3,340 miles ; to Jeddo, Japan, 6,490 miles. Here is an immense saving in distance which is invaluable to commerce. Another point to be considered is that a canal would enable vessels to pass from ocean to ocean without breaking cargo. A smaller class of ships too could be employed in the carrying trade—vessels whose safety would be endangered by a passage round the Horn. It is estimated that the commerce around Cape Horn and over the Isthmus of Panama now amounts to about 3,500,000 tons annually, at an expense of, say, 10 dollars per ton, making a total of 35,000,000 dollars per year. Suppose half this expense should be saved by the construction of a canal, would not the enterprise pay, even if its building should absorb millions? The Panama Railway cost about 9,000,000 dollars, and nearly paid for itself in the first seven years. The road is now paying handsomely, and rewarding its shareholders with heavy dividends. The trade of England, France, and the United States, that would, in all probability pass through the canal, has been estimated at 467,000,000 dollars, and as these figures were made up after careful study of the subject they may be deemed very nearly correct. It is estimated that the saving in money to the trade of the United States would be 36,000,000 dollars ; to the trade of England, 9,958,000 ; to the trade of France, 2,180,000 dollars ; and the trade of the combined world, 49,500,000 dollars. Should the trade of the world increase in the same ratio—100 per cent.—for the next ten years, that it has for the past ten, there will accrue a saving of 100,000,000 dollars, when the canal is finished. These figures are of course only hypothetical, but enough has been said to show the importance of the scheme to the world in a commercial point of view, and to prove that a great saving would accrue to all nations from the construction of the canal. We shall watch with interest the progress of this great work, which we hope to see one day brought to a successful issue by our American friends, to whom we wish every success.

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#### PARLIAMENTARY EXTRACTS.

WE conclude our Extracts from the very elaborate and instructive speech of the first Lord of the Admiralty, on bringing forward the Navy Estimates.

With respect to economy in these great dockyards, I will just allude to what we propose to do under vote 11, which is the vote for the

building expenditure. That part of the vote which concerns buildings is less by £38,000 than it was last year. Last year the amount was £76,000—this year it is £73,500. The cause of that diminution is not any falling off in the amount appropriated for dockyard buildings; on the contrary, we have increased the amount. The expenditure on Chatham last year was £420,000—we propose to take £470,000. We propose also to take £30,000 to complete the dock at Malta, and £15,000 for the floating dock to be sent to Bermuda. Where we economise is in matters of petty expenses in connection with all the dockyards; on great works we propose to expend £50,000 more than was spent last year.

There is one dockyard to which I cannot help alluding. It is the dockyard of Keyham, with which the name of my right hon. friend opposite (Mr. Corry) is so closely associated. No doubt among the many things for which the House and the service are indebted to him, the construction of that great establishment is one of the greatest; and most thoroughly has it answered its purpose. It was proposed by a Committee of 1864 to carry out still greater works in the way of basin accommodation, but I do not think that is at present necessary, especially considering what we are doing at Portsmouth and Chatham. I think that under the circumstances it would be wrong to enter upon an expenditure of several hundred thousand pounds for increased basin accommodation at Keyham. The recent extension of the works at Keyham is now completed, and in a state of permanent efficiency, and I should be glad to find that no further extension was necessary.

The dockyards are not now the only great establishments of this country. We have very extensive establishments called victualling yards, where the food of our men is prepared and shipped, and we have also very large naval hospitals at our principal dockyards and naval ports. We have been making inquiries as to each of these great establishments, and those who look at the estimates will see that instead of rashly effecting detailed reductions, when we have not had time to complete our inquiries we have taken a gross sum, knowing that we shall be able in the course of the spring to mature more efficient arrangements. In the case of the victualling yards there is a very heavy charge for superintendence, and the arrangements between the superior officers of those yards, however ancient and well-considered, are not altogether satisfactory; on the contrary, they are in many respects anomalous, and the time has come for reconsidering them. The course which I propose to take is one which, after the debate this evening, I cannot doubt, will expose me to some severe questioning. The noble lord to whom I alluded before (Lord Camperdown) has, through what appears to me a wise arrangement, undertaken some very useful duties connected with the Admiralty. As there are old admirals as well as old generals in the House of Lords, it is desirable that the Government should be able to answer questions there, and it has been thought desirable to have the noble lord's assistance for that purpose. Lord Camperdown has spent some time in visiting the victualling yards in company with other naval officers, and he has



made a very extensive and valuable report to the Admiralty, founded upon which we hope to carry out very judicious and economical arrangements. His report has not yet been fully considered, but I anticipate considerable benefit from the minute and careful examination which he has made in connexion with those establishments.

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At the present time our fleets on the south-east coast of America, in the Pacific, or the Australian station, or the China station, or the East India station, at the Cape of Good Hope, and on the west coast of Africa, consist of 80 ships, with 11,767 men. We are already carrying out arrangements with the entire concurrence of the Foreign-office, under which the 80 ships will be reduced to 64, and the 11,767 men to 8,500, making a reduction of 16 ships and 3,267 men. This reduction of men, added to that which was effected last year, gives altogether a reduction of 6,600. Let me give the House the details of the proposed reductions. At present we have on the south-east coast of America six ships and 969 men: in the Pacific, 12 ships and 2,755 men; on the Australian station, four ships 776 men; on the China station, 34 ships and 4,008 men; in the East Indies, seven ships and 1,275 men; at the Cape of Good Hope, three ships and 505 men; and on the west coast of Africa, 14 ships and 1,475 men; making the total of 80 ships and 11,767 men, which we have now reduced to 64 ships and 8,500 men. On the East India station we have effected an arrangement which I hope the House will approve. We have called upon India to pay her share of the cost of naval defence. It has been proposed from time to time to restore the old Bombay navy, for the purpose of keeping a small fleet in the Persian Gulf. That proposal, however, did not meet with acceptance from the late Government, and it has been arranged that India shall pay a capitation grant of £7 per man, the effect of which will be that India will have to pay £7,000 a year for a thousand men. While we propose these reductions on our foreign stations, we propose to send a flying squadron to visit those stations, and for this purpose we shall employ six or seven very fine ships. \* \* \*

We have also diminished the number of stokers. We have also made an arrangement under which a certain number of blue jackets will upon emergency be employed as stokers, with a small additional pay, as in the case of the French navy. These are the principal reductions which we have made in the seamen and non-seamen class, and I beg to repeat that it is not our intention to diminish by one single man the really effective number of our seamen. With respect to the boys we propose a reduction of 400, but this is purely a matter of arithmetic, leaving a sufficient number rated as men to make up for the waste in the navy. With respect to the reduction of non-seamen there are some facts which may be interesting. Ever since 1858-9 the non-seamen class has steadily increased, while the seamen class has steadily diminished. In 1862-3 the blue jackets were 27,000, and the non-seamen 10,000. In 1863-4 the blue jackets were 24,000, the non-seamen 11,000. In 1864-5, the blue jackets were 23,000, the non-seamen 12,000; and in 1867-8 the blue jackets were 20,615, and

the non-seamen 12,718. These figures sufficiently show that any reduction should be in the non-seamen class rather than in the blue jackets. With regard to the coastguards, we can do so with perfect safety in as far as its being a reserve of the navy. In 1865-6 the present establishment of the coastguard was settled, and at that time there were in the coastguard only 4,000 of the seamen class, while there were 1,200 civilians. There has been a pretty steady increase, so that now there are 4,500 of the seamen class.

On a more recent occasion Mr. Childers thus expressed himself on the subject of turret ships. He observed that on the last occasion the right hon. gentleman opposite had announced his intention to oppose the building of the two sea-going new turret ships which the Government purposed constructing in the public dockyards—in other words, to move the reduction of the vote by £30,000 or £40,000. Such a step would, however, be very impolitic. In the first place, the Government had already proposed to reduce the dockyard establishments this year by about a thousand men; and if the amendment was carried, 600 more would have to be dismissed, which would be carrying the principle of economy even farther than he, who had been accused of too much parsimony, was prepared to go. It would, moreover, be impolitic suddenly to discontinue even a moderate amount of ship-building. Last year the right hon. gentleman opposite had proposed to construct six ironclad vessels, and this year it was only intended to build three. Nor was he prepared to advise the substitution of any other class of ships for those which he had described to the House.

Leaving out of the question the *Hotspur*, to which no objection was raised, he would remind the Committee that the ships he proposed were two of 4,400 tons each, of 285 feet in length, and from 25 feet 9 inches to 26 feet 6 inches draught of water. They would have engines of 800 nominal horse power, and would be able to make  $12\frac{1}{2}$  knots per hour. They would have the remarkable power of carrying 1,750 tons of coal, which would enable them to steam 10 days at 12 knots, 18 days at 10 knots, and from 25 to 35 days at lower speeds. They would each have a crew of 250 men, and they would have two turrets, each with two 25-ton guns. They would have 4ft. 6in. of free-board, and a species of breastwork 7ft. more, making a height of 11ft. 6in. They would have from twelve to twenty inches of armour on their sides, and from twelve to fourteen inches on their turrets. They would be sea-going ships without masts, so that they would have an all-round fire. The right hon. gentleman said that the proposal was a rash one, because these ships were like no others that had yet been made. That statement, however, seemed a little surprising; for these ships were but a considerably improved version of the *Glatton*, which the right hon. gentleman opposite had himself proposed to build. The difference between the two ships proposed was this. The *Glatton* was 245 feet in length, whereas the turret ship proposed by the present Government was 285. The *Glatton* drew 20 feet of water, which, according to his right hon. friend, ought to be the extreme limit of the draught of a vessel intended for harbour

and coast defences, which at the outside he said ought not to exceed 17 feet, and properly not more than 14. In point of fact the ship proposed to be constructed was nothing more than an improved *Glatton*.

They were proposing nothing new when they proposed to send ships to sea without masts, but only following up and vastly improving the plan suggested last year. It was said that ships with twin screws drawing 20 feet of water would fail, but after having made inquiries in every direction they had found no evidence to support that opinion; on the contrary there was every reason to suppose that the deeper the draught the more effective they would be. The *Glatton* was a twin screw ship with 14ft. draft; but neither in theory nor practice was it found that twin screws would not be effective at a considerable draught, because there was actually a French vessel with twin screws drawing 20ft. It was objected that they ought not to build a turret ship drawing 26ft. because it would not be effective for coast and harbour defences, but these ships were not intended for such purposes, but as sea-going ships of enormous power which would be most effective as fighting ships, and were not intended for coast and harbour defences. So far as the safety of the ships was concerned, they were provided with four engines as well as twin screws, so that three of the engines and both the screws would have to be disabled before the ship would become incapable, while they were enabled to obtain what was impossible to obtain in a masted ship—the all-round fire.

The Admiralty were not willing to act entirely on the professional knowledge within their own board, and they had consulted several eminent naval authorities, including Sir S. Dacres, Sir S. Robinson, Captain Cole, Mr. Fairbairn, Captain Wilton, also some gentlemen who were on the Turret Ship Committee, and after the most careful consideration they concurred in the opinion that the necessary thickness of armour plating could only be carried by vessels with a low free-board, that the height of the design was sufficient for the service for which the vessels were intended, that great draught of water was favourable to the action of twin screws, and afforded greater protection against their disablement, that the absence of masts was indispensable to the service such vessels were intended to render, and their absence was more than counterbalanced by the advantage of the double engines. They were asked why they did not suspend their operations till after the trial of the *Captain* and *Monarch*; but those vessels afforded no fair grounds of comparison by which they could be guided in forming a judgment as to whether they ought to build the proposed vessel. The free-board of the *Captain* was eighteen feet, and that of the *Monarch* fourteen feet, whereas the free-board of the vessels the Government proposed to build was only four feet six inches. They had before them the example of the two American monitors, of more than three thousand tons, which had successfully crossed the Atlantic, and were able to avoid the faults of those vessels, the principal of which was their inability to carry sufficient coals. He

depreciated any further delay in building these vessels, because if they delayed now, the summer would be lost, and they had only two ships which were able to cope with several that either were, or were to be, armed by another power. On these grounds he asked the Committee to grant the sum which he had proposed.

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### TURRET SHIPS AS CRUISERS.

ON the subject of Turret Ships as cruisers, referred to in the following, we are quite of Admiral Warden's opinion.

Shortly before the close of last session of Parliament, the House of Commons, on the motion of Admiral Seymour, ordered to be printed certain correspondence which had passed between Mr. Corry and various officers of the Royal Navy with respect to the merits of the turret ship as a sea-going ship. Anticipating a debate on Mr. Samuda's promised motion to substitute two turret ships for two broadside ships in course of construction, without waiting to try the *Captain* and *Monarch* at sea, Mr. Corry solicited the opinions of these officers, with a view to the fuller elucidation of the subject. The gentlemen whose judgment was asked are seamen of considerable experience, and they have, for the most part, given intelligible reasons for the conclusions at which they have arrived. There does not appear to be any difference of opinion amongst them as to the practicability of constructing really efficient vessels of the turret class for coast defence, but upon the question of general seaworthiness the same unanimity does not exist. Taking these answers in the order in which they are printed, we find that Captain Chamberlain, then Captain of the Steam Reserve, at Portsmouth, in reply to the specific issue raised, is content to express his belief that the construction of a seaworthy turret ship is possible, for that such a vessel would, under ordinary circumstances of warfare, be much more formidable than one of similar tonnage on the broadside principle. He does not, of course, explain how the comforts of broadside ships are to be secured to their rivals, but he thinks that where there is a will there is a way, and that the difficulties may be overcome. Captain Vansittart is decidedly in favour of turrets, because he believes that guns will, in the long run, beat armour, and that the turret system will permit of heavier armaments. He, therefore, recommends the commencement of these vessels forthwith. On the other hand, the opinion of Captain Hood, of the gunnery ship *Excellent*, is that sea-going ironclads, armed properly on the broadside, are most decidedly to be preferred to turret ships; although, when the advantages of the turret system can be developed to their fullest extent, by means of low free-board, no masts, and nothing to interfere with the fire from the turrets in every direction, he considers turret ships are by far the most formidable class of vessels for coast defence. Captain George Wilkes objects to a

sea-going turret ship, "because, directly you make one, you lose the great advantage of the system, *i.e.*, an all-round fire," and he further objects to any ship being sent to sea with so few guns. He therefore approved of the policy of the Admiralty in not substituting vessels of this class for the broadside ships in the building programme, until the *Monarch* and *Captain* have been properly tried at sea. Captain King Hall shares the general opinion as to the utility of turret vessels for harbour defence; but he is of opinion that seaworthiness, in its comprehensive meaning, *i.e.*, for sea-cruising and long voyages, is impossible of attainment. Admiral Yelverton regrets that we have not more turret vessels than we have for coast defence, but he decidedly concurs with Captain Willis, Captain King Hall, and Captain Fitzgerald Foley, in the opinion that the *Captain* and *Monarch* should be tried before others of the same kind are commenced; and he adds that, "when the numerous advantages of the turret system are found to be compatible with many and varied requirements of a sea-going ship in all weathers, it would be time to depart from what I hear you now intend doing." Admiral Warden, on the other hand, has not "the least doubt in the world" that they may be constructed to meet the requirements of the cruisers, and that if they were recognized as a part of our system, he does not think that one-third of such ships would be out of proportion in the number of ironclads to be built in the future.

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#### RETURN OF A COMET.

DURING the last few weeks astronomers have been on the look-out for the return of one of those periodical comets which form, so to speak, a part of the solar family. The brilliant comets which come to us from out the depths of space, and after blazing in our skies for a greater or less interval pass away again into those same unfathomed abysses are, by comparison, mere occasional visitors. But there is a set of small comets which regularly, and at short intervals, return to our neighbourhood; and the one we are now dealing with belongs to this class. News has just come from a foreign observatory that the wanderer has been discovered. He is now traversing the inconspicuous constellation of the Hunting Dogs; but is as yet far too faint to be seen without a powerful telescope. Even the possessor of such a telescope would find it difficult to discover the comet were not its place accurately indicated; since in the neighbourhood of its path the mysterious nebulae are spread with unusual profusion. On this account the new-comer has to wait until Mr. Hind, who has long been recognised as the leading English authority in matters cometic, has marked out for the stranger the path which it shall follow across the skies.

The comet which has just returned is commonly called Winnecke's comet, having been discovered by that astronomer in 1858. It must not be confounded, however, with a comet of the same name which returned last year. The latter was one of much longer period, and quite different in character. The present one travels once in five and

a half years round the sun. It was described in 1858 as having at first "the appearance of an undefined nebula, the light most intense in the centre, but no true nucleus to be seen;" later a well marked nucleus made its appearance.

It must have returned in 1863, but was not then favourably placed for observation. Indeed, a little consideration will show that a comet travelling in a period of five and a half years can only be well seen at alternate returns. If at one visit it is well placed in the nocturnal sky, at the next the half year difference brings it on the diurnal sky, and of course the light of the sun blots out so faint an object even when the most powerful telescope is made use of. In this matter of its period Winnecke's comet is not singular. More than half of the comets of short period take about five years and a half in the performance of their circuit around the sun. The circumstance is well worthy of notice, and has a very interesting interpretation. It arises from the strange way in which the short-period comets have been twisted into our neighbourhood by the planet Jupiter. This monstrous fellow goes on his rounds like a gigantic policeman, and takes up comet after comet, which but for him would have passed far away from the neighbourhood of the sun. Sir John Herschel has related in lively terms how Jupiter illtreated Lexell's comet, first twisting it into the solar system, suffering it to go twice round the sun, and then unceremoniously twisting it out again, so that astronomers have never seen it since. That was precisely the sort of treatment which gives to a comet a five and a half year period or thereabouts. For a comet which has thus been forced into the solar system must necessarily have the most distant part of its path just outside the orbit of Jupiter; and that being so, the laws of planetary motion tell us its period must be about five and a half years. The worst of the matter is that with an orbit so placed a comet is always apt to be sent again upon its travels by Jupiter. If he happen to be near at hand, when the comet returns to the neighbourhood of his orbit, he will twist it out of its path as easily as the Great Eastern would tow a cockboat. In fact, the way in which Jupiter treats the cosmical clouds which we call comets merits for him the title of "cloud-compeller," which Homer gave to the Jupiter of Mount Olympus.

Altogether, we may congratulate ourselves on the safe return of the wanderer now visiting our skies. For it has happened, quite recently, that our astronomers have searched long and fruitlessly for one of the same family. We refer to the famous comet named after Biela; the failure in that case being peculiarly provoking, because the comet had presented the strange spectacle of a perfect division into two distinct parts, and astronomers were naturally anxious to know what might be the results of this operation, after a complete revolution of the twin system. The present comet, though not quite so remarkable an object, will doubtless attract a great deal of attention. Mr. Huggins will probably obtain interesting results by examining it spectroscopically, and we have no doubt that it will not pass away again into space without having taught us some valuable lessons respecting cometic habitudes.—*Daily News.*

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## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 215.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen Mls	[Remarks, etc. Bearings Magnetic.]
19. Cape Fourchu Fog Signal	Near the Lighthouse	Yarmouth S. Nova Scotia	...	...	...	See Note No. 19.
Hilton Head Island	Port Royal Entrance	... ..	...	...	...	Lights are discontinued.
20. Channel Buoys, English	N. Foreland to Beachy Head	... ..	...	...	...	See Note No. 20.

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

*Note 19.*—The Colonial Government of Canada has given Notice, that a Steam Fog Whistle has recently been placed near the lighthouse on Cape Fourchu, western entrance to Yarmouth sound.

During thick and foggy weather and snow storms, the whistle will be sounded continuously for *ten seconds* in each *minute*, the interval between each blast being 50 seconds.

The whistle, it is stated, will be heard—in calm weather, about 15 miles; with the wind, about 20 miles; in stormy weather, about 5 to 8 miles; against the wind, about 3 to 5 miles.

*Note 20.*—Alteration of buoys between the North Foreland and Beachy Head, that has been commenced in reference to Notice 89 of last year, see pages 621 and 622.

Names of Buoys.	Intended future character of Buoys.	Names of Buoys.	Intended future character of Buoys.
Long Nose	Black and white striped vertically.	Bunt Head	Black.
Elbow ...	Black and white striped vertically, with cage.	N.E. Goodwin	Black and white striped vertically (without beacon).
Broadstairs	Black and white chequered.	E. Goodwin	Black and white chequered with St. Andrew's cross.
Knoll ...	Black and white chequered (conical.)	S.E. Goodwin	No alteration.
Gull ...	Black and white chequered	S. Goodwin	Black and white chequered with cage.
North Bar	Black and white bands.	Dyke and Quern	No alteration.
Nth. Brake	Black and white striped vertically.	Red Fairway	Red and white striped vertically, and will be called North Fairway.
Mid. Brake	Black and white chequered.	Chequered Fairway	Red and white chequered.
Sth. Brake	Black and white bands, with triangle.	S. Fairway	Red and white striped vertically.
Deal Bank	Black and white chequered.	Varne ...	No alteration.
Goodwin Knoll	Black and white bands.	Newcombe	Black and white chequered.
N.W. Goodwin	Black.	Royal	Black and white striped vertically, with cage.
N.W. Bunt	Black (can).	Sovereign	

By the following extract from the San Francisco papers, a dangerous shoal has been discovered off that port. We shall soon hear more of it, for our American friends of that place are not likely to allow these things to remain as doubtful.

*A Dangerous Shoal Discovered.*—Captain W. H. Harrison, of the bark *Jenny Berteaux*, which arrived September 24th from Japan, reports that he was with his vessel for seven days in fog and smoke near the coast, endeavouring to make land, and unable to get an observation. On September 22nd heavy breakers were discovered right ahead. All hands being at their station, he wore ship immediately and escaped the danger. After wearing ship he went aloft and was surprised to find that no rocks were in sight, as he had supposed that the vessel had been near running upon the outer Farallones. The breakers extended for half a mile and evidently marked the sight of a very dangerous shoal. On making port, and working course and distance back, he found that the breakers he had seen and so narrowly escaped going among, were at a shoal marked on the chart as “doubtful” position.

The locality of the shoal is as follows: Bearing west south-west, true, from the outer Farallones, seventy-two miles. Had the ship struck, she must have been lost, and as the shoal lies directly in the route of vessels from Japan bound for San Francisco, it is not at all improbable that several vessels which have been lost heretofore and never heard from, went to pieces there and all on board perished. The wind was blowing strong from the north-west, and a heavy sea running at the time.

*Position of Necker Island.*—The same paper says:—On sighting Necker Island, which we passed at night, I found the position given on the chart to be twenty miles from the truth—the latitude as given by Norie is  $23^{\circ} 34'$ , but is laid down on his charts in  $23^{\circ} 54'$ ; his longitude, as laid down alike both in his Epitome and on his chart is erroneous—7 miles. Being a fine night, I determined, by trustworthy sidereal observations, the following position: lat.  $23^{\circ} 35' N.$ , and longitude  $164^{\circ} 26' W.$ : this, I believe, nearly corresponds with the positions given by Capt. Brooks, of the *Gambia*. I suspected on my last trip something was wrong, because I had the ship's place as bearing N., fourteen miles from the island, but could not see it—so this time I steered more southward, and found the above result.

*Shoal in the Chacao Narrows.*—We find the following in *Mitchell's Maritime Register*; and shall no doubt hear more of it from the *Topaze* hereafter:—H.M.S. *Topaze*, at Valparaiso, from southern ports, in passing through the Chacao Narrows, between the Island of Chiloe and the Main, on the 9th February, touched on a danger hitherto unknown, with probably only three fathoms on it at low water. The following bearings were taken:—Carelmapu Point, N.,  $10^{\circ} E.$ ; Chocoy Head, N.,  $75^{\circ} W.$ ; tide, ebb; course, W. by S.  $\frac{1}{4}$  S. The ship passed over without losing way. She was at the time drawing 22 feet 6 inches water, and the leadsman in the chains had ten fathoms out, apparently up and down, without finding bottom—13.

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#### NOTES OF NOVELTIES.

ON the subjects of the Flying Squadron, the Channel Squadron, and the Reserve, it appears that the *Liverpool* is being got ready as fast as



possible for Rear-Admiral Hornby's flag, and will probably be commissioned in the early part of next month by Captain J. O. Hopkins. This vessel, together with the *Liffey*, now at Devonport; the *Phæbe*, ordered home from the West Indies; the *Endymion*, ordered to Spithead from Cadiz; the *Bristol*, on her way home from Bermuda; the *Clio*, 22; and the *Scylla*, 17, to be commissioned at Sheerness, will form the Flying Squadron. The *Defence*, from the Channel Squadron, relieves the *Doris*, at Jamaica, and sends her home to be paid off.—The Channel Fleet returns to England the first week in May. On the 14th May the following vessels, manned from the Coastguard and Naval Reserve, are to leave Portland on a cruise for ten days or a fortnight:—Iron-clads: *Agincourt*, *Black Prince*, *Hector*, and *Valiant*. Wooden screw liners: *Duncan*, *Donegal*, *Trafalgar*, *Royal George*, and the frigate *Mersey*.

Rear-Admiral Geoffrey T. P. Hornby will command the Flying Squadron, which will consist of the *Liverpool* (flag-ship), to be commissioned by Captain J. O. Hopkins; *Liffey*, Captain J. O. Johnson; *Phæbe*, Captain J. Bythesea, V.C.; *Endymion*, Captain C. Wake (frigates); *Clio*, 22, *Scylla*, 17, to be commissioned. They will probably leave England about the end of May.

SOME unpleasant intelligence comes to us concerning the treatment of the natives of some of the Polynesian Islands that will be a subject for future investigation of no pleasant kind.

*The Labour Question in Polynesia*.—Some terrible revelations are coming out respecting the atrocities committed by captains in the act of "recruiting" these poor islanders in the southern seas, under the British flag and the license of the Queensland Government. A case has come to the knowledge of the authorities of Sydney which compelled them to put the law in force against the offenders. The captain of the *Young Australia* and one of the crew stand committed to take their trial for the murder of three natives of one of the New Hebrides group of islands. The supercargo, who is also implicated in the affair, has been caught at Melbourne, and is coming up. Briefly, the particulars are as follows:—The vessel mentioned, chartered by a Sydney firm, sailed in September last or thereabouts with a cargo for Fiji. The cargo being discharged, a raid was proposed among the New Hebrides islands for "niggers," as the Polynesians are called, to work on the newly-established plantations at Fiji. The vessel was five weeks gone, and when it returned landed 230 natives, including six women, something like £1,200 having been cleared by the transaction. The vessel returned to Sydney. While here, intelligence was received from Fiji, which was made known to the Government. It appears that during that voyage off the island of Palma, three natives were forced on board, who, breaking open the hold in which they were confined, fought for their liberty, and were shot down and tumbled overboard by command of the supercargo, and under the silent sanction of the captain. The vessel was just on the point of starting again from Sydney on another expedition when the captain was arrested.

THE Island of St. Thomas, which certainly little concerns us, seems yet to be an unsettled subject, as well as that of Alaska, according to the *Daily News*, which says:—

The St. Thomas affair is a sad one. Mr. Seward proposed the purchase to the Danish Minister in 1865, with Mr. Lincoln's approval, and continued during the ensuing two years to follow the matter up with the greatest pertinacity, until he had fairly badgered the Danish Government into agreeing to sell the island. When all was ready, the Danes insisted that the islanders should be allowed to vote on their fate, a condition which Mr. Seward for a long time steadily resisted, but at last accepted, and sent a clergyman from Auburn to St. Thomas to close up the negotiations, and rouse the enthusiasm of the inhabitants, and the vote was taken with music, banners, processions, and the other usual accompaniments of American electioneering. When the treaty was signed it was sent in due course to the Senate for ratification in the winter of 1867-8, but there it has lain ever since. Nothing has been done about it. Of course this was very mortifying for Mr. Seward, but it was worse than mortifying for the Danish Government, as the King had formally taken leave of the inhabitants of the islands, and had proclaimed the cession to the civilized world as an accomplished fact. Nevertheless the island is still on his hands, but the people are in a kind of limbo, in which they owe allegiance to no Government and no Government owes them protection. The Danes, too, want the money (about a million and a half sterling) very badly, inasmuch as it is nearly a whole year's revenue, and are working might and main through the press to get the treaty ratified.

The Alaska purchase got through the Senate with the greatest difficulty, Mr. Sumner having been reduced to writing a pamphlet on it, while the money for it was only voted in the House under the pressure of a powerful and well-organised "lobby," headed, as I have more than once mentioned, by Mr. Robert J. Walker, who was paid for his services by Baron Stoechl, the Russian Minister. Alaska, in fact, became a standing joke with the radical press, who painted it as a region of icebergs, and seals; and an earthquake happening in St. Thomas soon after the negotiations for the purchase had reached completion, the fun grew all the more furious. In reality, however, whatever may be said about Alaska, the attempt to buy St. Thomas was due simply to the desire to acquire a good West Indian naval station, the want of which was severely felt during the war, and the idea is believed to have come originally from Mr. Lincoln.

ANOTHER great specimen of hydraulic engineering is to be done it appears in Europe.

The famous song which celebrates the potatoes of Mynheer Van Dunk will have shortly to be altered. Our singers have hitherto proclaimed that a "Dutchman's draught should be deep as the rolling Zuyder Zee." How shall this be sung or said when there is no Zuyder Zee; when the rich clay which underlies its rolling waves shall be brought under the dominion of the harrow and the plough, and rolling corn-fields be seen where now the turbid waves of the great inland sea

are tossing? Yet this is what is promised. The Dutch authorities have examined the question, and they have decided not only that the Zuyder Zee can be dried up, but that the work can probably be accomplished in nine or ten years, certainly in fourteen. Herr Beijerinck, the inspector, has indeed reckoned that with steam-power he could drain the Zuyder Zee dry in twenty-one months. The land which underlies the waters of the Zee has been examined, no less than 134 borings having been made. Of these, 94 borings gave clay, 50 being a rich clay stratum of nearly a yard and three-quarters in depth. There was only one sample of sour ground, whereas beneath the Lake of Haarlem there had been a large extent of inferior soil. Yet the draining of the Haarlem Meer was no unprofitable work, and it is estimated that even if the soil under the Zuyder Zee be on the average no better than that of the recovered land of Haarlem, the profit of the work will exceed the cost by fully ten millions of pounds sterling. The part of the Zee to be drained contains in round numbers 390,000 acres.

Certainly the brave Hollanders have already shown mettle enough in their contests with the ocean to leave little doubt as to their capacity for making a winning battle of this new venture. Of all nations, the Dutch are held to have shown the completest mastery over the art of winning estates from the strong grasp of the ocean. In former times, when as yet they had not acquired full skill in the arts of dyking and draining, they were oftener defeated than victorious, and in place of being able to reclaim the sea-lands, they failed in preventing the sea from making continual encroachments. The result of the contest, said Lyell, speaking of the former struggles of the Dutch, was in favour of the ocean; "the area of the whole territory having become continually more and more circumscribed, natural and artificial barriers having given way one after another, and many hundred thousand beings having perished in the waves." Even now it is only over inland seas that the Dutch can safely seek for mastery. Outside the long series of islands stretching from the Texel to the mouths of the Weser and Elbe, the ocean is continually at its destructive work. Since the time of Pliny, these islands have lost nearly a third of their number, for he counted twenty-three, and there are now but sixteen. Our own Heligoland, which belongs to the sixteen, has been gradually consumed by the waves. Since the year 1770 a current, navigable for large ships, has been cut clean through it, separating the portion now called Sandy Island.

All that the Dutch can hope to do is to prevent the ocean from forming inland seas or lakes; or to reclaim lakes or inland seas already formed. It has ever been held by M. Elie de Beaumont that in the long run the whole of Holland must vanish within the devouring maw of the ocean, since he believes that a process much more serious than the mere washing or beating of the sea-waves is in progress, and can have but one result. The whole of this part of the continent of Europe, says he, in his "*Géologie Pratique*," is probably sinking, slowly but surely; and, indeed, little doubt can exist that within recent times such a process has taken place, though we have no satisfactory evidence that it is still in progress. The peat mosses of fresh-

water origin, which are now lying under the Zuyder Zee and Lake Flevo, serve to show that of old this part of Europe was much higher. In the days of Tacitus the present site of the Zuyder Zee was occupied by several lakes, and it is only by the subsidence of the whole region that we can account for the much wider range now covered by this celebrated sea.

So we are to have two international boat races. Our New York friends seem determined to take the shine out of the Oxford boat and her crew, and to give both that and the losing boat of Cambridge a chance of gaining fresh laurels, by plucking them from the American boats if they can. We shall see. Both matches are to come off in August on the same course, and we add with pleasure that such contentions as these are most gratifying to us on this side of the water, and we will answer for our American friends finding a hearty welcome. We find both of these paragraphs in the *Daily News*.

Not only the lovers of manly sports but the whole British public will be glad to learn that an Anglo-American boat race has been arranged, and that it will take place in August next, upon the Thames at Putney. The challenge has come from the other side of the ocean, and has been cordially accepted on this side. We shall all appreciate and admire the courage of our American brethren. They have sent their challenge to the victorious Oxford University Club, and are coming across the ocean to meet the Oxonians on the very scene of their successive triumphs. It is easy to predict for them an enthusiastic reception. The interest of the British public in such competitions has given the Oxford and Cambridge race almost national importance; the interest of the two nations in that of August next will give it international importance. The Americans will not find that in rowing on an English river they necessarily have the feeling of the crowd against them. They will not be reminded that they are among strangers. The multitude will feel that they have deserved success, even if they fail to attain it; and if they win, no Englishman will grudge them the laurels they have come so far to pluck. We trust that the race now arranged will be only the first of a long series. Such international competitions are in every way desirable. A friendly rivalry in our chosen pastimes is one which will develop friendly feelings on both sides. We have both learned something from competition on the ocean—we may learn something now from competition on the river.

*Another International Boat Race.*—A special meeting of the Cambridge University Boat Club was held on Monday evening, Mr. J. H. D. Goldie, President of the Cambridge University Boat Club, in the chair, and Mr. F. J. Young, Secretary of the Cambridge University Boat Club, in the vice-chair. The meeting was called for the purpose of considering a challenge from Harvard College, United States, to row a race from Putney to Mortlake in August next, within a few days of the race with Oxford University. After the matter had been fully discussed, it was resolved to accept the challenge conditionally, and the matter was left in the hands of the president to be carried out

To SUIT the word to the action is as common as suiting the action to the word. But the latter has seldom been better done than in the gallant work of a naval officer recited in the following:—

Lord Kerr, son of the Marquis of Lothian, who commands her Majesty's ship *Hercules*, did a very heroic action the other day, when he jumped overboard after a sailor who had fallen from the rigging, and had struck his head against a boom. The man was stunned, and would have perished in the water. Lord Kerr gave the order customary on board a ship-of-war when the cry "Man overboard!" was raised, but for the moment no one stirred, then in a twinkling he stripped off coat and vest and plunged into the river, succeeding in holding the man up until assistance came. The fleet will return to England on the 20th inst. The *Defence*, however, sails for Jamaica, and the *Pallas* for Cadiz.

ARE we really after all to have a high road to Paris? There is no knowing; but something of the sort seems likely by the following paragraph. All we need say now is that it is much wanted.

The *Moniteur* announces that on Sunday last the Emperor Napoleon gave a private audience to Lord Richard Grosvenor as the promoter of a proposed submarine tunnel between Calais and Dover. The *Moniteur* does not pretend to state what passed at this interview, but it believes that his Majesty considers the tunnel scheme to be beset by difficulties; while, on the other hand, he thinks highly of the bridge over the Channel projected by M. Boutet. He even suggested, on seeing the model of the bridge, that the number of piles on which it is to be supported should be doubled; and this can be done, it is understood, without interfering with the navigation.

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#### TO CORRESPONDENTS.

NEREUS has our best thanks: we have seen all about Bourne's Whirl-wheel Star-pointer. But there is too much about it: besides correcting for deviation (now so readily found) is so easy, that such matters are superfluous.

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CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in April, 1869.—Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

263 DE m 20·3. Labrador, Cape Charles to Sandwich Bay, various authorities corrected to 1867. 2s. 6d.

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EDWARD DUNSTERVILLE, *Commander, R.N.*  
*Hydrographic Office, Admiralty, 20th April, 1869.*

THE  
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AND  
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JUNE, 1869.

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GLEAMS OF A SAILOR'S LIFE.

No. 1.—*Collingwood Brenton. Santa Cruz and its detractors.*

WE were under way from Spithead by daylight, which same expression, "under way," is a mere elision in our vernacular, by no means understood. It is much oftener written "under weigh" or "we weighed," both of which terms are outrages on our common sense. "Under weigh" is absolute nonsense, there is no "weighing" about it. The anchor is taken away from or out of the ground, and that is an operation implied, or understood, when a ship is leaving her anchorage. She then literally gets *under* sail on her *way* to her destination, or the place to which she is bound. So that to say that the ship gets "under way" is a true and correct elision, the words "sail on her" being omitted as superfluous, in the same manner as our common question "What's o'clock?" which when it is fairly expressed is resolved into "*What is the hour of the clock.*" In this common expression as well as in the former are italicised the only words and letters used, the rest being superfluous and therefore omitted. But to leave this digression number one, the wind was foul and we had to beat down the Channel with a variety of other craft.

The Channel, or as the French have it *La Manche* (the sleeve, from its resemblance to one, the cuff or narrow end being Dover Strait, or as they have it *Pass de Calais* (the Calais Pass), and the wide end its western entrance), was of a beautiful bright green colour. But it soon came on to blow fresh, and then it assumed that discoloured appearance which so often belongs to that home portion of the sea, over which *Britannia* is wont to rule.

We touched at Falmouth, only touched but did not touch ground, and the next morning with a fresh northerly wind off we started on

our cruise to the south, and soon found ourselves on the dark blue sea. Why is it called blue for here it was green. But the fact was we had not then reached blue water. Perhaps it gains this colour from the depth when that depth gets over two or three thousand fathoms, that is two or three nautical miles; for at sea no other than nautical miles are used. No doubt each country has its own mile as we have, but ours is made out of *barley corns*!—a good number of them too. But three barley corns used to make one inch, so many inches a foot, so many feet a rod, so many rods and eight furlongs says the table make one mile; English be it added. Ah, well, they served John Bull very well in former days, and after all when we do get the real standard of measure it must come to the same thing, a foot may belong to the measure of any country you please, and our own feet although composed of inches or barley corns are as good as any other. Has the length of the pendulum which vibrates seconds settled the business? No, for that has different lengths in different latitudes. But we are becoming metaphysical and have got into a nasty cross sea which we shall be glad to get out of.

The next day a fine weather strong N.W. breeze had banished every cloud from our sky, and here in the Bay of Biscay oh! we were rattling along to our heart's content in blue water, which no doubt reflected that same sky, and this running free will save wear and tear of foul winds those abominations of sailors. They tend to make us economical nevertheless, and speaking of economy reminds of a pattern of economy in that highly esteemed Admiral of Nelson's. The story is so well linked with another, that like twin sisters they should not be separated, here they are.

"Collingwood's dry, caustic mind," says an admirable Naval author, "lives before me in the recollection of his calling across the deck to him his fat, stupid captain—long time gathered to his fathers—when he had seen him commit some monstrous blunder. After the usual formality, which the old chief never omitted, he said, 'Captain —, I have been thinking whilst I looked at you, how strange it is that a man should *grow* so big and know so little. That's all sir; that's all.' Hats off and low bows followed. But this was tolerably keen. Again, the economy of the Admiral of the king's stores was conscientious to scrupulosity, aye, to a passion. On the 14th February, when he was getting belaboured in the *Excellent* by two Spanish line of battle ships, he beckoned to his master to come close to him, and pointing through the smoke to the fore-topsail said, 'It is too bad, Mr. —, that we never shifted that beautiful new sail before we came into action, and now they won't leave it worth a pin. Dear, dear, what a pity!' Here indeed was economy with a vengeance. To deplore the spoiling of a new fore-topsail in the heat of action. But those old buffers of the Nelson school thought as little of a shower of shot as they did of a shower of rain."

Reader, "did you ever make the Peak of Tenerife?" "No," you will reply, if landsman you be, and perhaps will add, "what is it made of,—tell me and I'll try." Good, good, the question does apply

even in the *Nautical* to landmen as well as seamen. Then for your own edification be it known to you that a seaman when he says that he *makes* any land is using merely a *façon de parler*, a technical mode of expression, which simply means nothing more than his first seeing it after a voyage. It is then a landfall and may be made well or ill. If well or a good landfall it is when the ship's place by reckoning and that deduced from the land agree together, and the converse of course is when those two positions differ, as they are wont to do from various causes well known to seamen.

However, making the Peak of Tenerife is an interesting matter. In a clear blue sky we have made it in the form of the printed letter V reversed as it stood peering above the horizon at the distance of above a hundred miles from us. It was in the afternoon of a fine clear day, and when the sun had got well to the westward there stood the Peak to the S.E. gradually looking higher and important as we approached it. But it is mostly made among the clouds or rather above their general level. So that ships will frequently be within visible distance of the Peak without seeing it on account of the masses of clouds collected about it.

Another anecdote related by the captain, who abounded with these mourceau, Sir Jahliel Brenton used to tell an amusing story of his adventures and among them was this, as an instance of the naivete with which the governor of Cerigo announced to his chief at Corfu, that wishing to get rid of some Mainotes says, "Enfin je me suis avisé de leur fair empoisonner les eaux, et par ce moyen qu'ilques de ies miserables out peri, et les autres senfecirent," and the charming set off against the rascality of this French Palmer, in the conduct of Louis Dubois, negociant *de l'Orient*, all honour to you Louis Dubois; "may your shadow never be less." But, poor fellow, I suspect you have neither shadow nor substance by this time. Yet may the effects of your good deeds light on the heads of your children.

A worthy deed of this same Louis Dubois is well portrayed. Brenton was starting for Verdun after the capture of *La Minerve*, and had saved nothing but what he stood in. In fact on halting on the first night of his journey he was in distress. In the same cabaret in which he was crowded with his officers was a French captain on his march with a detachment of soldiers who occupied the place of honour by the fireside. In a short time his corporal came to him and taking out of a knapsack a suspicious looking gallipot (very like a pomatum pot), he scooped out of it a spoonful of something very like lard, which he placed in a tin pot with water, a sliced onion, some morsels of bread with pepper and salt. Having boiled the mass he pours it into a basin, and presented it respectfully with a slice of toast to Monsieur le Capitaine, at the same time giving him his slippers, taking away his wet boots and wheeling round the old oak chair into a comfortable nook.

Yet Brenton himself was unable to command even this modest refreshment, but he enquired of the landlord, if he could put him in the way of getting cashed a bill on London. So the host recommended



him to apply to Monsieur Louis Dubois. But this gentleman preferred a "material guarantee" to the bit of paper. So Brenton offered him his gold watch which Monsieur was informed cost him thirty guineas a few weeks before. But Monsieur shook his head at this production of Mr. Barwise observing, "Mais Monsieur c'est un peu trop fort," and offered him fifteen guineas, till the bill was honoured. Of course Brenton took the sum, gave him the bill of £30 and ordered supper. Something more substantial than the aforesaid refection of Monsieur le Capitaine.

So while supper was under discussion there was a knock at the door, and garçon announced Monsieur Dubois. In came the gentleman bowing, etc., and striking his breast, said, "Monsieur le Capitaine, ma conscience me pique." "Comment done," replied Brenton. "I am ashamed," said the Frenchman, "to chaffer with 'un brave officer,' take your full price, the full amount of your bill (£30)." Well, there was of course some complimentary remarks, and supper went forward. But presently before it was over, Monsieur Dubois was again announced, and coming forward bowing and striking his breast again, said, "Monsieur, encore Monsieur, ma conscience me pique." Confound your conscience thought Brenton, I suppose he repents of his confidence. But no, he soon explained that he was ashamed to take a pledge from "un brave officer," adding, "take back your watch your bill is quite sufficient."

Perhaps he had read the honesty of Brenton's character in his face, like a confiding banker at Frankfort (I forget his name), who told my cousin John Hamilton, that he did not want his letter of credit, he might have money without that. And on my friend saying to him, "but you don't know me, is it wise to trust a stranger." On which the dealer in thalers answered, "Why, sir, it is so much our interest to scrutinize our customers, and watch the indications of character, that we acquire at length a sort of instinct in thought-reading, on which I soon find that I can boldly rely. But certainly M. Louis Dubois had a large share of generous feelings.

But here we are reader off Santa Cruz of Tenerife. Were you ever there? Of course every sailor knows Santa Cruz. But there is something to be rectified in the book way: so wait a bit and come on shore, and we will have a look at this much maligned place.

And instead of that miserable squalid place that some say it is, I will shew you that it is a picturesque interesting little town. The houses are shining in the sun with their gay colours—blue, white, yellow, and red—the tall spires of the churches, the different consular flags, the fringe of white batteries along the water's side, the quintas with their gardens and vineyards, the palms and cocoa trees scattered here and there, and the everlasting peak towering over all like a giant sentinel, all contribute to form a striking picture as seen from the anchorage. Besides have we not historical recollections of Blake and Nelson here?

Well, we will go on shore. The pratique boat has come off while we were dining, and as we are admitted pratique, as they say, we

landed at the Mole. We found the said Mole advancing according to Spanish fashion, *i. e.*, about one yard a year, and in the course of the next century the vessels at the anchorage in it may realize its promised shelter. However at the Mole Head we found the alameda or public walk overlooking the sea, rather a poor affair for the capital of the Canaries, but it has some good statues and trees, besides some huge sun flowers as high nearly as the trees themselves, and being watered and swept looks well.

Richardson's Hotel caught our attention, and indeed he had come off to us in the pratique boat and pointed out its locality, so that it was not to us difficult to find. He undertook all our business, and gave us some à grace and Naples biscuits and something to drink, the juice of the wild grape sweetened with sugar and cobbled with ice, which altogether produced a refreshing beverage. Our host had as much to say as any one of his class any where, and among other curiosities informed us that his house began life as the inquisition! Was this to create in us an interest in his dwelling, and that such a fact of antecedents was a story of the "Straits." But this is a phrase which requires some explanation. So kind reader here it is:—

An old sailor friend of mine, who was master of a ship I commanded and is now a post-captain, had certain axioms which he had established ("for long experience made him sage"), and he relied on them when so established, with something of the faith he had in reference to the right-angled triangle, where the square of the side opposite the right angle is equal to the squares of the other two sides. Among his varieties was this, that any man who spoke of having sailed through the Straits of Parlamban-jeng was never to be believed on any subject whatever. And therefore as Mr. Richardson's house with its wide staircase, open corridors filled with flowers, large windows and balconies, has as little of the look of the dungeon and rack as can well be imagined, the historian of the dwelling must have sailed through the Straits.

But here is some description of the house. A large building with its share of windows, surrounding a good sized courtyard, in the middle of which was a fountain and a good supply of flowers, such an arrangement as is admirably adapted to hot climates. There can be no doubt it was one of the best fashions introduced by the Moors into Spain and transmitted by Spain to her colonies; well suited for those Tertullias of the gentle *Senoritas* but certainly not for the monks of an order where severity rules. We much admired the plants, and afterwards found them even ornamenting the hills, and are named the *Eupherbia*, which grow to an enormous size, and when old and antiquated are used for fuel.

That mysterious failure of the vine which dried up the source of wealth to Madeira we found extended to Santa Cruz. But here the colonists at once turned their attention to the cultivation of the cactus plant for the sake of the cochineal insect which thrives on it. And wise they were for they find it an excellent substitute for the grape. They raise now about a million pounds of cochineal yearly, which

being worth a dollar a pound gives them a sum of £250,000, very much more than 20,000 pipes of wine produced, for this was about £10 a pipe bringing about £200,000 and that too uncertain.

We did not patronize the English 'bus although it runs daily, and most likely to Orotava on the north side of the island, but it is said the villages are pretty, and the sea very grand. But it appears that the free trade which has been established has produced a falling off in the customs, *e.g.*, as this must be made up, the inhabitants complain of the land tax which has been imposed on them for that purpose.

By the way a Prussian man-of-war has just anchored along side of us said to be a cadet ship, one for instruction! But alas, the instructors themselves need instruction. They shortened sail after their own fashion, one after another, not all at once as we do; and then in firing their salute, when a gun hung fire a second was discharged, but the first which had hung fire thought better of it and went off pretty close to its substitute, so that a clumsy effect was produced and this happening more than once spoiled the effect. Still they are beginners, and although they do pretty well, they will do better with their grenadiers and landwehrs than with sailing on the ocean. The craft, however, looked well and if those on board of her had known that they were under the critical eye of a British Admiral, one of the best sailors in the British Navy, they would have taken better care of their priming irons.

Our Consul we found a pleasant and agreeable companion, obliging and civil. He introduced us to his house, where we found some beautiful copies of Murillo by a Seville artist. But why in the world don't such artists go to Seville and Madrid, besides other Spanish towns where there are some beautiful Murillos and Velasquez little known, and of which no engravings are to be found, instead of perpetually hammering at Rubens and Vandyke, or Titian and Raphael, all of whose pictures have been copied and engraved above a hundred times.

The town itself of Santa Cruz we found clean and in good repair, but not free from the natural odour, the *idiosyncratic* smell of a compound of oil, onions, charcoal, cigars, garlic, and orange peel, which takes one back to the days of yore. But the sayings and doings of those days are revived in all their freshness far more by these odours than by any stretch of intellect. Perhaps the senses have more influence than the spirit on our composition. The market-place is handsome, and the cathedral very fine, with some tolerable *paintings* and magnificent carvings, etc. The attention of the stranger is attracted of course by a marble monument to commemorate the conversion of the Aborigines to Christianity. The early invaders having effected this, proceeded as they have done elsewhere to exterminate their proselytes by cruelty added to hard labour. There is no doubt that, unhappily, they succeeded too well, as not a single soul of the gentle race whose blood was an appeal to Heaven remains on these islands.

The batteries of Santa Cruz are in a far better state than the generality of Spanish fortifications, either at home or in her colonies.

A sentinel in charge was smoking his cigar as he carried his musquet of portentous length. He was much better dressed than might have been expected, although his trousers were breadbags, and his shoes much resembled canoes, not bad either for Tenerife. The cathedral contains, in a glass case most carefully preserved, the flag of the *Fox* cutter which was sunk in Lord Nelson's attack on Tenerife when he lost his arm. Well this is right enough, such spoils are not common, why not make the most of them, and if they have the flag which has "braved the battle and the breeze;" *como no*, as the Limanians say, why should it not adorn their churches. Let them cherish it as they should do. "The smallest donations are thankfully received" even in this small way.

In my walk I looked in at the Harbour-master in hope of finding some of Tofino's charts. But alas it was the wrong time of day, every one was taking his siesta, all lying fast asleep! It was quite true the sun was lavishing his burning rays like a heated furnace on the quiet streets, and all nature had yielded to the drowsy influence of heat and—dinner! The only wide awake specimens of animated nature were the lively lizards active enough racing over the hot walls. But even these naturalists tell us belong to the genus salamander! The bullocks too were lying down under their heavy loads, and their drivers also in the shade; but the browsing camels kept their bells tinkling, for they kept no siesta. Yet, "no mother looked down from her lattice high," for mother and daughter, husband and lover, sister and brother, maid-servant and man-servant, were all on their beam ends fast asleep. It was hopeless to look for charts, so as I wanted some water-colours for my sketches I made up my mind to attack a store.

Here I was something more fortunate, for behind a screen of Indian matting I saw a yellow looking official not asleep but evidently drowsy, and almost enveloped in a cloud of tobacco smoke, and then I was rewarded with some little flat colour cakes, like pulmonic wafers, as substitutes for "Ackerman's superfine." Well they would answer my purpose, so with a contented mind I strolled down to the beach leaving the votaries of sleep and tobacco to their devotions while I soon had the benefit of the sea breeze on the beach.

Soon afterwards I found myself in the hotel, ascending the old creaking oak staircase, and in the gallery found a creole damsel, tired no doubt with her day's labours, reposing on a log of wood. Perhaps we had spoiled her siesta, for she started up to usher us into the saloon.

She was pretty but somewhat scantily clothed; a loose covering tied round the waist but short enough to display bare legs of unimpeachable symmetry. A red handkerchief was round her head from which descended hair blacker than jet, and her teeth were whiter than ivory itself. "Dolores mia," I said taking a shot at her name, and another at my Castilian; "Dolores mia, gusto biber à græe," which she accordingly went off to obtain for me, and in her absence we took a glance at the apartment.

It was a large room extending along the whole front of the house with a high oak roof and an uneven oak floor, with four or five high

windows facing the hot street, and the hot hazy bay, and the hot hazy mountains. The walls, against which were sofas and rush woven chairs, were of green coloured distemper and ornamented with looking glasses in black frames, and veined wavy plates, and a succession of prints in black frames, of "The *Warren Hastings* at Gravesend," "The Death of Captain Falkner in the *Blanche*," "The Trial of Louis XVI.," "George the Third and his Family," "General Washington" in his cocked hat; and "The Landing of Julius Cæsar." While we were inspecting these works of art, a pleasing gentlemanlike young officer came from his boudoir at the end of the room and entered into conversation. We learnt from him that he had employed six months leave of absence in his travels over these beautiful islands, on which he gave us some information, and invited us to his apartment.

We found it but poorly furnished, and it was evident that for a bath he must have had recourse to the beach below the Mole or off the rocks. However he seemed quite satisfied with his accommodation, and indeed pleased with everything. By his account there was a very good *table d'hôte* at five o'clock which would boast tomato-soup, fish, guinea-fowl, etc., with excellent wine daily, at five francs per head, and as at this "*funcion*" was the Consul, in the absence of his family, some of the merchants, the *elite* of the island, and our friend himself generally assisted, it was a pleasant gathering. But at eight o'clock when we were there it was as drowsy and solitary a concern as could well be.

Our last evening at Santa Cruz was very pleasant. We had much enjoyed the Alameda, and returned on board at nine to enjoy the cool night and the breeze off the land. The lights of the fishing boats, and the town, and those of a homeward bound steamer which called in for the mails, and kept prowling about the bay as she waited for them, lent some liveliness to the scene.

But why does John Purdy, hydrographer, scandalize poor Santa Cruz with the assistance of Captains Vancouver, Owen, and Fitz Roy? It might be said that his directions for the Northern Atlantic could do but little harm if ever so libellous since they are read by a very few. But is not every one in England in some way connected with the sea? If he be no sailor, he has some friends and connections who tell him sea stories; and if I wished to promulgate any subject, to become touter for instance to Holloway, etc., I would as soon adopt the pages of a Naval Directory as any other. The above Captains inveigh against the want of interest in Santa Cruz, the desolate and rugged character of its shores, the absence of trees, and want of cultivation, and various offences against the beautiful that are committed by Santa Cruz. But we found it the prettiest if not the cleanest of Spanish towns; with its country houses, its trees and vineyards scattered here and there, imparting altogether a cheerful pleasing appearance. Let that man be pitted who can travel from "Dan to Beersheba" and say it is all barren, though I need not quarrel with him for that. But a certain Russian Admiral does much worse than offend against the picturesque. I am afraid he does so against truth, for I have seen here how much he has

wounded Canary nationality. Has he not said, "The characteristics of Santa Cruz are the general misery and profligacy of the people; the gross depravity of the female sex, and the swarm of fat monks who stroll about the streets as soon as it is dark." Here is a pretty character for Santa Cruz. Let us look at it fore and aft.

First, as to "the misery and profligacy of the people." In all my wanderings I have never met with so quiet, and apparently so contented and thriving a population; there are very few beggars; there are no outrages; nor is there any appearance of squalor or want; in fact, all are busy in following their own lazy and persevering fashion. The readiness with which they swarm off to the Havana, when the parent hive becomes too full, is also praiseworthy.

The almost romantic honesty and generosity of the peasants in the interior of Tenerife, which those who know them best report of them, and the total absence of rick burning, etc., or any attacks on bakers' shops, or corn stores, during the famine of 1840 and 1844, are all unlike the police reports, or the calendar at a Spring assizes of countries further north.

A well informed Englishman who had resided many years at Lanzaretto, and travelled much through all the group, says, that you might carry a purse of money and an open portmanteau through the huts of the country people, who would afford shelter and hospitality and rob nothing.

Tom Moore's flourish about "rich and rare were the gems she wore," is just the boast of a glorificating Irishman. Such period of continence and probity had no actual existence. But here, Santa Cruz of Tenerife, is a living witness in the box who testifies on his own knowledge of Canary virtue.

Then as to the Russian Admiral's charge against the female natives of Tenerife, they may perhaps be a little behind in Geography, or even Astronomy, and with modern languages and painting on velvet, and they may perhaps be somewhat confused as to whether London be England or England be London, or indeed whether the apocryphal country be north or south of Santa Cruz;

"And that their time is spent in doing nothing,  
Or bathing, nursing, making love or clothing."

But as to their chastity, I believe them to be far less libertine—at least so I was informed by some persons who were "men of wit and pleasure about town," who were presumed to be acquainted with the morals of the Canaries—far less libertine they are than the natives of other countries.

And lastly, as to "the swarm of fat monks." Why in the name of all that is fresh and sweet, why should not they exchange their frowsy cells of an evening for the delicious sea breeze? They have not the open courts with a fountain of water and banana trees, among which they can sit and enjoy the "dolce far niente" habit of the climate. Nor have they the tepid Mole in which they might disport themselves with their amphibious congregations. They can but lounge lazily

through the streets and touch their shovel hats when recognized with a bow, and then take snuff. Cigars I do not think are clerical.

But it is clear the Russian Admiral connects their perambulations with female depravity; or else wherefore "the pity and disgust." If these obese ecclesiastics were ever so profligate, they would have too many opportunities to forget their vows without making love, like so many elderly Romeos, under the light of the silver moon. The celibacy of the Roman Catholic clergy, whilst it estranges them from natural sympathies and devotes them to their church (which to them stands for father and mother, wife, and sister and brother) is certainly not, as far as we could learn, any gross immorality, and which if it existed would soon have become known. Nor do they ride rough shod over the mild institutions of their island, nor appear to feel that the church is God, and like Him it may "strike through kings in the day of its wrath," and consequently rule supreme at Tenerife.

The few priests we saw were respectable, mild looking men, with their snuff boxes and blue cotton pocket handkerchiefs, as we see elsewhere: and the maligned ladies were very modest looking. To be sure the matrons must have been pretty safe from any improper solicitations, as they looked rather like an importation from the great pyramid. But their brunette daughters were pleasing to the look, and attractive enough. But they suffered in appearance by the substitution of French and English costume for their own graceful mantilla. Some who seemed to have been got up for the evening promenade were robed in muslin, white with a lilac flowery stripe—made demi-toilette fashion at the top, and abounding in the parapluce amplitude, and those enormities which prevail elsewhere. Their hair was done in two flat shining braids, one on each side, and a yellow flower behind. Their chaussure was perfect, flesh-coloured silk stockings and black satin shoes, and they walked as no one can walk who has not Spanish blood in their veins, and tossed about their fans as only Spanish ladies can do.

This little contrivance of whalebone and paper, or whatever it is, in the hands of a Spaniard, speaks a language as intelligible as that of word, look, or gesture—very often more so. For words are but conventional and may mean any thing. But these signs of the fan express only what they naturally represent—anger, affection, doubt, certainty, impatience, sorrow, joy, etc. But these strictures are merely meant as an answer to the observations of the Russian Admiral.

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#### A WORD ABOUT YELLOW FEVER, *and how to treat it.*

[A PAPER in a former volume of this work on the subject of that scourge of our race in tropical climates, called Yellow Fever, has proved to be so efficacious that we should take some blame to ourselves for not having already more than once repeated it; because our former

volumes as they fall out of print become difficult to find. It is a plain communication from a commander of the Mercantile Marine, and bears in itself ample testimony to its efficacy in the cure of that terrible disorder, provided that its precepts be faithfully followed out. It will be found in our January number of 1853. But in order to place it in the hands of the present commanders of our Merchant shipping we here repeat it, and shall hope to do the same in no very distant future volumes, that it may become the safeguard of our seamen and others abroad, whether medical assistance be at hand or not.]

**A SIMPLE AND SAFE TREATMENT OF THE YELLOW FEVER.**

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

*To the Editor of the Nautical Magazine.*

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

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

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

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



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

It would be presumptuous in me and dishonourable to a clever man, to lead you or any person to suppose that the treatment advised (if it has any merit) is not of my own knowledge or finding out. It is my experience in numerous cases of the treatment adopted by what I consider a most clever man, Dr. Edward Bascoma, who practised most successfully in Demarara for many years, particularly when it raged so fearfully in 1837. Any demerits must be laid at my door, as having failed to explain it properly.

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

Yours, etc.,

HENRY RICHARDSON,  
Late Commander, *Fairy Queen*, of Dublin.

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

British Consulate, Pernambuco,  
25th March, 1852.

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

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

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

Very faithfully and sincerely yours,

A. A. COWPER.

CAPTAIN RICHARDSON.

*A Simple and Safe Treatment for the Yellow Fever.*

As a preface to the remedy, I must remark, that from a very long experience of this disease, I have always remarked that the patient has been attacked between the hours of midnight and six o'clock in the morning; the symptoms, headache, pain in the back, hot skin, etc. It is of the most vital consequence that the remedy be applied as soon as possible, say within two hours from the commencement of the attack; no waiting till the doctor comes, as the first treatment can do no harm even if he does not wish to follow it up, but in the case of a person at sea, or on board ship where no doctor is at hand, I have never known, with proper nursing, the following treatment to fail when taken in proper time, say within the limits of six or eight hours from the commencement of the attack; but the sooner the better. Not being a medical man, and merely laying down those rules for the benefit of brother shipmen, I would suggest that both officers and crew of a ship should be impressed with the necessity of acquainting the master with the first appearance of sickness, particularly at night time, and I would also suggest to the master, that there is no time to be lost, but to see to it at once, if he happens to be on shore, leave orders with the mate to apply the remedy at once and not wait for his return.

When the symptoms are as above-mentioned, and in the vicinity of where the disease is suspected, I would at once administer an emetic, composed of twenty-five grains of Hippo or Ipecacuhana; on no account whatever use a particle of Tartar Emetic, or even the emetic powders as put in ships' medicine chests, which contain it. If in about a quarter of an hour the patient gets sick, and is inclined to throw up, it is a good symptom, and when he commences he must be well plied with quantities of warm water to drink, and the stomach well washed out; one gallon of water will not be too much. Every effort must be made to make the patient drink it; it will all come up, no matter how much taken. After the vomiting has subsided, the patient from the effects of the emetic, and the exhaustion caused thereby, will naturally drop into a state of lethargy; if sleep succeeds, no better symptom can appear, and I may say the cure is effected. However, to go on with the treatment. If, as I have said, the patient sleeps, say for four hours, on his waking have the following mixture ready for administering; or whether he sleeps or not. Take a common wine bottle and put into it the following ingredients:—two table-spoonsful of carbonate of soda, one dessert-spoonful of sweet spirits of nitre, one tea-spoonful of essence of peppermint; fill it up with water, and shake the mixture well up, so as to dissolve the soda, or do so before you put it in the bottle, and fill it with strong lemonade. The less sugar the better. When the patient wakes, or say within the four hours, it is very natural that he will be thirsty, and calling out for drink. Be determined and allow no drink to be given, except the mixture. Take one wineglassful of the mixture and another of the lemonade, add them together when he is ready to drink, they will effervesce, and will

be an agreeable draught; this draught must be repeated regularly every two hours. I have seldom known an occasion to replenish the bottles, but at all events, if the patient does not rally quickly, it will be no harm to do so, and continue the draughts. If in a port within the tropics, where fresh limes can be procured, there is nothing in my opinion so conducive to the cure of this disease, and they must be used in making the lemonade; and if the patient is calling out for drink, he must be diverted by a thin slice of lime in the mouth, a superfluity of liquid in the stomach is injurious. As to nourishment, he will require very little the first forty-eight hours; gruel, arrowroot, sago may be given. Although a patient generally speaking likes tea, I do not consider it good for him at the early stage of the disease; it makes him restless and prevents sleep.

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

I have been witness to other forms of treatment for this disease, in Demerara, Rio de Janeiro, Pernambuco, Antigua, etc. I must say, generally speaking, without any beneficial results. One form was on the first attack to administer castor oil—another form of treatment was bleeding in the first instance—another form of treatment was a large dose of calomel with jalap. Now to commence with the purgative medicines, what use are they in such a disease as yellow fever, where the black vomit is to be expected; the stomach is the head quarters of the disease, and when fever once sets in, all the digestive powers of the stomach cease; the purgative medicine has no effect on it, it merely clears out the intestines, but leaves the stomach in the state it found it. We will take, for instance, the state of a seaman as attacked at the time I state by this disease, say four o'clock in the morning. Seamen generally are of a very costive habit. We will suppose that on the previous day he has eaten a hearty breakfast, a dinner, and a supper, with, mind you, a quantity of meat with each meal. Well, during the night he is attacked with all the symptoms of the disease as above stated; it happens at a time when there is not much probability of getting medical aid; the disease is very rapid; in many cases medical aid is not procured before noon of that day, and when it is procured a purgative dose is administered—with what effect? none

for at least four hours, and what then? The intestines are cleared, but the head quarters of the disease remain as they were; the three heavy meals remain there undigested and putrifying, assisted no doubt by the quantity of water that a person in that state would be inclined and does drink; and in a tropical climate, what is the temperature of the water, and what the temperature of the patient's system in such a fever? It is no wonder that black vomit sets in, and that that black vomit is teeming with animalculæ. If the stomach had been cleared in the first instance, no black vomit would have ever set in; and is it any wonder that it does, because the natural contents of the stomach are allowed to remain there; and the constant pouring in of the drink causes it to distend to that extent, that vomiting must ensue, as all digestive powers have ceased. Whenever an emetic has been administered in the early stage of this disease, I have never known black vomit ensue.

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

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

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

In conclusion, I beg to state that my only motive in advising this treatment is from the very great success I have myself experienced in using it, and in the hope that it may be useful to any parties who

have not an opportunity of availing themselves of immediate medical advice.

Dublin, December, 1852.

HENRY RICHARDSON,  
Master Mariner.

[We shall be thankful to any of our readers who may have been under the necessity of adopting this method of treating yellow fever if they would send us the result.—ED.]

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A VISIT TO THE FISHING GROUNDS OF LABRADOR by *H.M.S. Gannet*, in the Autumn of 1867, *W. Chimmo*, Commander.

(Continued from page 234.)

THE huts of the Esquimaux at Hopedale are comfortable buildings for this class of people. They are formed with logs, floored with planks, and covered over with turf on which the grass grows in luxuriance, being sometimes ornamented with flowers. A small frame is let into the roof of the hut, over which frame is stretched the intestines of the seal, thus making it answer very well as a window. And the hut is soon completed with a porch at the doorway, that is always the residence of their dogs. On one occasion I had a fancy for making a sketch of a family party. The women were fat and portly; their infants dangling in the hoods of their dresses. One of these was busily engaged in pulling vigorously and with evident delight at a strip of raw fish, which employment, perhaps, kept it from squalling and being like some of the rest. But a sketch of the scene was impossible; rude curiosity on the part of them all soon put an end to all sketching from nature: still a sketch of one of the young ladies, who had a fashionable chignon, and another of an old dame with the odd name of Mrs. Catherine Nicodemus, occasioned outbursts of delight. Their jackets are made of American cloth, having a hood, the edge of which is fairly trimmed with fur, and the centre ornamented with embroidery; the jacket moreover was provided with sleeves, and also a kind of tail proceeding from the hips, and is ornamented with embroidery, as well as the cuffs of the sleeves.

But these Esquimaux ladies wear seal-skin trousers, sometimes covered with a petticoat or gown, and their babes in the hood of their jackets, warmly clad, altogether have a very curious appearance. To this the infant is encased, being swathed in a thick flannel or blanket dress tight to the skin, with a red handkerchief tied over the head, making it look more like a mummy than a baby. They are especially attached to European clothing, and will barter any article of their ordinary clothing, jackets, boots, or trousers for any worn out article of European dress. But of all articles of our European dress old trousers are most desired by them, and there is scarcely any thing they possess

that they will not give for old trousers. One of our officers anxious to obtain a specimen of their native costume, for an old pair of trousers received in exchange a newly worked jacket with its hood, embroidered cuffs, tails, and head piece. However, there is, no doubt, substantial reasons for their desire for these continuations of the European style, for the rigid seal-skin inexpressibles, in which they envelope their legs, must render the change to our soft and yielding cloth most desirable.

Their love of music is unbounded. During our stay they came to us every evening in large numbers, and their first object in getting on board was to form a huge cluster around the big drum, so that with all their love for music, harmony seemed to be out of their mental reach, but heavy and sonorous effect, which would reach the lower regions of the stomach, was their principal delight. Perhaps this crowd around our ponderous drum was not composed of the elite among the Esquimaux; for it must be recorded to their credit, that there were some among them who evinced considerable musical taste. On visiting some of their huts, one day I was not a little surprised, when I found an Esquimaux (gentleman shall I call him) playing on a violin! But how much greater was my astonishment on finding that the *bow* with which he produced the sounds of his violin, was actually strung with his wife's hair! We have often heard of the pursuit of knowledge under difficulties; but this contrivance of the Esquimaux, in pursuit of pleasure under difficulties, and in such a climate as that of Labrador, deserves a place by the side of the story of that great painter who constructed his first pencil-brush with the hairs of a cat's tail.

But there was yet more surprise for us in the musical way; for in another house hard by, there was a concertina, and perhaps the taste of these rude people may be considered as approaching even to refinement, when to my astonishment a respectable looking young girl took a guitar from over her dormitory, and after adjusting its strings without any hesitation performed a pretty little plaintive air in all due harmony, and with more taste than could have been possibly expected. It is well known that of all instruments next to the violin the guitar requires not only correct tuning, but also neat and expressive manipulation, and how well her fingers of both hands managed those strings was another occasion for surprise. But the young damsel verified the old saying "where there's a will there's a way," and certainly the way in which she acquitted herself on this ungrateful instrument (as it is well called) was highly creditable to her. I had listened with pleasure to her plaintive performance, withstanding as well as I could the incessant torments of mosquitoes, which however at length fairly drove me out of the hut. It is curious that in such a climate as that of Labrador these tormentors should thrive. But it is the same in Canada where the cold is about as much, and it no doubt arises from the sudden changes which take place and the rapidity of vegetation, and the wonderful manner in which heat makes everything thrive in a very short period of time. Here in the course of the winter, the thermometer in the months from January to March

inclusive will go down as low as 30° below zero, and commonly to 25° below, which with a fresh northerly or N.W. wind is very trying.

While we lay off Hopedale the trading vessel called the *Sherbrooke* arrived from the north. Her master a very intelligent seaman had been thirty-seven years in the trade, and was thoroughly acquainted with the coast. A remarkable piece of information which he gave us related to the trade in furs. The present season he informed us had been most unfavourable to this trade, and to an extent which is almost difficult to imagine. But he informed us that although he had obtained furs last year (1866) to the cost of £13,000, in this year (1867) he had not been able to get more than £40 worth. He was quite unable to account for it. Fur he said in some seasons will come (by which he meant the animals) close along the coast, while in others it will remain far inland. He stated that he had made an outlay of £800 on the coast. It seems not unlikely that the progress which the fishermen are making along the coast to the northward may have something to do with this; as in some degree it must interrupt the quietness, which of course the animals prefer.

According to the account of this commander the Moravian Settlement of Nain has a labyrinth of rocks off it, and could never be approached without an experienced pilot. Okak, another settlement, was better, but he once ran his vessel there on a three feet rock, while her stern was in thirteen fathoms of water. He had stood out to sea on his way here about seven or eight miles for the sake of avoiding shoals, etc., but even then on looking over the side he had no difficulty in seeing the bottom; and our escape especially at the rate of sailing we had adopted appeared to him marvellous. This was all very well but there is no doubt that had we kept a boat ahead always sounding and feeling our way, it would have cost us ten seasons of three months each to have got thus far. He informs us that his trade with the "mountain-hunting Indians" is always uncertain. Perhaps he was alluding to some Esquimaux, for the Indians of the interior are never known to come to the coast unless driven by famine. Such an event actually occurred in 1857 which drove the Indians to Nain, and these were supplied by the Hudson's Bay Agents with provisions in barter for furs. Another time when their provisions were all gone they came again; but having no furs they got no provisions! The consequence (not very creditable to the Hudson's Bay Company) was that many died of starvation. Some then went to the Mission where they were fed and took some provisions away with them. But still many more died, and this party have never since returned.

On Saturday, the 24th of August, we were very busy preparing the ship for a visit from the members of the Moravian Mission with their families. The event was a decided novelty; for ships of war but seldom visit Hopedale, and of course we had everything in order on board. Of the missionaries we received Mr. Ribback and his wife, Mr. Kretchner and also his wife, along with a host of Esquimaux ladies in their holiday attire. The missionary gentlemen were evidently quite comfortable in their sealskin suits, although the said

suits did not seem to correspond with their mission. But all the ladies wore their "Attigeks" as they are called, with their sealskin trousers and boots. Of course many of them were provided with their infants in their hoods, that they would fain at times lull to sleep.

The surprise with which they contemplated everything about them in the *Gannet* was a reward in itself to all of us. They had not even seen a ship of war before, much less visited one; and they were literally lost in astonishment at our nice houses as they called them;—the engines, the hammocks of the ship's company all in readiness; the furling our sails, sending top-gallant yards down, etc., were looked on by them with amazement. Altogether the impression made by the *Gannet* and her people will not easily be forgotten at Hopedale.

The female portion of our visitors, it must be allowed, proved themselves to be far more active than the male. They seemed to be more at home in the boats; scaled our ladders, and even handled our boats and all about them much better than the men. Possibly the trousers contribute to their activity. I once watched the proceedings of one of these damsels, as she approached the shore in one of our boats. No sooner was she near the shore than she jumped up, rushed over the thwarts, and then in a moment she had taken the sprit out of the sail, and handed the grappel to a man to take out, in a readiness of style that would have done credit to a sailor, if it did not astonish a north corner man, or a common-hard waterman.

After duly attending to all the wishes of our visitors they left us well satisfied with the reception we had given them, and judging from their manners and expressions they were greatly delighted, and doubtless the *Gannet* will be long remembered by the *elite* of Hopedale, as well as the generality who resorted to us daily for the sake of enjoying the powerful effect of our big drum! In fact our presence seemed to interfere much with the usual routine of our friends. The Esquimaux were too much absorbed with us to attend to their own work. Even at sunset each day when we were accustomed to hoist our boats up for the night by the bugle call, anything they were doing was left that they might witness our proceeding, and crowds of them would rush to a rock by which we were overlooked to see what was going on.

Our time for departure was drawing nigh. We had passed about a week here, but we had yet to witness the mode of performing divine service usually followed by the missionaries. The officers of the *Gannet* accompanied me to the afternoon service of the missionaries at their church, where the congregation numbered about 57 men and 50 women. The service was entirely done in their music, the orchestra consisting of four violins, a French horn, a base viol, and the harmonium. The whole service consisted apparently of one long hymn, the principal singers being women, six of whom were arranged on a form behind the rest, and were singing from *printed* music; four men were placed opposite to them, and were supported by the whole congregation. The music was generally good, and the whole effect was most interesting and imposing to us, so that the native mind (there can be no doubt) was considerably worked on. They evidently were



much pleased at seeing their friends of the *Gannet* in their church, and the order which they preserved was highly creditable to them. Of course infants were present in their mother's arms, and if one went to sleep the child was quiet enough, but any one proving noisy or unruly was immediately taken outside and left there by an elderly lady who sat in a particular place for the performance of this duty, and thus every possible attention was paid to the service.

Going home with the missionaries after church we inspected their family collections of photographs. Some of their children were at school in Gerinany, of whom they spoke in desponding terms, never expecting to see them more in this world. Certainly their utter banishment to Labrador seemed to afford but small chance of that; for considering the chances against children's lives, and the banishment their unhappy parents seem to be undergoing in this severe climate, adds little to the probability that they would ever realize their meeting.

We had passed about a week at Hopedale in the course of which time we had managed to make a fair survey of the place, and were now turning our attention seaward. Meanwhile as our departure was to be at daylight on the 26th of August we will here record some little account of these Moravian Missionaries who have condemned themselves to the cultivation of the Word of God in this inhospitable region of Labrador. The following notice of these interesting people, whose authority for occupying these wide shores we have just seen, has been preserved in the pages of the *Nautical Magazine* of no very distant date so that we may usefully repeat it here.

The church of the United Brethren (commonly called Moravians) sprung from a little flock of Christ which had preserved the doctrine and discipline of the Primitive Church during successive centuries, but was pursued by unrelenting persecution through the dark period of the middle ages. The church, under its present name, was formed sixty years before the reformation out of the wreck of the Bohemian Church, which had escaped into Moravia after the martyrdom of John Huss. There, previous to the time of Luther, they employed the newly invented art of printing in disseminating the Word of God in the vernacular tongue. The purity of their doctrine and discipline was fully recognised by the Reformers.

Continued and severe persecutions, often nearly to extermination, still followed them. At length in 1722, after the destruction or dispersion of above 200 of their congregations in Moravia, their last remnant fled into Saxony where they found a permanent asylum. This small body of exiles, scarcely exceeding 600 persons, began as early as 1732 to promulgate the gospel to the heathen nations, and in about eight years their missionaries were sent to no less than nine distant parts of the globe, and subsequently to others. Thus did the brethren, unknown and destitute of pecuniary resources, fearlessly lead the way in carrying the Gospel of Christ to barbarous tribes, etc., actuated by the same spirit, they had continued to send forth faithful, humble, diligent labourers, men contented to leave the comforts of a civilized

home, and to give up their lives to the service of their Redeemer, cheerfully and perseveringly exposing themselves to the baneful influence of a tropical climate, or to the rigours of an Arctic winter, receiving no pecuniary recompense for their labours, sometimes barely possessing, and sometimes destitute of the necessaries of life. To the simplest exhibition of the doctrines of the Cross they invariably united instruction in the useful arts of civilized life. Hence their settlements among the most savage tribes soon appeared as "gardens of the Lord" in the midst of a wilderness, and their quiet and peaceable demeanour, combined with a strict, yet mild, exercise of their ecclesiastical discipline had secured the esteem of the authorities under whom they had settled.

The number of their converts from the heathen already greatly exceeded the number who were in church communion with them in Christian countries, and was steadily increasing. In 42 missionary stations 214 missionaries were employed in instructing about 48,000 converts, gathered from the Greenland, American-Indian, Esquimaux, Negroes, Hottentot, and other South African nations, of whom, above 15,700 were communicants. By rigid economy they were supported at an annual expense of about £11,000, but the brethren can seldom raise by their own efforts above a fourth part of the amount. They were few in number, and mostly poor, and were thus unable to support by their own exertions such extensive missions. Distressing embarrassments had been some time the consequence, and they must long since have relinquished their stations, and have yielded up those christian inclosures a prey to the powers of darkness but for the bounty of benevolent friends, chiefly in England and Scotland, by whose aid the deficit had been made good, and whose unceasing support can alone avert future difficulties.

The progress of the missionaries was truly gratifying, and many fields of more extended labour were open to cultivation. Such was particularly the case in the West Indies. In the Island of Antigua alone, the brethren had above 14,000 negroes in connection with their church, one of the congregations contained nearly 7,000 negroes, of whom more than 2,500 were communicants, a proportion by no means unusual in the brethren's mission settlements. Four other settlements were established in that island. Additional stations had recently been formed in Jamaica and Barbados. In Jamaica a public-spirited proprietor in the parish of St. Elizabeth has recently presented to the Brethren 400 acres of land for the purpose of enabling them to form a Moravian settlement among the free negroes, the first establishment of the kind in the West Indies, but one admirably calculated to cultivate and improve both the outward and spiritual condition of the negro when emancipated. A new mission has just been commenced in Demarara. The whole number of negroes of the brethren's congregations in the West Indies and Surinam was about 42,000. Pecuniary means only were required in order to the occupation of more stations. Many invitations to instruct the negroes had been given by the proprietors, and such was the desire of the Gospel that at many stations

double congregations generally assemble. A separate fund for forming new establishments in the West Indies had been opened, in order that that desirable object might not be so pursued as to involve the missions generally in difficulty. A fund also existed for erecting school-rooms, and providing teachers and books for the education of negro children, for which the call was more than ever urgent in all the islands in which the brethren were stationed. It had been ascertained that twenty new school-houses were immediately required, to erect which £5,500 will be requisite. His Majesty's government had granted £1,500 out of the sum voted by parliament towards this object, provided the brethren would contribute £750 more. An appeal to the Christian public had been issued in order to obtain, if possible, not only the smaller sum, but the whole amount not provided for by the grant, nearly £4,000, which will convey the blessings of Christian education to about 4,500 negro children. In Surinam a society had recently been formed by the inhabitants, under the sanction of the government, for the religious instruction of the negroes of the colony, through the brethren's missionaries, who had extensively visited the interior. In South Africa, Enon, Elim, and the Leper Hospital, which had been more recently occupied by the missionaries, were, together with the two older settlements in a flourishing condition. The new mission among the Tambookies, a tribe bordering on that of the Caffres, was in a state of gratifying progress, and the whole of the settlements had been wonderfully preserved during the late calamitous invasion of the Caffres. Several of the Tambookie nation, and some of the Caffres and Mantatees, had been added to the church of Christ.

In Greenland the settlement last established called Frederickstat, now numbered about 400 resident Greenlanders, and above 320 of the number had been baptized. The new northernmost settlement on the coast of Labrador, called Hebron, was also established, and although the number of its inhabitants was small, it might for a season try the faith of the missionaries, it was hoped it will in time be favoured like the more southern stations on the coast, to be another Bethel on that ice-bound shore. But to return to our *Gannet* and her proceedings:—

The 26th of August was a cold rainy day with a gloomy morning, as we started on our return voyage intending to run first to Aillik. Our passage to this place was rapid enough and our usual good fortune kept us clear of two sunken rocks in our way that were quite formidable enough to have finished the *Gannet*. But before sunset we had found our way into this excellent harbour, and were welcomed by Messrs. Bright and Goldston, who were glad to entrust their despatches to our care for Newfoundland. Having left Aillik soon after daylight, on the next day we were again off Webeck by about noon, adding some soundings to our coast line sheet, and narrowly escaped losing them all by our work being nearly swept overboard by the breeze in a thunder storm. This along with the swell of a sea from the N.W. gale of yesterday, made our work uneasy and the little *Gannet* too. However we managed to get to Indian Harbour by eight in the evening, after a narrow escape we had by passing over a shoal patch

of a bank, proving that there is a Providence watching over our ways, "rough hew them as we will."

Indian Harbour afforded us rest and quiet which was much more than this ever riotous sea would do, and probably the same quietness afforded a good opportunity to a couple of young Esquimaux dogs to make their suppers off a pair of shoes to each of them! No doubt the novelty of the repast had something to do with the relish with which these extraordinary animals devoured them; for good English tanned leather was more than they could resist, accustomed as they had been to fish green or cured and dry. But it was in vain that the owners sought for them everywhere, dropping some ugly expressions here and there about the bad manners of Esquimaux dogs.

The next day was one of business, employing all hands, for we were all bent on exploring the ocean depths all for the sake of the safety of navigation. In fact the message entrusted to us, in these cold forbidding latitudes, was one of utility to seamen and fishermen. There was Gibson harbour to be treated, with Duncan passage also, and an island called Big Island, which required its shore line to be defined on the chart, besides a variety of smaller islands which the surf beating on them made unpleasant to approach; a double island and another called Tinker's Island without a tinker upon it; all these had to be attended to by the boats, and the little *Gannet* herself had to take some outside work, all of the same nature—sounding and coasting—having to explore Herbert Island and the west side of Sir Rodney Mundy's Island, about the Black Rocks, and to be specially careful of unknown shoals which indeed like snakes in the grass were the greatest enemies we had. All our officers, Lieutenant Wharton, Mr. Covey, Mr. Cuthbert, and Mr. Baillie, and myself, in the ship, were hard at work the weather favouring us nobly, so that although by the evening, when a strong S.E. wind brought with it a blinding fog, we were compelled to lay by and had to run into a snug harbour, called Ice Tickle, on the north side of Rodney Mundy's Island, we had still some work to show.

This was a place by far too important to part with when there were two reported dangers in its vicinity, that were unknown and required our most careful attention; for they had occasioned the destruction of many vessels. On the following day we were so fortunate as to find them: one of them with not above a foot of water on it at low water, and the other what sailors call awash with the surface. But we placed them in our chart, with marks for clearing them; and pronounced them to be most dangerous company for any ship to find herself with. So by sunset, another valuable day's work had been accomplished, and we all returned to our adopted harbour. The very handy position of our harbour, "Ice Tickle," makes it much frequented by fishing vessels. It is said that in July, when vessels are going north, as many as 300 have been found at a time anchored in it. They enter it by the west channel from the southward, leaving it through the east channel for the northward.

A curious incident occurred on one of the islands. That interesting

little bird so often seen in a stormy sea, called "Mother Carey's chicken," was found by one of the officer's sitting on its single egg! The poor little creature, as if

"Spell-bound to its lonely nest,"

allowed the intruder to take her with his hand; and, whether by accident or how could never be made out, no sooner was the fond little mother secured, than the object of all her tender care of days, the egg, was smashed! How like the world was this! How like the rude, rough, cold unfeeling world was this. Her care, all her voluntary imprisonment was lost. What even became of herself I could never learn. But she was a specimen of that rare little bird that almost lives on the troubled waters of the ocean.

No sooner are we on fishing ground again, than complaints reach us of the barren season. One thing is certain, and that is, that the fish are most uncertain. It seems that the fishermen in this season were late. Capelin and cod it is said "spurred" on the 10th of June, and yet the vessels did not arrive until July; and as the herring did not make its appearance as it should have done when required for bait, as well as barrelling (for they don't seem to understand how important they are), the consequence is the fishermen have nothing more to do. The fishermen of course would impose on the fish without mercy, as they must expect; but they outwit the fishermen by being irregular, and certainly this season too early for them. Then in addition to their evils, these said fishermen complain bitterly of the exorbitant prices they are made to pay for their provisions, absorbing even their very profits. And yet the merchants, who undertake to supply them, soon retire after amassing large sums of money. Not very long ago, a firm at Newfoundland dissolved partnership, having been known as supplying the fishery with provisions for fifteen years. The share of each one of the three partners, forming the firm, was stated to be £40,000, besides the plant or standing property. The trade flourished by imposing large prices on the fishermen, and this ought to be remedied: it should not be.

Our "Icy Tickle" was all alive this evening, the whole place resounding with revelry. There were no well lighted marble halls, it is true, nor did Sir Knight pledge his lady fair. But there still was revelry, and some old fish dames, although not sporting "the light fantastic toe," were nevertheless as merry in following the mazes of the highland reel as ever they were in the land o' cakes or in Bonnie Dundee. Indeed, they not only astonished us but themselves also. The music of the *Gannet* had as much effect as it had at Hopedale, and old and young, lads and veterans, lasses young and ladies old, footed it in earnest, until they drew down the tears of night, that in the shape of a good smart shower broke the spell of the evening, and sent each of us to our domicile. But all agreed that it was long since "Icy Tickle" had known such a tickler!

We might have retired the preceding night, singing with the witches, "When shall we three meet again, in thunder, lightning, or

in rain," for this morning the answer was plain to behold, and in the midst of it with many a wet jacket we parted from "Icy Tickle" for our old resort "Indian Harbour;" and here in the midst of wet and cold we had to work out the contents of our coaling vessel into the hold of the *Gannet*.

In the night which followed there was much thunder and rain, until we had the wind in squalls from the northward, which cleared off the rain and shewed us the new moon and the Aurora; and the next day our people were all busy landing the coals from our collier.

Here was at length another Sunday, and most heartily glad we all were to welcome it as a day of rest in the full acceptance of the term. The day was ushered in by a fine but cold morning. This was also the first day of September, and soon the fine sunshine gave place to wet. Certainly we had had no great cause for complaint in point of weather. But now we had strong symptoms of winter, and that early too, by the usual flights to the southward of wild ducks and geese, all betiding a near and trying season.

At our Sunday prayers to-day we found an unusual crowd of visitors and the circumstance suggested to me how desirable it was that some charitable minded minister from Newfoundland might be seen on this coast in the course of the fishing season. There are thousands of fishermen about here who are out of the way of all attempts at prayer. There they are from July to November, with hundreds of children, and glad would they be, could they get such attention. They are a rational set of people too; even their hair-breadth escapes in fishing are sufficient to make them reflective. The terrible voyage to and from Newfoundland in July and October, when the weather is both cold and stormy, produces scenes which they cannot think of without anxiety and rejoice when they are over.

There was an old lady living on shore at this Indian Harbour from whom I had received much kindness, and who was among those who came off to family prayers. She had most kindly sent me some preserved baked apples, and wild flowers much resembling the hyacinth. These they called "Farewell Summer," being the last of the wild flowers that bloom in the season. She was moreover a very communicative old dame, and certainly her account of her last voyage to this place from Newfoundland exhibits a picture of suffering of no ordinary kind.

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#### TWIN SCREWS AND FLOATING DOCKS.

In a previous notice I commented on the impropriety of introducing the twin screw system in our war-ships before its advantages and disadvantages had been well gauged by experiments on sufficient scales. Recently, however, I have had the most favourable and continued opportunities (at that time I based my convictions on theory only, as I

had never sailed in a vessel fitted with twin screws) of conducting the necessary trials. I find that my apprehensions are more than realised, and the sooner such structures are discontinued the better will it be for the reputation of the Admiralty and the welfare of the country, for both will be seriously compromised if the building of such ships be persisted in.

As I have already pointed out their many disadvantages a repetition will not be required. There is one important defect which I then omitted, and which is worthy of the most serious consideration of the advocates of the twin screw, as it assails them on their most important claims to superiority. I allude to the hopeless defective steerage in a seaway when running dead before the wind, and worse still when the wind is abeam.

At first I attributed a part of this to the helmsman, but repeated trials convinced me that the whole was due to the unequal velocities of the screws as they worked in the air or water. The racing on the former taking place was something marvellous as no governors were fitted to the engines. When the starboard screw was deeply immersed the ship's head fell off to port before the helm had the slightest effect, and ere it could be moved to its normal position, a roll in the opposite direction upset all previous calculation.

It is with regret that I assert that we have sadly retrograded in the construction of small craft since Mr. Reed has been in power. In lieu of the safe dashing handy corvette of 1856, we have low unsafe rolling boxes of machinery. I have frequently counted their rolls when at anchor in an ordinary trade swell, and have registered to twenty-one in a minute. And such rolls! First the deck visible and then far down the bilge.

I believe the Admiralty are now thoroughly awake to their demerits as two of the most unsafe have recently been sent to the penal settlement of Bermuda, to end their inglorious career amidst the coral reefs of that group, or to rot at their moorings off the dockyard. As one is constructed of iron, this leads us to that gigantic structure the Bermuda dock, about which we have heard so much and which is not yet across the Atlantic.

There appears to be a fatality about foreign floating docks from which I trust this will be exempted. The dock (floating) at Callao upset with a Peruvian frigate inside, and 250 men perished. That at St. Thomas isle sunk in the hurricane of 1867, and still blocks the harbour up in defiance of the skill of American divers.

The reason assigned for sending out the Bermuda dock is the porosity of the stone which forms the islands. Allowing that stone could not be cemented sufficiently close to keep the water out, is there any reason why a shell of iron should not have been rivetted round the sides and bottom? Such a structure would have lasted our generation, and it is hard to say if the next will care about preserving Bermuda, for they will require a similar place on their own eastern seaboard to keep a power in check whose ambition will sooner or later cause us trouble.

[We find the foregoing in the *Mechanics' Magazine* of this year,

and verily there is enough in it for serious contemplation. Of the twin screw system we have heard nothing, but the objection to it is evident enough when it is well considered, and must be specially vicious where the small craft has an unamiable tendency of showing her bottom, such for instance as those which have been transported to Bermuda for their evil propensities. Of the floating dock we have heard nothing as yet but her having wintered in the Mersey somewhere. And as to the want of such a thing, and the mode here proposed to supply one, we apprehend it would be less costly than that which has been already adopted. As to the Eastern power to be kept in check we must leave that subject for the consideration of far seeing individuals, whoever they may be.—ED.]

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COAST LIGHTS.

*Cost of Maintenance—Parliamentary.*

IN the course of the month past the light dues paid by our own and foreign shipping have been the subject of discussion in the House of Commons. A proposal was brought forward on Tuesday, the 4th of May, that the cost of maintaining these lights by a charge on home and foreign shipping, was a practice unworthy of a great nation whose ships are afforded the use of the lights of other countries free of all expense.

This was no doubt a plausible argument advanced by Mr. Headlam, the member for Newcastle, and was well illustrated with comparisons of what would become of our coast navigation without them. But he advanced one or two points of no profit whatever to his cause. Thus he said the grievance of which the shipping interest complained was this—a gentleman sailing up channel in his yacht might turn to his right hand or to his left, and nobody would demand anything for lights and buoys. A man-of-war, which might be compared to a huge bird of prey—would escape equally scot free. A merchantman, whose commission was one of peace and benefit to the human race, might turn to the right, to any port of France, or, sailing past Dover, might enter the German Ocean or the Baltic, and would be asked to contribute nothing. But let her enter the Thames, or any of our harbours, and when her cargo was cleared a bill would be presented to her for her share of the advantages which had been conferred upon the community by our lights and buoys.

Now as to yachts, their contribution calculated from tonnage or draft would add but little to the fund; and a man-of-war being exempt arises simply from her performing duties required by the State. So that if any payment for her were made, the State would contribute it. And “being constructed for nothing but to do mischief,” requires a qualification which Mr. Headlam could not acknowledge, but should have said “to the enemies of that state,” and the protection



when required of the "merchantman whose mission was one of peace and benefit to the human race." Mr. Headlam would have remembered that protection if he had witnessed it above sixty years ago, when half the world was in arms against us. What, we ask him, would have become of his merchantman in those days well remembered by our navy, when 200 sail of them would put to sea under convoy of the man-of-war for the West Indies? Now all these vessels carried freight and would in justice pay light dues. But do yachts and ships of war carry freight, no,—ergo, what have they to do with light dues? However the object of the member for Newcastle was to throw the whole light expenses on the Consolidated Fund, and leave all shipping home or foreign free from the tax. But other members who spoke on the subject by no means coincided with Mr. Headlam's views although they still agreed that change was desirable.

Among the observations, those that fell from the Chancellor of the Exchequer were some searching truths much to the purpose. Mr. Lowe, with his usual discrimination, observed that the subject was no doubt one of great complexity, and one in respect of which it was impossible to do justice to everybody; but that was a peculiarity which it participated with every other mode of levying money from the public. He certainly thought that the whole of this business ought to be placed in the hands of one responsible minister; but those who spoke of the Trinity House as an independent body scarcely considered the great changes which had lately been made. The Trinity House was now little more than a department of the Government—a not, perhaps, thoroughly well organised one—but still a department for which the Board of Trade was really responsible.

However, he (Mr. Lowe) wished to confine himself to the question that affected his own department, which was, whether this £325,000 should be transferred to the Consolidated Fund. Now, in the first place, these light dues were not a tax at all. They were simply a payment for services rendered. It was money levied on the shipping interest, but expended also for the benefit of the shipping interest, for its object was to save the property of that interest and the lives of their sailors. It was, in fact, a sort of turnpike toll, only that those who paid it had not the trouble of pulling up for the purpose.

The next question was whether it was unfair or unreasonable to call on the shipowner to advance money, for assuredly *he did not ultimately pay it*. On the contrary, it formed part of the freight, and the freight formed part of the price, so that it must necessarily in the end be paid by the consumer, more especially as it was collected with extraordinary leniency. It was not collected, for instance, on ships in ballast—in fact, *no ship paid it unless she was carrying freight*. It had been represented to him by a large deputation, of which the right hon. gentleman (Mr. Headlam) was a member, that it was iniquitous to call on the shipping interest to pay a tax for the benefit of the whole community. He (Mr. Lowe) pointed out in reply that the tax, if paid by the shipping interest, was levied upon the community, and he was glad to see that his right hon. friend had dropped that ground. His

complaint now was that we were not acting in a manner worthy of a great nation. Thus they had got from the ground of interest to that of chivalry. That was a great step.

But then came the question—was there any hardship in levying such a duty as this? People talked about taking money out of the Consolidated Fund as if it got there by itself—but they must remember that if they gave up these dues, £325,000 would have to be added to the revenue somehow; and it would be exceedingly difficult to point out any tax that could be collected more fairly, justly, or equally. Testing these views by the ordinary criterion of taxation laid down by Adam Smith, if the tax was to be equal, could anything be fairer than that it should be advanced by the persons who received the benefit, and be recouped by those who consumed the commodities? The dues were collected very cheaply and fully realised all the requisites of sound taxation, with this additional advantage that the money was expended entirely for the benefit of those who would ultimately pay it. That taxation might be divided into two parts. It consisted altogether of £325,000, of which £179,000 was paid by ships importing, and £146,000 by ships exporting goods. As the consumer paid this tax it followed that nearly one-half was paid, not by the natives of this country, but by natives of foreign countries, and he thought that a considerable advantage to this country.

The proposition was not so much to shift the tax from the shipping interest to the Consolidated Fund as to shift one-half from the inhabitants of other countries and place it on the shoulders of the people of this country. It was said to be unworthy of a great nation not to reciprocate the treatment which we received from foreigners; but this was not a question of removing obstacles from the way of commerce, but of bribing others to come to our shores, by paying out of the general taxation those sums which ought to be paid by persons who came to them. The argument would be as good for the Government building docks and throwing them open to foreigners without charge, and he knew not the limit at which such an argument would stop.

The real truth was that commerce was the mother of shipping, and the proper means of bringing shipping to them was to throw open their trade to all the world. While they made foreign countries pay for the lights of which they got the benefit, other countries did the reverse; they were liberal as to their lights, but they indemnified themselves by putting enormous protective duties on imports. On these grounds he entirely objected placing the charge on the Consolidated Fund. It appeared to him that the tax was just, and fairly imposed, and he only wished other countries would deal with us in the same spirit in which we deal with them, and taxing us for their lights would forbear to tax us for our commodities. He trusted his right honourable friend would not press his motion to a division.

Eventually the proposal of Mr. Headlam was withdrawn; but some observations were made by Mr. Bright, much to the purpose. Among other things he said, if they were to reduce the dues upon foreign

ships the revenue which they would obtain would be so small that it would be impossible to maintain the present lighthouses or to extend the system of lights. Therefore the equalisation of the burden of dues on coasting and foreign vessels did not appear to him to be practical. He agreed in the general proposition that the tax itself upon shipping was not to be complained of, but just complaints might be made of the irregularity with which the charge fell upon different kinds of shipping, and upon ships going long or short voyages.

He had been in communication with the deputy-master of the Trinity House to see if some mitigation of this could not be made, and he had hoped that although the tax could not be removed altogether they might give relief to some portion of the shipping interest. As to the Trinity House itself the noble lord (Viscount Bury) seemed anxious to send it after the East India and the Hudson's Bay Companies; but the Trinity House did not deserve to be classed with the East India Company. During the past few years this body had undergone great reform, and many charges now brought against it, which were true in times past, were true but to a small extent now. While, however, this corporation had been greatly reformed of late, it would be a very bold and foolish thing to say that its composition at the present moment was the best possible. It did its work with very great effect, but nobody could deny that it would be a good thing to bring the Irish, Scotch, and English management of the light dues under one head. At present, the influence of the Board of Trade over the Trinity House was pretty considerable, and they seemed anxious to adopt any suggestions, and take any reasonable course which might be proposed to them by the Board of Trade.

He had already said that the question of the equalisation of rates was under consideration; and he had to add that the question of a further change in the constitution of the Trinity House had recently been under constant discussion. It appeared to him that it might be possible to maintain the Trinity House as it was, with a similar number of members better paid—and he should hope, in some respects, better qualified for the work than the average number of twenty-two Brethren now were. This was a very difficult thing to do, and at the same time to maintain the ancient constitution of that body.

Therefore before very long it would, in all probability, be the duty of the Government and Parliament to consider whether any attempt should be made at any further half-way reform, whether they should stay where they were now, or whether the whole question should not be thoroughly considered with a view to a change being made by which the three departments of England, Ireland, and Scotland should be united in one well organised system under the Board of Trade. The House would excuse him, however, if he did not give any confident opinion on this point at present, as he had not been sufficiently long in office. He could only say that the whole question was being anxiously considered, and he hoped some good result would follow. Under these circumstances, he trusted his right hon. friend would be satisfied, and not press his resolution to a division.

We believe that Viscount Bury said that the lighthouse affairs should be under one Board, with which we quite agree. But when it is proposed to turn it over to the Admiralty, this Board we are of opinion will have nothing to do with lights. Should it ever be determined to remove it from the Trinity House, and another entire new Board be formed, the Admiralty should be the ultimate reference for decision in cases of necessity. The Americans manage their 383 lights with a Board of three civilians, three naval officers, and three military engineer officers; two of the civilians being professors, and the other the Secretary of the Treasury, with a staff of five clerks.

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### THE ROYAL NAVAL FEMALE SCHOOL.

THE Royal Naval Female School at Isleworth is an institution intimately connected with the Navy and its branches, that has not been placed prominently forward in these pages. We therefore from motives of injustice admit the following notice of it, and we are glad to find that it has progressed as it should do under its president and vice-presidents as well as vice-patronesses and its committee, all more or less engaged with its treasurer and secretaries in watching and promoting its welfare.

Not having a report at hand we have recourse to the following notice of the committee, having prefixed to it a few words from the intelligent and well known indefatigable secretary, Mr. Arthur Ellis, R.N., who informs us that:—

Many years ago a unanimous vote of the committee opened the benefits of the School to the Daughters of Officers of the "Reserve," and some young ladies have from time to time been admitted from that branch of our service.

We express our conviction that if the Institution was more generally known parents would gladly avail themselves of its advantages for their daughters, and we feel assured the school would also receive pecuniary aid from many of our brethren of the "Reserve."

A well known and respected officer of the Royal Naval Reserve, Lieutenant Allen Young, has lately been appointed a member of the committee of management.

We will now follow the statement of the committee, which says:—

This Institution originated in the benevolent design of the late Admiral Sir Thomas Williams, G.C.B., who with a view to its formation and permanent establishment, munificently bestowed the sum of £1,000, to be invested in trust as the basis of an endowment fund; and, in order to meet the usual difficulties of a newly-formed Institution, he further most liberally arranged that the rent of the Establishment at Richmond should be defrayed from his estate, by the additional contribution of £100 per annum, for a period of seven years.

In 1856 the present eligible School-house and ground (at St.

Margaret's, Twickenham) were purchased, and the Establishment removed from Richmond; and, whilst the Committee are grateful for the liberal support given towards obtaining this very desirable property, they feel it a duty to solicit contributions for the special object of replacing the money borrowed from the Endowment Fund.

The object of the Institution will be best shown, and its commendation and support most effectually secured, by a simple quotation from the laws, extracted from the printed Report, giving a clear definition on this point:—

“The object of the Royal Naval Female School, as established on the 2nd of April, 1840, agreeably to the intention of its benevolent founder, is to bestow upon the daughters of *necessitous* Naval and Marine Officers, of and above Wardroom rank, at the lowest reduction of cost practicable, a good, virtuous, and religious education, in conformity with the principles and doctrines of the Church of England.”

The number of Pupils is limited to eighty-seven, daughters of Naval and Marine Officers, receiving to the full, as far as circumstances will permit, the advantages proposed by the benevolent founder; of these, twenty-six are received at the annual payment of £40; fifty-six (all daughters of necessitous officers) are boarded and educated at the entire cost to the parents or guardians of £12 per annum; and five are Nominees of the Patriotic Fund, whose fathers died during the late war; the Establishment defraying the *larger* amount of actual cost through the means of *voluntary contributions*. At the present time there are on the reduced scale of payment seven who have lost both parents, and twenty-nine others have lost their fathers.

The Institution has already been of sufficient duration to establish a high character for its efficiency and advantages, as a seminary for Female education; the best testimony to which, in addition to concurrent public opinion, is derived from the invariable satisfaction expressed by the parents of the pupils, and the numerous pressing demands which are continually made for admission.

Hitherto it has been the object of the Committee to afford, to the fullest extent practicable, the justly appreciated benefits which such an Institution offers to the Naval profession; ever adjusting their arrangements, both as to extension and limitation, with a minute regard to the balance of receipt and expenditure.

There are now several Scholarships attached to the School, which are highly valued as incentives to industry and good conduct, but they confer no pecuniary advantage on the funds of the School, the benefit being entirely to the pupils and their parents. For particulars of the origin and practical working of these Scholarships, see the printed list of Contributors, to be obtained at the office.

The experience of twenty-eight years has taught the Committee the necessity of using every possible effort to secure the Institution against the contingent support which mere occasional contributions afford; and this necessity is not decreased by the removal of the Institution to its present locality.

The Committee acknowledge with gratitude the fair proportion of

public support which they have hitherto obtained, and from the liberal aid already experienced from many members of the Naval profession, they confidently hope that when the Establishment becomes more generally known among their brother officers, it will receive the support of those who have not yet contributed to its funds.

The above particulars, briefly and frankly stated, will doubtless suffice to make it apparent that there is an imperative necessity for extra exertion, both to secure the Royal Naval Female School from any diminution of its present state of usefulness, and for the means of its permanency; and the Committee would still cherish a confident hope in public generosity towards an object so essentially important to the Navy in particular, and so palpably beneficial in its relation to the community at large. By order of the Committee, Francis Maude, Captain, R.N., F. Horatio Fitzroy, Hon. Secretaries. December, 1868.

Every information will be afforded by Mr. Arthur Ellis, Paymaster, R.N., the Secretary, at 32, Sackville Street, Piccadilly, to whom contributions may be paid; or, if more convenient may be sent to him by order on a Bank, Post Office (Vigo Street, W.), or Navy Agent.

Donations, Annual Subscriptions, and Legacies are respectfully solicited.

Contributions will be received by Messrs. Cocks, Biddulph, and Co., Charing Cross, Bankers to the School, and by all the Navy Agents.

Each Donation of £2 2s. gives one vote, and each Annual Subscription of £1 gives four votes, and in like proportion for all contributions. Subscriptions under £1 give a vote for each 5s.

The elections take place annually in July.

A List of the Candidates, and a Voting Paper, are sent to every Contributor at each Election.

All persons can vote who become Contributors before the day of Election, and Voters absent from England may authorize any friend or relative to vote in their stead.

Having recorded the foregoing particulars it may conduce towards the benefit of the Institution by giving our own readers the opportunity of observing the names of the various officers (high in their profession) as well as those of the ladies by whom the affairs of the Institution are regulated. And certainly if rank, station, and intelligence, along with strict economical and excellent principles, could ensure success, we should consider the establishment of the Royal Naval Female School, as very well provided for.

Royal Naval Female School, St. Margaret's, Isleworth (opposite Richmond), Postal Address—St. Margaret's, Twickenham, S.W. Established 1840. For Educating (at a reduced cost to the Parents) the Daughters of necessitous Naval and Marine Officers. Under the patronage of Her Most Gracious Majesty the Queen.

*President*—Admiral the Hon. Arthur Duncombe.

*Vice-Presidents*—Admiral the Right Hon. Earl of Hardwicke, The Lord Bishop of Winchester, Admiral The Right Hon. Earl of Egmont, Admiral Sir William Bowles, K.C.B.; The Right Hon. Lord Henry

Cholmondeley, Admiral Sir Geo. F. Seymour, G.C.B., G.C.H. ; Admiral Sir M. Seymour, G.C.B. ; Admiral Sir George Back, Admiral Sir B. W. Walker, Admiral Sir Robert Smart, K.C.B., K.H. ; Capt. George Hope, Major-General Whylock, Admiral Bethune, C.B. ; Rear-Admiral the Right Hon. Lord Dunsany, Rear-Admiral Warden, C.B. ; Admiral Sir James Hope, G.C.B. ; Admiral Sir Thomas S. Pasley, Bart.

*Vice-Patronesses*—Miss Baker, Lady Manningham Buller, Mrs. Buckle, Mrs. D. B. Chapman, The Lady Colchester, Mrs. Douglas, Mrs. C. R. Egerton, Mrs. Evans, The Dowager Viscountess Harberton, Mrs. George Hope, Hon. Mrs. F. Maude, Eleanor Duchess of Northumberland, Mrs. O. Ricardo, The Dowager Lady Troubridge, Mrs. Spencer Walpole, The Hon. Mrs. Wigram, Mrs. Morgan Yeatman.

*Committee*—Commander Agnew, R.N. ; Captain Beamish, R.N. ; Rear-Admiral Bosanquet, Commander F. A. Boyce, R.N. ; Captain Boyle, R.N. ; Rear-Admiral Buckle, C.B. ; Rev. James C. Conolly, Captain Coote, R.N. ; Captain M. Dixon, R.N. ; Captain the Hon. Fras. Egerton, R.N., M.P. ; Captain C. R. Egerton, R.N. ; Sir James Elphinstone, Bart., M.P. ; Captain John Giles, R.N. ; Vice-Admiral Goldsmith, C.B. ; Rev. J. D. Hales, Rear-Admiral Hand, C.B. ; The Rev. J. H. Lang, Captain Liebenrood, R.N. ; Captain Littlehales, R.N. ; Commander Sir J. H. Maxwell, Bart., R.N. ; Captain Nolloth, R.N. ; Captain R. A. Oliver, R.N. ; Rear-Admiral Ommahey, C.B. ; Rev. E. S. Phelps, Sir James Prior, D.I.H. ; Captain C. J. Rowley, R.N. ; Admiral Saurin, John Tarn, Esq., Surgeon, R.N. ; Captain Woodgate, R.N. ; Lieut. Allen Young, R.N.R. ; Rev. E. Kitson.

*Treasurer*—Forster Alleyne M'Geachy, Esq.

*Hon. Secretaries*—Captain Hon. F. Maude, R.N. ; F. Horatio Fitzroy, Esq.

*Secretary*—Mr. Arthur Ellis, R.N.

*Assistant Secretary*—Mr. Samuel Rayson.

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## THE AMERICAN QUESTION.

AGREEING as we do most cordially with the sentiments of Mr. Forster, on the subject of the great question between this country and the United States of North America, and as it is one that is yet likely to occupy a large share of attention, we are quite ready to volunteer space in these pages for those sentiments which were delivered by that gentleman, on the evening of the 20th instant, at Bradford. From the beginning to the end of that intestine warfare our sympathies were ever with the North ; first on the principle that the South were fighting to uphold slavery, an institution which for many years our Government had expended thousands of pounds to put down, and next that two great principles diametrically opposed to each other could never co-exist in such a country as the States. And as the mischief done to the North by this country must be compensated for by us, it

is well that we should see the question as fairly stated by the Right Honourable Member for Bradford.

Mr. Forster thus commenced his discourse :

Let it be clearly understood that I am speaking solely for myself. I am not a Cabinet Minister; and with regard to this question, I did not consult any of my colleagues, and no one is responsible for anything I shall say upon it except myself. You know how desirous I was for friendship with the United States. You know how I have struggled for it, and you know this because you have helped me in those struggles at the time when there was danger to peace between England and America from what had been done in England. I shall always be grateful for that help—you helped me with power and vigour, and with earnestness, to do what in me lay to remove that danger, so that England should not be responsible for any disagreement with our kinsmen in America. And now, if there be danger at all, it is danger in America.

I do not wish to exaggerate that danger. I believe it is exaggerated already. But if there be danger at all, it is there. Well, it is a curious wish—I almost desire that you were all Americans. I wish, instead of talking to my Bradford constituents, I was talking to my American friends—for I believe I have friends in America—I wish I was talking to them, and perhaps some few words that I say to night may reach some of them—and they may feel that I am talking, not, as I say, as a member of the British Government, but as a man whose most earnest desire and effort, when he has taken part in politics, has been to have a lasting and faithful friendship between this country and the United States.

A chief reason why I at all allude to this subject this evening is on account of a speech which has excited a good deal of attention, made by a personal friend of my own—Mr. Sumner. I need not say anything to you in praise of Mr. Sumner. Bradford people have studied American questions—they studied them before the civil war, and during the war, and afterwards—and they know about Mr. Sumner. They know that Mr. Sumner was a man who suffered for the cause of right—who suffered persecution, injury, and outrage in the cause of the slave—who stood by his country in its great struggle as a patriot should have stood by it, and whose words, therefore, even if I was not related to him on terms of personal friendship, I should look upon with respect and with the greatest possible attention; but Mr. Sumner has done me the honour, in his speech to which I allude, to quote from past speeches of my own, and therefore I am sure he won't complain if I make some allusion to what he has said. He has taken a ground which I greatly deplore.

We in England had persuaded our Government to offer to submit to arbitration our dispute with America, with regard to the injury inflicted by the *Alabama* and other vessels. It was not very easy to persuade Englishmen to do this, but we did persuade them. It was only right that we should do it—it would have been most wrong if we had not done it; we ought to have done it long ago. Mr. Sumner, in



his speech, appears to reject this proposal of arbitration, and to demand instead of it an apology, almost, I might say, an abject apology, and some untold sum of money besides. Why does he make this demand? Chiefly upon two grounds, on both of which I venture to think he is mistaken. He first says he demands it because the proclamation of neutrality that was issued in the Queen's name at the beginning of the civil war was uncalled for, and premature, and hostile to the United States; and because, secondly, having proclaimed neutrality, England broke it, and, to use his own words, threw her sword into the struggle. Well, now, I am not here as an apologist for all that our Government or that England has done. You know very well that I am not, for I was earnest in deprecating much that was done. But I do say that in both these respects I venture to think that Mr. Sumner is mistaken.

Now with regard to the proclamation, that appears to be the great cause of offence against England in the mind of Mr. Sumner, and of many influential and most excellent Americans at this time. I want you to look back—and bear with me if I go into rather a dull discussion, as the question is very important. Look back now to what was the position of England when that war broke out. Suddenly Englishmen heard the news of the South having rebelled against the North. It was a surprise to Englishmen generally. It was little of a surprise to me, because I had studied American affairs long ago; but it was a surprise to Englishmen generally, and I believe it was a surprise to Americans generally. But, however, that war broke out, and the whole of the South was in the possession of these rebels. What was England to do? Why, it was her duty to declare that, however much she might lament that war, she would have nothing to do with aiding either side. It was the proclamation of our determination to have nothing to do with aiding either side that Mr. Sumner complains against. He says it was precipitate, premature, uncalled for, and hostile. Well, I believe it was necessary. It may have been issued two or three days earlier than it should have been issued. My excellent and my dear friend Mr. Adams had only just arrived, and perhaps it would have been better to let him get thoroughly at home in the Embassy-house in London before it was issued. But this is a mere matter of etiquette, and I cannot suppose a matter of that kind would really be thought to be a reason for disagreement between two great nations. That it would have been necessary within a few days I am perfectly sure. Just consider what was the state of things. There was this great war raging between these two portions of one country. The States of the South were in rebellion against the Union; there were a vast number of Americans—Southern Americans—in the Southern States and in England, *trying all they could, using every possible exertion to, by some means or another, drag us into that war.* It was our business to prevent their doing so if possible. How could that be done? Simply and solely by the Queen issuing her orders that we should take no part in the struggle. It is said it was a hostile act. Well, I don't think any one—I am quite sure Mr. Sumner

won't, and I don't believe any American will charge me with being hostile to the North. If there was one thing that I had longed for in the course of my life, it was that the North, representing the principle of freedom, should conquer the South, which represented the principle of slavery. I hope it is not an unpatriotic thing to say that I could hardly conceive of any struggle in which my own country would be engaged in which I should feel more earnestly than I did feel in that struggle in which our kinsmen—whom I look upon as almost our own countrymen—were waging war for freedom against slavery. Well, having that feeling as strongly as man could—I may have been wrong, but I must say, having that feeling—being most anxious to save the interests of the North, to save the Union—I most earnestly desired the proclamation, and did all I could to obtain it. In fact it so happens, as I stated last year in the House of Commons, that at that moment I had only just been returned by you; and although I was then an unimportant member, I felt it my duty—possibly because I was more alive to the question than other members, as I had watched it before—to put myself forward more than otherwise I could have felt I had a right to do, in putting questions to Ministers on the subject, and bringing it before them. And the real fact is that the first statement that there should be a proclamation issued was made, in answer to a question of mine, by Sir George C. Lewis, the then Home Secretary.

Why was it I asked that question? Why was I anxious for that proclamation? For this reason—that I knew the leaders of the South had sent over to England letters of marque, and I was afraid that, unless there were orders issued preventing it, privateers with letters of marque would sail from our ports without delay. “Well, but then,” Mr. Sumner would say, “it was your business to have declared these men pirates, and to have taken them up as pirates.” That was my first feeling; and I remember very well—as well as if it had been yesterday—considering whether I should not come forward in the House of Commons and ask that they should be treated as pirates. But I felt that this would be a strong measure to take, and that I should be sure of my ground before making the application; and I remember very well going to the best Admiralty authorities that I could consult, and, not being contented with that, of searching through the library of the House of Commons, and of looking over the opinions of writers on international law one after another, and especially of looking over the writings of the great international lawyer, Wheaton. I saw clearly, according to the principles of international law now acknowledged by civilised Governments, and especially advocated and enunciated by the United States, that when there was a war of insurrection between rebels and a government, any neutral country was bound to consider that to be a state of war, and could not look upon either party as pirates, and that they could not treat their own subjects who might aid either party as pirates, although they were bound to do all that they could to prevent those subjects from aiding them.

The reply that is made by Mr. Sumner to that—and I must state, if he will allow me to say so, and I would say it to him if he were here, that it was a reply that was not made at that time—is this, “Oh, there was war by land.” We do not deny it—and I think it would be difficult for them to deny it, considering the immense amount of courage, of resources, and of patriotism they have been obliged to show to conquer in that war. “There was war by land,” he said, “but there was no war by sea, and you made that war by proclaiming neutrality and recognising the South as a belligerent power.” Well, but really that is not the case. It is true that the South had her ports locked up, and that very few vessels got out; although it is a fact that our American friends do not seem to remember that the four first vessels that came out with the flag of the South to prey upon Northern commerce came out of Southern ports, and that they came out for a year before any vessel was built in England. And I believe that one of them—at any rate, a vessel—was adjudged by the North not to be a pirate, but to be a belligerent.

But putting that out of consideration, there was war upon water, or else what was the meaning of blockade? The blockade was an act of war—sealing the seaports was an act of war. Mr. Sumner says: “Do not consider the word blockade; we might have closed the ports instead.” But really this is playing with words. What was our position? We were carrying on a great trade with the South—a trade which was the life and bread of a large portion of our population. That trade was suddenly stopped—stopped by the blockade of the North—by the act of the North—the forcible act of the North; and I say it is vain and foolish not to allow that that was the act of a belligerent Power. Why, the first speech I made in the House of Commons was in the interest of the North against the South, to prevent—not the recognition of what actually did exist, the recognition of a war, and the recognition of belligerency, which was a fact—but to prevent the recognition of what was not a fact, and has never become a fact, I am thankful to say—the independence of the South.

And what was my greatest argument in speaking against that recognition? Why, that this blockade, which was the act of a belligerent power, was an effective blockade, and not a sham blockade. I will try to bring the question home to you. Imagine a case if you can do so—it is almost impossible—but imagine a civil war between England and Scotland; imagine Scotland in the hands of rebels, and the rebels in possession of the whole of Scotland—the Southern rebels had got possession of the whole of the south;—imagine, also, that England had kept possession of the navy, and that she was able to blockade the ports of Scotland, and that there was a great trade—as was the case between Scotland and America; and added to that—what would not exist—that America depended almost for her very existence upon some of the produce of Scotland. Suppose that England stops that produce going out, and declares a blockade, what should we expect America to do? Not to help Scotland—not to help us—but to be perfectly neutral, and to give orders that all the citizens of the

United States should be neutral. That is what we should expect under these circumstances; that is what we did in regard to America, and Mr. Sumner has no right to complain against that.

But there is another complaint that he makes—first, that we proclaimed neutrality; secondly, that we broke our proclamation, and he puts this complaint in very strong language. He ends his eloquent speech in these words:—"The truth must be told, not in anger, but in sadness. England has done to the United States an injury most difficult to measure. Considering when it was done, and with what complicity, it is most unaccountable. At a great epoch of history—most true that was, it was a great epoch—not less momentous than that of the French Revolution, or that of the Reformation, when civilisation was fighting a last battle with slavery, England gave her name, her influence, her material resources to the wicked cause, and flung a sword into the scale with slavery." Now I regret, (no one regrets more than I do,) that we did not hail that struggle as a nation, as a Government, in the same way as you and I would have hailed it; and, as far as we could have done, without insulting them with actual aid, which they would have felt an insult, that we had done our best to support them. It is not true that we flung our sword into the scale with slavery. There may have been *individuals in England who disgraced England* by taking the side of the slaveholder; there were individuals in the House of Commons—there was Mr. Roebuck who disgraced his name—his life, in which he had been fighting hard for freedom; there was Sir John Ramsden, who I dare say laments the disgrace he brought on this great Riding by the words which he spoke; but did those words ever fall without rebuke? Never. I wish we could say the same of all the words that are spoken against us, against England, in the House of Representatives, or in the Senate of the United States. Sometimes they do fall without rebuke; but I am thankful to say that words derogatory to America have never fallen without rebuke in either of our Houses of Parliament.

We have had champions—I am not going to speak of my own humble efforts—but there was Cobden, who has gone; there was Bright, who is living—who always rebuked these sayings—and America ought not to forget it. Then, again, there have been newspapers that took the side of the South. Well, there were newspapers, and very powerful and very able newspapers—your own newspapers, the newspapers of Leeds, many newspapers in London, who took the side of the North. And I will say this—there is a great newspaper in England, the *Times*, and there is a great newspaper in America, the *New York Herald*. There was a time in which the *Times* seemed as if it would fan animosity between England and the North. There was a time, and there is a time, in which the *New York Herald* seems to do the same. But we have this advantage, at any rate, that our great paper has seen the error of its ways, and their great paper has not. Well, but then they say if American travellers came to England, they could not go into a club at Pall-mall, they could not go into a drawing-room at Belgravia, without hearing some

reproach against their country. Well, there were drawing-rooms in which that was not the case; but, generally speaking, it was so. I grant it. But is it come to this, that Republican Americans are to judge of England by her fashionable clubs and her drawing-rooms? If they wanted to know what England felt, they, the Republicans, the men of the people, ought to have gone to the workshops of the people—and the hearths of the people. There they would have found in that workshop in Lancashire, which was no longer a workshop because of their war—by that hearthstone, which was cold and dreary, where there was hardly a meal that could be cooked because of that war—there they would have found their friends; and it is not fair for Mr. Sumner, or for any American to forget those friends, and merely to remember those fashionable men—who after all, did not guide the destinies of England.

I have talked about what individuals have done, but I feel that that is not what we really have to do with. But I am referring to it because our American friends so constantly talk about what individuals have done. But what they have to do with is what the Government has done. Well, you and we—we by your help—kept the Government straight, and the Government did not fling its sword on the side of slavery. It is true that Lord Russell, or rather the men who were acting under Lord Russell—(because it was not his doing)—*allowed the Alabama to escape*. There was, as I believe, *great neglect in allowing her to escape*; I believe there was a great mistake in allowing her refuge in British ports. You know that I did my best to denounce and expose that mistake; but I feel that I have some little right to complain against my friend, Mr. Sumner, when, in this great question and this great crisis of a great question, he quotes my words, as it were, against my own country, without remembering that those words were used for his country, and used with success for we did keep England, as I say, from breaking the neutrality. There was that great mistake upon the *Alabama*, for which we are willing to submit to arbitration, and to pay damages if the arbitrator—as I dare say he would—decided against us. But it must not be forgotten that although Lord Russell—or, rather, the men who professed to serve Lord Russell, and served him badly in that matter of letting the *Alabama* out—that Lord Russell, guided by experience, strained the law to keep the rams from going out.

But there is a far more important case than that. Mr. Sumner says we were guilty of half of that terrible war which they had to undergo. Well, there was a time at which their fortunes looked as though they were very dreary, at which I felt more fearful than I could venture to acknowledge—at which those patriotic Americans that I met felt more fearful than they liked to acknowledge; and at that time the ruler of France came like a tempter, and asked England, and tried to persuade England to join him in carrying out his plans of ambition upon the American continent, and in declaring on the side of the South. If England and France had done that—well, I believe that the North would still have conquered—such is the power of freedom and of

freemen—but her cost would have been quadrupled, aye quintupled. It was from that that the English Government saved her, acting according to the wish and determination of Lord Russell—for nothing would have induced Lord Russell to have aided the slave power—supported by you, by those of us who were the friends of America, and whom I complain of Mr. Sumner for now forgetting. He says the truth must be told. Well, the truth must be told; and I have told what I believe to be the truth, and I do not believe that any American will complain against me for telling it. They have not a monopoly of patriotism in America, and we have as much right to be proud of our country as they have of theirs. There is a time beyond which concession would be a crime, because it would be a sacrifice of that position amongst civilised nations which alone makes England able to do her duty.

But the truth may be told, and the truth will be heard. I have no fear of the future in this matter. I have been speaking more warmly than there was reason to do, more because I felt so much on the whole question that it grieves me to hear and to see those men for whom I have been struggling, and for whom I would have sacrificed almost anything, apparently misunderstanding my country, and forgetting their friends. But I have no fear of the future. The great aim of my life has been and will be—it is an aim which may well compensate for any political labour or political sacrifice—to see a firm and lasting alliance among all English-speaking people. Some persons will say that that is impossible—look at Ireland discontented, and America in a state of irritation. But I do not despair of that time. I look forward to it with the most confident hope. What have been the obstacles against it? There have been three. There was the oppression of Ireland by us; there has been slavery in America—a principle opposed to us; there has been our oligarchical government in England. All these three causes are removed. We are no longer oppressing Ireland; we are determined to treat her with justice. America has abolished slavery—and we in England have a Government by the people for the people—and depend upon it that mutual interests, mutual sympathies, common institutions, common language, ties of blood, will maintain the alliance between our countries. We shall be at peace; we shall go on prospering in peace, and our peace will eventually be peace for the world. I do not believe that war will arise out of this question. No; I believe there will never be war between England and the United States. And why do I say so? Because I believe that by men both in England and America it will be looked upon as a civil war; and I believe we have seen the last civil war amongst English-speaking men—the war in which the men of the North, fighting for the Union fought the battle of freedom against slavery. I believe that conquest of freedom, of peace-giving, justice-giving, and mercy-giving freedom, will bring peace to all men who speak the English language, and, as I say, that peace will eventually give peace to the world.

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## WHO MANNED THE ALABAMA?

Here is what an American paper says on the subject of the *Alabama*, which we preserve here—and much as we deprecated the appearance of an English yacht on the scene of her richly-deserved punishment, we could never believe that a pleasure boat could ever place herself in the position of a paid auxiliary in such work as that in which the *Alabama* met her reward, although it is said in a letter that the *Deerhound* was in fact acting as a tender to the *Alabama*. An account of her destruction will be found in our volume for 1864, July number.

The American paper says:—"The 'Boston Traveller' of the 15th ultimo says, One of the crew of this freebooter, the *Alabama*, is now on board the steamer *Virginia*, lying at East Boston. He says that the *Deerhound* was, in fact, a paid tender to the *Alabama*, that she had on board the chronometers and other valuables which had been stolen from American ships (for the thieves were not permitted to land them at Cherbourg), that a few days before the fight with the *Kearsage* she brought fifty men from Portsmouth, England, trained gunners, who had received their training on the British practice-ship *Excellent*, to work the guns; that these men, when the *Alabama* left Cherbourg, were stationed at the guns, and had entire control of them, for the officers knew very little, if anything, of gunnery, and that he thinks the *Alabama* fired three shots to one fired by the *Kearsage*. The *Alabama* was somewhat quick in her rolling, and hence why the firing was so rapid. The gunners could not elevate or depress the guns with any degree of accuracy, therefore they trusted to luck to hull the *Kearsage*, for their line firing was uniformly correct; but the shot generally passed over the *Kearsage* or among her rigging without doing much damage. On the other hand, he says, the firing of the *Kearsage* was very true; every time a shot struck the *Alabama* it made her tremble fore and aft, and towards the close of the action crash upon crash tore her almost in two amidships, when she filled and went down. She lost 47 men out of 212 with which she began the action. He thinks her powder was bad, her officers were fools, and the Englishmen who worked the guns too self-conceited to imitate the cool deliberation of aim that prevailed on board the *Kearsage* from first to last."

The Naval Committee of the United States' House of Representatives reported on the 12th of February a Bill to present Commodore Winslow and the Officers and Crew of the war steamer *Kearsage* the sum of 190,000 dollars as prize money, that sum being the estimated value of the *Alabama*, which was destroyed by the *Kearsage*. An amendment was adopted providing that no part of the money should be paid to an assignee of any mariner, and the bill was passed.

## NAVIGATION OF THE N.E. COAST OF LABRADOR.

(*Note, all Bearings are Magnetic.*)

*Cautions and Precautions.*—1. When navigating an ill-known coast, such as that of Labrador, take care if possible to have the sun behind you, as shoal water is better seen with the sun on your back than in your face.

2. The barometer is not much of a monitor on this coast. For five days it showed a height of 29.45, and when rising from this, wet and wind followed. It is generally low on this coast.

3. The rise and fall of the tide is regular. At springs the rise is seven or eight feet. At Indian Harbour, high water, full and change, is at 6.20.

4. The prevailing winds are from N.W. to S.W. off the land. Strong squalls of wind from north and N.W., lasting only an hour or two, are to be expected in August with an occasional thunder storm and heavy rain.

*Caution.*—The runs herein-mentioned have been but partially examined and require the utmost care in their navigation.

*Pilot.*—Eli Dawe, a fisherman of Bay Roberts, Conception Bay, Newfoundland, may be trusted for these harbours and runs, having (in addition to his former experience) been instructed in the pilotage. His wages are 10s. per day when under way, and 5s. at anchor.

## SAILING DIRECTIONS.

*From Occasional Harbour to Indian Tickle.*

1. From the Twins at the entrance of Occasional harbour to Round Hill island (eighty feet high) the course and distance is N.E. forty-one miles.

2. From Round Hill island to Isle of Pond's point, the course is N.W. by N. five miles:—passing westward of Emerald island (small and twenty-five feet high, with a long ledge of rocks to the S.E.), and having fourteen fathoms close to the point, and no bottom at twenty fathoms between the island and the point.

3. From Isle of Pond's point through Domino run, the course is N.N.W.  $\frac{1}{4}$  W., distance four and half miles, passing west of Spotted island (150 feet high), with soundings from five fathoms to no bottom with thirteen fathoms: then pass eastward of Entry island (about 120 feet high) with a rocky ledge (about ten feet high) on its S.E. part, and no bottom at ten fathoms: then pass west of Flat island (about eighty or ninety feet high) with a rocky ledge (about fifteen feet high) on its east side, and soundings from seven and a quarter to ten fathoms: then east of Little Entry island (about eighty feet high), having a shoal a short distance off it, soundings from seven and a quarter to ten fathoms; and west of Double island (about fifty feet high), as well



as a rock on which the sea breaks off Green island, soundings from six to twelve fathoms.

4. From Double island to Fox point the course is N.  $\frac{3}{4}$  W. distance two miles. Soundings from five to fifteen fathoms, rock.

In running through Downs channel give Spotted island a berth from the entrance of the run to the middle of the island, as it has a shoal off its S.W. point.

In these runs as a general rule, keep mid-channel.

*Directions from Indian Tickle (Harbour) to Greedy anchorage and Indian Tickle (Hamilton Inlet).*

1. From Indian Tickle, steer N. by W.  $\frac{1}{4}$  W. for Red island, passing west of three black rocks from six to twenty feet above high water, having a sunken rock about two cables N.W. of them. The soundings are from thirteen to sixteen fathoms, rock and coral.

2. From Red island steer N.N.W.  $\frac{1}{2}$  W., passing west of Halfway island (150 feet high) about midway between Greedy anchorage and Indian Tickle. Soundings in this run twelve to nineteen fathoms, rock.

3. The same course will lead between the Trickers (130 feet high) and Collingham (180 feet high) island. Soundings in this run twenty-two fathoms, stones, to twenty-five fathoms, rock. The last has three small islands off its north end. This course also leads west of Greedy reef (breaking) in soundings of fifteen and sixteen fathoms, stones and rock.

4. From Greedy reef steer N.  $\frac{1}{4}$  W., seven and a quarter miles for the Gannet islands and rock; passing close west of Gannet rock (about five feet above high water) with a dangerous breaking ledge running off N.W. The Gannets are a cluster of six islands including the outer Gannet; and are from twenty to twenty-five feet high.

5. From Gannet islands to pass west of Hens or Herring island, the course is N.  $\frac{1}{2}$  W., twenty-seven and a half miles, no bottom at sixteen fathoms. The Hens consist of three islands from eighty to one hundred feet high, with some outlying rocks and shoals.

6. From the Hern islands to the Duck islands off Indian Harbour, the course is N. by E.  $\frac{1}{2}$  E., four and three quarter miles. Soundings from fourteen to twenty-one fathoms, rock.

7. From Indian Head (Indian Tickle island) to Greedy reef is twenty miles. When entering Indian Tickle avoid a rock off White point, and a ledge off Indian point.

*Sailing Directions from Indian Harbour (Hamilton Inlet) to Cape Harrison or Webeck.*

1. From Indian island (east point) to Duncan passage, the course is E.  $\frac{1}{2}$  S., four miles. Soundings from ten to twenty-three fathoms, rock and coral.

2. From Duncan passage to Sloop island (or White Cockade), about

230 feet high, the course is N.N.E.  $\frac{1}{2}$  E., five miles, which leads to the middle of that island, clearing a breaking reef S.W. of Sloop passage; and another above high water (heavy break) to the S.E. of Sloop island; passing between Sloop island and Cave island (200 feet high with a large cave on its north head) to the S.W. of which is Sloop Harbour.

3. From midway between Sloop island and Cave island, the course to Quaker hat reef (about ten feet above high water) is N.  $\frac{1}{2}$  W., ten and a half miles, leaving an island to the west called Teapot (about forty feet high); about three quarters of a mile to the north of this is a reef heavily breaking, passing Holten island to westward (250 feet high) and Quaker hat island (about fifty feet high) and reef to the eastward.

4. From Quaker hat reef to Cape Harrison the course is N.  $\frac{3}{4}$  W., twenty-three and a half miles, passing Tinker island to westward. This is a rugged island about seventy or eighty feet high, with small islets off its north and south sides; then Bear island (150 feet high) which is two and a half miles from Cape Harrison.

5. Throughout the run of thirty-eight miles, the soundings are pretty regular, averaging from fourteen to twenty-three fathoms, rock, stones, or coral: a cast of ten fathoms in the Sloop passage was the least water.

6. The current runs from northward with an indrift to all the bays; unless the wind be fresh from S.E. or south.

#### *Sailing Directions from Webeck to Aillik Harbour.*

1. From Smoky island off Webeck Harbour to Ragged islands (highest 280 feet), the course is N.W., nine miles; no bottom with sixteen fathoms.

2. From Ragged islands to Kydylcaliawit islands (about 180 feet high with a bare rugged north face) the course is north, twenty-six and a half miles, passing westward of two rocks (about ten feet high) with a breaker at their N.W. end, and Annowyak island to the westward (about 150 feet high). In this run the depth of water is from thirteen fathoms, rock, to sixteen, and off the rocks no bottom at eight fathoms.

3. From Kydylcaliawit island to the entrance of Aillik Harbour, the course is N.W. by W., ten and a half miles, passing Nowyaktiklut (or Gull) island (about 250 feet high), with a portion on its north side nearly detached. Between Kydylcaliawit and Nowyaktiklut islands, the soundings are sixteen fathoms, rock, and between the latter island and Aillik entrance are thirteen to twenty-seven fathoms, principally rock. The flood tide sets into the bays.

#### *Sailing Directions from Aillik to Hopedale Harbour.*

1. From Aillik to Drumawatwaksit island (a small flat island about fifteen feet high) the course is N. by W.  $\frac{1}{4}$  W., distance, twenty-three

and a quarter miles, passing close to an irregular rocky island about twenty feet high to the west; also Gull island and Irmavit island (about 250 feet high).

2. From Drumawatwaksit island steer N.N.W.  $\frac{3}{4}$  W. for five miles, passing eastward of a rocky flat ledge (eight to ten feet high), having rocks and a breaker off its S.E. end, with very irregular bottom off it from six to eighteen fathoms. Soundings in this run vary from seven and a half to twenty fathoms.

3. From the ledge of rocks steer N.W.  $\frac{1}{2}$  W. three miles for the Narrows. In this run soundings are from eleven to thirty-seven fathoms, rock.

4. From the Narrows steer N.W. by W.  $\frac{1}{4}$  W. three and a half miles for Kingitok island (about 180 feet high), a lump of dark rock appearing in the form of a sugar loaf (and very conspicuous at a distance), passing two bare islands about forty feet high to eastward, leaving a breaker off their S.E. end, and a flat rock about nine feet high to westward, having a rock and breaker off it. Soundings from eighteen to thirty-four fathoms, rock.

5. From Kingitok to the entrance of Hopedale harbour the course is N.W.  $\frac{3}{4}$  W. eight and a half miles, the depths fifteen to twenty-six fathoms, rock.

6. Between Inmavit and Nowyaktikiluh islands a shoal of seven fathoms was found; the depths between the islands ranged from seven to twenty-nine fathoms, rock.

7. A strong flood tide was found setting into the bays. The flood sets into them stronger than the ebb sets out of them.

Positions and variations on the N.E. coast of Labrador, resulting from observations by H.M.S. *Gannet*, 1867.

Places.	Latitude North.			Longitude West.			Variation West.		
	°	'	"	°	'	"	"		
Indian Tickle .....	53	34	18	55	59	51	39	25	Note.—The latitudes were obtained by Sun's Mer. Alt. and longitudes by Mer. distance from Halifax.
Indian Harbour .....	54	26	56	57	12	44	40	44	
Webeck.....	54	41	27	58	1	51	42	47	
Hopedale .....	55	27	4	60	11	49	42	20	
Round Hill Island ...	53	25	18	55	36	6	36	43	
Occasional Harbour and Twin Rocks ...	52	48	0	55	50	0	38	0	
Aillik.....	55	9	0	59	5	0	42	0	
St. John's, Newfoundland .....	...	...	...	...	...	...	30	20	
Halifax.....	...	...	...	...	...	...	20	42	
							21	0	

## THE SQUADRON OF SHIPS OF THE ROYAL NAVAL RESERVE AT SEA.

ENGLAND has her Naval Reserve at sea, and taking them "all in all," she has good reason to be proud of them. But there is more than this with which she may well be satisfied. That Reserve enrolled the names of seamen who were unaccustomed to the routine of duty on board Her Majesty's ships. Not only unaccustomed, but many of those duties were entirely new to them, and again, we say England has good reason to be proud of them. So much for her Reserve, and there is still another feature belonging to the present cruise of the Reserve in the fact that the First Lord of the Admiralty (and we may add, who is no professional man) has himself gone to sea with them, and flies his flag from the mast head of one of the principal ships. The Right Hon. H. C. Childers, the First Lord of the Admiralty, accompanied by Admiral Sir Sydney Dacres, has embarked with the squadron to form his own opinion from his own observation, and this we may add, unprecedented as it is, is another good sign with which England may well be satisfied. Disparaging remarks seem to be found in professional journals concerning the efficiency of the men of the Naval Reserve, but their authors, although they may know that six months will make a soldier, could not say how many are required to make a sailor. Knowing, as we well do, what sailors are, we would at any time prefer a sailor half made to a landsman, and the Naval Reserve seems to be formed of the best of this portion of the salt water professionals.

Our space is much limited, but we make room for a brief account of the first few days of this cruise, to give our own readers a general idea of the ships and the men—the former being the guard ships at our different stations, and the men, their crews forming one half and the other formed by the Reserve. The following account is condensed from the *Hants. Telegraph*.

### *The Cruise of the Reserve Squadron.*

"We take the following admirably written account of the Reserve cruise from the *Times* :—'It blew very hard, especially in squalls, in Portland Roads during Friday night, the 14th inst., and early on Sunday morning. When, however, the *Agincourt*, as the flagship of the fleet, 'made daybreak' both wind and sea had gone down considerably, although there remained plenty of both. At four a.m. 'all hands' were called. Cables shortened in for the start seawards, and steam got up in the boilers. A bitterly cold wind from the E.S.E. drove right in upon the roadstead from the Channel. It was as disagreeable a morning for the month of May as could be well conceived; but among the first on the poop of the *Agincourt* to witness the start of the fleet were Mr. Childers, with his First Naval Lord (Vice-Admiral Sir Sydney C. Dacres); Captain D. Seymour, A.D.C. to the Queen, private secretary; and Captain George Willes, of the Coastguard and Reserve Department at the Admiralty. At 5.30 all the ships weighed,

and half-an-hour later were all outside the breakwater, under steam at half-boiler power, and taking up their positions in two divisions. This was soon accomplished, and the fleet then steamed east of the Shambles Shoal. All had top-gallant yards aloft, and at eight a.m. the fleet had steamed into the desired position eastward of the Shambles Shoal, and all made plain sail. It was the first time the 'scratch' crews of the fleet had been aloft, and it would be unfair to men so situated to say that [any one ship appeared to get her canvas set more quickly or smartly than another.

"The officers of the fleet all unanimously declare that the men of the Royal Naval Reserve have taken to their duties on board with surprising quickness, and show a remarkable readiness to submit to discipline. Admiral Dacres gave his opinion on the first day at sea by saying that 'he never saw a finer body of men than was then being mustered on the *Agincourt's* quarter-deck, and he could not say which he liked best—the Reserve or the Coastguard.' After all had set canvas to top-gallant sails the course was changed to a little south of west by compass, which would carry the fleet down Channel on a line about ten miles south of Star point, and the ships bowled away merrily in two grand parallel lines right before the wind. During the afternoon the fleet changed form of sailing to 'line abreast to port and on the *Agincourt,*' and afterwards resumed its old form of two lines, each in Indian file. There was a great difference in the speed of the ships when thus running nearly dead before the wind, the *Duncan* out-running all of the lee line with three topsails lowered on the caps and reef tackles drawn out.

"As the light faded into night, and the ships, with the green and red lights at their bows sparkling out over the sea, heaved up strongly under the long-swell found west of the Start, the effect was most picturesque. The sails of the ships wanted but little work from the crews, as the ships ran nearly dead before the wind, which by this time had very much moderated. The bands on board were discoursing sweet music between decks as the officers sat down to dinner; the men were enjoying their pipes previous to hammocks being piped down, and thus passed pleasantly enough the first 'Saturday night at sea' in its early hours with the Reserve Fleet. The official return of the numbers of Coastguard and Royal Naval officers and seamen on board the ships of the fleet is as follows:—Total number embarked—Coastguard, sixty chief officers and 1,675 men; Royal Naval Reserve, twelve lieutenants and 1,700 men.

"The wind fell to nearly a calm during the night, and heavy rain fell early on Sunday morning. As soon as the ships could be well distinguished through the rain and the mist, the slower of the line-of-battle ships were plainly distinguishable from the others of the port line by their sails piled on aloft and aloft in their endeavour to keep place in the line with the faster going ships. Between nine and ten a.m. the wind came out in a nice little breeze from the north-west, veering out more westerly as it gained strength, and bringing the fleet close-hauled on the starboard tack. The day, as Sunday, was observed

by the fleet, as far as possible on board ships at sea, as a day of rest. It was also a 'red letter day' for the Reserve Fleet, as I believe this cruise is the only instance in which a First Lord has commanded a British fleet at sea in person, and also attended Divine service on Sunday on board his own flagship. Perhaps I omitted mentioning in my last hurriedly-written letter from Portland Roads that on the embarkation of Mr. Childers there, Rear-Admiral Key hauled down his flag and ordered the Admiralty ensign to be hoisted in its stead. In consequence Mr. Childers is actually in command of the fleet, and will remain so during his stay with it. By noon the atmosphere had perfectly cleared, with just enough wind prevailing to keep all the vessels' sails well filled, the fleet being close hauled and heading about S.W. The spectacle was really magnificent, as the two lines of ships, with their white sails from courses to royals, were lighted up with bright sunshine, and the ships heeled over gracefully on the gently heaving sea.

"At six p.m. signal was made for the fleet to tack in succession, in the two lines in open order, at four cables' length distance; all plain sail was being carried to royals, and the light winds had freshened a little during the previous hour and gave the ships plenty of way upon them to perform the manœuvre. The manœuvre is very effective at sea with a fleet as large as the present one, but it will be better executed on the second attempt of the Reserve Fleet, one or two of the commanding officers putting their ships about rather out of position. The fleet remained on the same tack during the night until five o'clock on the following (Monday) morning, when signal was made to steer a course N.W. for a rendezvous on Jones's Patch, from the fleet's then position, S.W. of the Scilly Islands.

"At eight a.m. the fleet, in two lines, under moderate canvas, was bowling steadily along over the 'Admiralty Patch' shoal, in line with the westernmost point of Scilly, with the wind on the port beam and at good full sail strength, looking straight over towards the coast of Ireland, to which, either at Bantry Bay or Queenstown, the fleet would have a short road and a fair wind under the existing conditions of the weather. During part of the previous night, and previous to daylight, the weather had been unpleasantly cold, with occasional heavy showers, but after the fleet had got clear of the Scilly Islands the sun came out brightly and rendered the state of things on deck fresh and invigorating. On the long swell that rolled in from the Atlantic the ships rocked languidly like a school of sleepy whales. About midday signal was made to the *Donegal*, *Mersey*, *Black Prince*, and *Cadmus* to raise screws, make sail to windward, and try rate of sailing, the four vessels representing four distinct types of ships. The *Mersey* started close to leeward of the Admiral, under all plain sail to royals, dipping her bows until she buried her hawse-pipes in the sea, and on rising again nearly showing her forefoot. She appeared to be kept too full. The *Black Prince* came up from her station in the line on the weather quarter of the Admiral under her three courses and fore and main top-gallant sails, and hung there dead for some time, making

a long attempt to set her royals with all her other sails shaking. The *Cadmus* was following with her royals for some time, but seeing the *Donegal* coming up rapidly, beautifully sailed, she took the alarm, filled her sails, and sailed away splendidly, taking a long lead of all. Soon afterwards a rain squall, coming down upon the fleet, brought with it a northing of the wind, which gave the *Mersey* the advantage over the others not gained by mere sailing under fixed conditions, and signal was accordingly made for the four ships to cease chasing and take up their positions in the two lines.

“During the day the crews of the several ships of the watches off deck were drilled at divisional quarters and in rifle and cutlass drill. I can only, of course, speak of the appearance of the men on board this ship, but here everything passed off with spirit and alertness on the part of every one that came under my notice—Coastguard or Naval Reserve man. Both Coastguard or Naval Reserve man have here, however, as they have in all the ironclads, to learn a gun drill of which neither knew anything previous to their present cruise. They have been drilled at their several ports on board such ships as the *Duncan*, *Donegal*, or *Mersey*—ships carrying ordnance that is now quite obsolete. All the four ironclads carry the new naval gun of 6½-ton, and the flagship also carries four of 12-ton. Now the drill with this ordnance is totally different from the gun drill of unarmoured ships on board which the Naval Reserve and Coastguard men have been trained, and their work in that respect was on this their first day entirely new to them. On board the *Agincourt* there is, fortunately for the men, an admirable drill master in Gunnery-Lieutenant Martin, and under his sharp incisive mode of instruction, administered with wonderful tact and consideration, the men picked up their new drill wonderfully. In the new cutlass exercise the Naval Reserve men exhibited a proficiency that rather surprised many who saw them. In great gun drill, as with rifle and cutlass, the men appeared to fall naturally and easily into their work, and not languidly, but with the most admirable spirit. Up to this time fires had been kept alight on board the ships to meet any emergency, but the *Agincourt* was the only vessel of the fleet that had made much use of her screw, and her rate ranged as low as from ten to sixteen revolutions per minute. In a three hours’ carefully-conducted trial, with the screw making fifteen revolutions per minute, the consumption of fuel in the *Agincourt’s* stokehold was found to be rather under one ton per hour, and at this very low rate of speed the engines worked with extraordinary smoothness and regularity. The day’s work with the fleet may be said to have closed with sail drill in reefing topsails. Two separate reefs were taken, the times of each being noted from the moment of the men going aloft to the fair hoisting of the topsails again. Naval Reserve and Coastguard seamen only were on the topsail yards, the seamen belonging permanently to the ships taking the upper yards.

The time occupied by each ship was as follows :—

FIRST REEF.				SECOND REEF.			
		M.	S.			M.	S.
<i>Agincourt</i> .. .. .		5	0	<i>Agincourt</i> .. .. .		3	45
<i>Duncan</i> .. .. .		3	15	<i>Duncan</i> .. .. .		4	20
<i>Black Prince</i> .. .. .		5	15	<i>Black Prince</i> .. .. .		4	25
<i>Valiant</i> .. .. .		2	30	<i>Valiant</i> .. .. .		3	5
<i>Hector</i> .. .. .		2	30	<i>Hector</i> .. .. .		2	35
<i>Mersey</i> .. .. .		4	0	<i>Mersey</i> .. .. .		4	55
<i>Royal George</i> .. .. .		5	0	<i>Royal George</i> .. .. .		5	5
<i>Donegal</i> .. .. .		5	30	<i>Donegal</i> .. .. .		5	5
<i>Scylla</i> .. .. .		5	15	<i>Scylla</i> .. .. .		5	0
<i>Cadmus</i> .. .. .		5	15	<i>Cadmus</i> .. .. .		4	0
<i>St. George</i> .. .. .		13	0	<i>St. George</i> .. .. .		5	5
<i>Trafalgar</i> .. .. .		10	15	<i>Trafalgar</i> .. .. .		11	0

## THE PACIFIC RAILWAY.

THIS great undertaking we conclude has by this time been completed, notwithstanding the interruption to which it has been subjected from snow. An account from San Francisco dated 27th of February, says, Since the departure of the last regular mail packet on the 13th, the letter mails from the Atlantic States have arrived irregularly owing to the continued interruptions from snow storms on the Rocky Mountain range. To-day's *bulletin* states "that the road has been blockaded by snow 240 miles east of Salt Lake for ten days," and that no trains "had been in or out of the Wasatch since the 12th of February." The latest letters from New York or Boston are to the 5th or 6th of February. The railroad companies will undoubtedly be able, after this winter's experience, to guard against lengthy delays from snow or any other cause.

But the following from an American paper speaks favourably of the great enterprise which we shall hereafter find working wonders. It would appear that the Panama railway already exhibits some effect of the great line by the following paragraph. Had it anything to do with the failure of our line *via* Panama to Australia so auspiciously commenced as appears in our number for February last. It is said, Owing to the falling off of the travel *via* Panama, the Pacific Mail Company will dispatch only three steamers a month after the 1st of April. The days of departure have not been announced, but they will probably be the same as formerly—the 10th, 20th and 30th of each month. Though the travel by steamer has decreased, the freight business is largely on the increase, and each vessel is crowded to its utmost capacity at high rates of freight.

As the great railroad, which is to connect New York with San Francisco by an iron band 3400 miles in length, approaches completion, the eyes not merely of those living along its line, but of travellers in



remoter parts of the world, are turned towards it. At the last advices the Union Company had reached Ogden city, near the head of Salt Lake, 1250 miles from Omaha; while the Central Company, on the 28th of February, was within 62 miles of Monument Point, and only 162 miles from Ogden city. This gap of 162 miles will probably be finished within thirty days, so that by the first of April, or at the farthest the 15th, trains can run through from Sacramento to Omaha.

The fare during the past winter has remained at 284 dollars in greenbacks from San Francisco to New York, which includes staging of several hundred miles. After the completion of the road the fare is to be reduced, and will probably not exceed one hundred dollars in gold from San Francisco to Omaha, though the price has not yet been fixed. While for second-class passengers, we have the authority of President Stanford that it will not exceed *thirty dollars* between the same points,—a distance of about 2000 miles. Travellers will probably not find the arrangements so complete as to afford comfort before May or June, and those who undertake the trip earlier must expect to put up with discomforts.

Soon after the completion of the road, it is proposed to make a grand pleasure excursion trip, for which several very superior hotel and sleeping cars are now being constructed. Great preparations are being made for this celebration, to which President Grant and the Governors of all the States will be invited. If well carried out, it will be one of the greatest jubilees ever held in America, as it will number at least one thousand guests, who will be conveyed in forty-five luxurious cars, which will start from Omaha some time in July.

Another excursion is being planned, to take place also during July, to show to the world how rapidly the through trip from New York to Sacramento can be made. Mr. Durant, the Vice-President of the Company, proposes to leave New York or rather Jersey city at six o'clock on the morning of July the 1st, or whatever day may be fixed on, and arrive in Sacramento at the same hour on the 4th—making the entire passage in *seventy-two* hours, or an average of forty-four and a half miles per hour the entire distance.

This extraordinary speed can only be accomplished by having the track between New York and Omaha kept clear of all trains that interfere or cause delay. But it can easily be effected by the help of the telegraph and by stationing men at every switch and crossing throughout the entire route, which will probably be done. From Omaha to Sacramento less difficulty will be met in planning for it. Frequent changes of locomotives with fresh supplies of fuel and water will also be necessary. But this can be arranged so as not to cause much delay. The train will consist of but one locomotive, tender, and passenger car, with the Vice-President and a few invited guests.

The object in making this extraordinary excursion is to demonstrate to Europeans and all concerned what speed can be given to the mail service across the Continent, and that the shortest route from London to China and Australia will be over this road. If successfully accomplished, London papers will be delivered in San Francisco within

thirteen or fourteen days of the date of publication. Should the China steamer leave San Francisco the day that this train arrives, London papers may be delivered in Yokohama in thirty-three days, and in Hong Kong forty days after publication.

When the railroad is finished, travel will naturally turn to it in preference to any other route, and we shall probably live to see the day when a trip home *via* Panama will be as unusual as that *via* Cape Horn now is. "Steamer day" will then be an event of the past, and the luxurious cabins and staterooms, of the Panama steamers will be as deserted as are those of the Cape Horn clippers, which are tenanted only by an occasional invalid or tourist seeking health or pleasure. Times change and we change with them.

By our English papers the following reckoning has been made. We shall see hereafter with what truth.

According to a New York paper trains will run on the Pacific Railroad from New York to San Francisco in 6 days 17½ hours. The trip from Great Britain to San Francisco will occupy 17 days; to the Sandwich Islands, 26 days; to Japan, 34 days; and to Hong Kong, 40 days. It is rumoured that a steam packet line will be established between Australia and San Francisco, *via* Tahiti and Honolulu, which will perform the voyage in 28 days, so that a journey might be made from Great Britain to Australia, *via* San Francisco, in 45 days.

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### THE COMING SHIP.

We have seen a model of what is probably "the coming" ship of this age. It is to be of the same size as the *Great Eastern*, except that instead of twenty-eight feet it will draw only eighteen feet, and it will carry proportionally less tonnage. It is designed to carry four times as many passengers as any present style of ship, and to substitute for bunks Christian beds; it will also give four times the space to a stateroom. The present mode of bunking passengers is unworthy of the age. Sea-sickness, if preventible by construction, should be rendered obsolete. This desideratum is attained in Thomas Silver's coming ship; it is secured by the proportions of the ship, and by their being thirty feet less of the hull out of water than in the *Great Eastern*; but the motion is rendered almost imperceptible by a new device. The state rooms, instead of being at the outside limits of the vessel, are amidships: that is, along the centre line of the ship, where the roll is scarcely perceptible. The saloon is to be 500 feet long and clear of obstructions. It is not for dining. Instead of a public table there are to be two competing restaurants at the extremities adjoining the saloons. The ship will sell passage only, the board being payable as meals are ordered. It is contemplated to carry second-class passengers and third-class in the same way. The present first-class bunks will be for third-class berths.—*San Francisco Times*.

## Nautical Notices.

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

## PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 275.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist. in Mls.	[Remarks, etc. Bearings Magnetic.]
21. Kwak-Hoek	Maas River var. 18 $\frac{1}{2}$ W	Woorne Is.	F.	34	9	Est. 27 Jan., 1869. R. entr. visible from N.N.W. $\frac{1}{4}$ W. round by North and East to S.S.E. $\frac{1}{4}$ E. Lat. 51° 49' 9" N., Lon. 4° 5' 5". See Note 21.
Ooltgensplaat	Altered from jetty to	East of Fort P. Frederick	...	...	...	Altered position on 4th Dec., 1868.
Halskov Reef	Great Belt	Black and white Bell Buoy	...	...	...	In lieu of Cask with staff & broom
Libau	South jetty of Harbour	Var. 9 $\frac{1}{2}$ ° W.	F.	26	6	Established 12th Aug., 1869. <i>Red.</i>
22. Trouville Port	Tide Signals	La Cahotte	...	...	...	Shewing least depth by French system to $\frac{1}{2}$ metre.
23. River Clyde	Donald's quay	North bank	...	24	...	Between Bowline and Erskine ferry to shew the Channel bed; red and white squares.
Fort Island	Derby haven entrance	... ..	...	...	...	Exhibited only during fishing, 12th Aug. to 10th Oct.
24. Funchal Rds	Off Loo rock	S. $\frac{1}{4}$ W. from Loo Rock	...	...	...	A wreck buoy, <i>red</i> , requires a berth of $\frac{1}{2}$ cable.
25. Off Grado	Trieste Bay	Near Port Primore	F.fl.	30	10	Intended, red flash every 2 minutes vessel in L. 45° 40' N., L. 13° 23' E.
Tipaza	Algeria	Ras el Kalia	F.	102	4	Est. 1st April, 1869, <i>green</i> , Lat. 36° 35' 8" N., Lon. 2° 28' 2" E.
26. River Exe Buoys	In conformity	with Notice No. 7.	...	...	...	See Note of alterations No. 26.
Clevedon Pier Head	Bristol Channel	West coast	...	27	...	Est. May, 1869. From it Newport Lt. N.W. $\frac{1}{4}$ W. 7 $\frac{1}{2}$ miles, Eng. and Welsh grounds W.N.W. 3 $\frac{3}{4}$ , Flat-holm W. 10 $\frac{1}{2}$ .
Crosby Light V.	Liverpool	Distinguishing at the beacon	...	...	...	Lights. See Note 26a.
27. Simpnas Klubb	Baltic Sweden	...	F.	...	...	Established 1st September, 1869, Lat. 59° 53' 7", Lon. 19° 5' 1" E.
Naskubben Korso	Off Bjorko Sando Channel entr.	Alter. to <i>red</i> from R to 56° 0' 5" 14° 51' E.	F.fl.	...	...	On 1st September, 1869. Ditto.
Hano Island	South of Carlshamn	...	F.fl.	...	...	Ditto.
28. Nosima Point	Japan, Yeddo Glf.	Near Mela Head	F.	69	9	Lat. 34° 53' 3" N., Lon. 139° 51' 4" E. In direction of the Mela rocks will be visible 16 miles.
Point Kauson -Saki	Japan, Yeddo Bay	West side	F.	170	14	Est. 11th Feb., 1869. Lat. 34° 15' 7", Lon. 139° 44' 3" E. Var. 2 $\frac{1}{2}$ W. 1869.
29. Pensacola	Changed from 4th	to 1st order	R.	...	...	1st April, 1869, flashing once a minute.
Windmill Point	Chesapeake Bay	Rappahannock R.	...	...	...	Re-established.
30. Cape Bianco Shoal	Off Elba, P. Ferrajo	Has now a Bell buoy	...	...	...	Established 1st May, 1869.
Black Sea Adjigiol	Light vessel repairing	replaced by another	...	...	...	Carrying 3 lights in triangular form in her position upper 43 and lower 36 feet above the sea.

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

**NOTE No. 21.**—*Directions.*—On entering the channel from seaward, the lights of Goedereede and Kwade-Hoek will serve as a guide, and when the Noorder Pampus is passed, steer for the light of Kwade-Hoek, in order to sight the light of Hellevoetsluis.

The two last mentioned lights in line lead nearly midway between the black buoys Nos. 3 and 4 in the Bokke Gat.

**NOTE No. 26.**—**ENGLAND—SOUTH COAST.**—*Alteration in the Colour of Buoys—River Exe.*—With reference to Notice to Mariners No. 7, dated 16th of January, 1869, respecting an alteration in the colour of the buoys marking the entrance of Exmouth harbour, the Trinity House, London, has given Notice, that in conformity therewith, the buoys marking the Port side of the entrance to the river Exe, have been coloured *black and white in vertical stripes*, and the Fairway buoy has been coloured *black and white in horizontal bands*.

The buoys on the Starboard hand remain *black* as before.

**NOTE No. 26A.**—**WEST COAST—LIVERPOOL.**—*Distinguishing Light for Crosby Light-Vessel.*—The Dock Office, Liverpool, has given Notice, that from the 1st day of June, 1869, the Crosby light-vessel will exhibit two distinguishing white lights, in addition to the single white light, as at present; the arrangement of the lights will be as follows:—

The principal light being at the mainmast head, as at present, the distinguishing lights will be placed, one in the fore part of the vessel, the other in the after, both at a height of about 9 feet from the deck.

When the vessel is seen broadside on, three lights will appear in the form of a triangle, but when the vessel is seen end on, the lights will appear as two lights.

The distinguishing lights will not be visible except within the channels, their purpose being, that on passing the Formby light-vessel, and shaping a course for the Crosby channel, the Crosby floating light may be readily distinguished from the Crosby shore light.

[*All bearings are Magnetic. Variation 21 $\frac{1}{2}$ ° Westerly in 1869.*]

**Amrum Bank, —North Sea.**—The Governor of Helgoland has transmitted the following information relative to shoal water on the Amrum bank, off the coast of Slesvig, as obtained from Captain Grapow, of the Prussian Royal Navy, engaged in a survey of that coast.

A shelf, with only 3 $\frac{1}{2}$  fathoms on the shoalest part, has been found near the southern end of this bank. The shelf extends for about one mile in a north and south direction, the bottom being composed of red speckled coarse sand, intermixed with small stones.

From the shoalest part, which is in lat 54° 37' N., and long. 8° E., the mill on Amrum Island bears E.  $\frac{3}{4}$  S. In clear weather this mill will be seen just open to the northward of the Sattel Dune (Saddledown).

(*All Bearings are Magnetic. Variation 17° 40' Westerly in 1869.*)

**SOUTH PACIFIC OCEAN, FIJI ISLANDS.**—The following account of a detached coral reef off the North coast of Viti Levu, has been received from Navigating Lieutenant George E. G. Jackson, of H.M.S. *Charybdis*, Captain A. McL. Lyons.

(*All Bearings are Magnetic. Variation 10° 20' Easterly in 1868.*)

**Charybdis Reef.**—When on the passage from Raki Raki on the north side of Viti Levu, to Sandalwood bay in Vanua Levu, H.M.S. *Charybdis*

passed a coral reef not laid down on recent charts. This reef, which is just awash, is between two and three miles in length, crescent shaped, in a N.E. and S.W. direction: the middle of it in W. by N.  $\frac{3}{4}$  N., (N. 70° W.) about nine miles from the North point of Annan Island, and about the same distance N. by E. from the anchorage of Raki Raki.

*Solomon Islands.*—A reef to the southward of the Solomon Islands, on which the ship *Neptune* was wrecked in August, 1868, is in lat. 12° 54' S., long. 161° 45' E.

The foregoing was communicated to the Port-Master of Brisbane, Queensland, by Mr. Robert Schofield, Master of the *Neptune*.

*Easterly Current on the Coast of Chili.*—An Easterly current of a mile an hour or more (is stated by Captain R. C. Mayne, C.B.) prevails between Chiloe island and Lota point; its direction appears to vary between N.E. and S.E., according as the wind is northerly or southerly, but it is always towards the land. Several vessels have been placed in dangerous vicinity to the shore by its effects.

In June, 1868, H.M.S. *Nassau* unexpectedly made Tucapel point, having experienced a strong E.S.E. current, the wind at the time being from N.W.

A vessel standing in for this coast should never run into a fog, as the fog bank seldom extends more than four or five miles from the land.

**MILo HARBOUR.**—*Monopodro Rock.*—This small conical-shaped rock, about fifteen feet above water, is within two cables of the eastern shore at the entrance to Milo harbour. It lies nearly midway between Lakida and Bombarda points, in the position where a three fathom patch with deep water round is shown on the chart of the island.

The rock is steep to, and may be passed at the distance of half a cable.

WE have received the official lists of the Lighthouses and Lighted Beacons and Floating Lights of the Atlantic, Gulf, and Pacific coasts of the United States, as well as that of the Northern and North-western lakes of the United States, corrected to January the first of this year. The former contains 383 on the sea coasts, and the latter 124 stations on those of the lakes. It is evidently got up with great care and contains much important information.

CHARTS, ETC., PUBLISHED BY THE HYDROGRAPHIC OFFICE, ADMIRALTY, in May, 1869.—Sold by the Agent, J. D. Potter, 31, Poultry, and 11, King Street, Tower Hill, London.

2050 DEM = 2.75. England, South Coast—Spithead, and its approaches from the Eastward, various. 1869. 2s. 6d.

483 a b DEM = 0.5 West Indies. Trinidad Island and Paria Gulf, with Views. Commander Chimmo, R.N. 1868. Two sheets each. 2s. 6d.

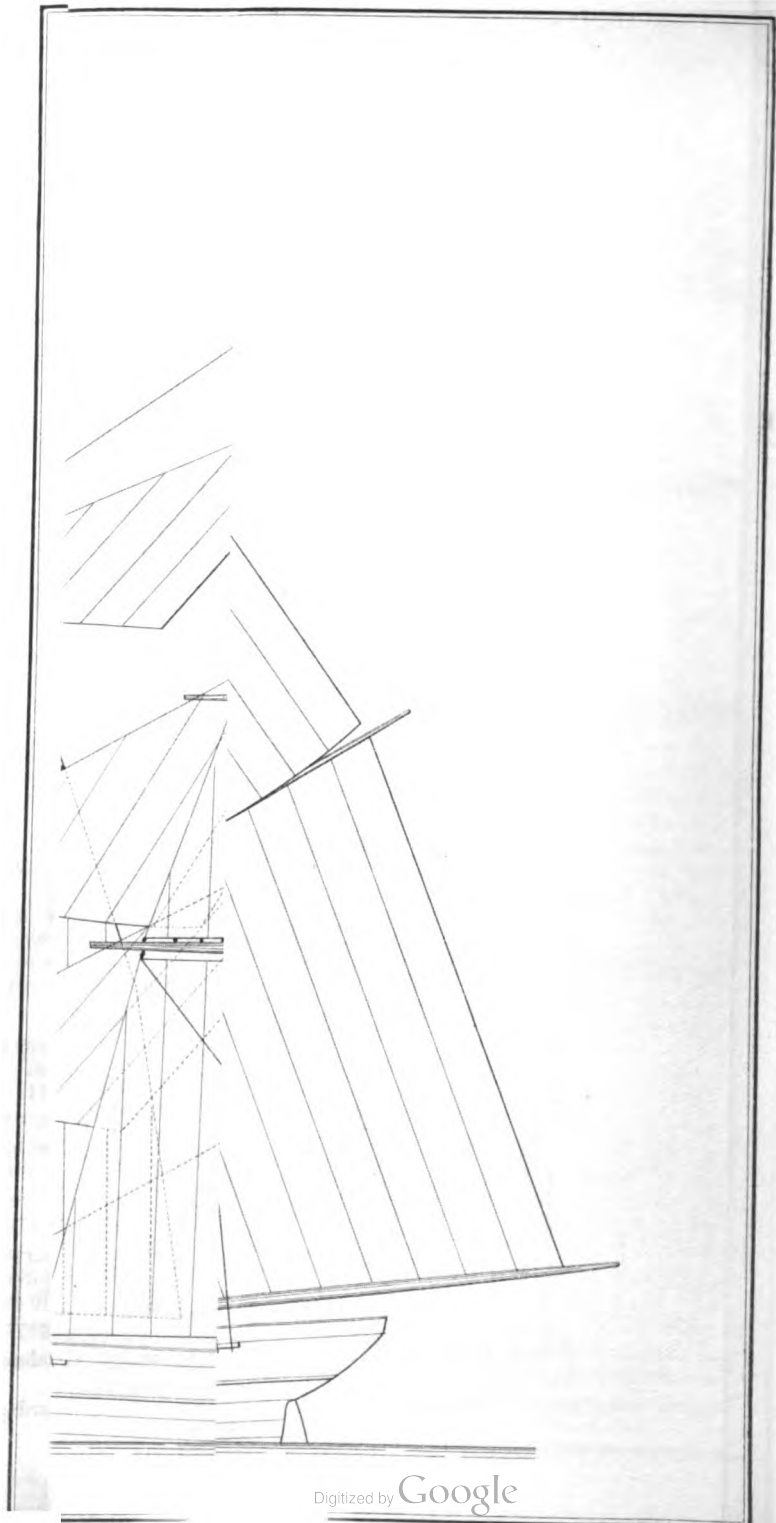
574  $\frac{DE}{2}$  m = 4.0. Chile, Coquimbo Bay, and Herradura Port. Captain Mayne, R.N., C.B. 1868. 1s. 6d.

2483 DED = 0.20. Indian Ocean, with Magnetic curves, and Western part of the Pacific Ocean, various. 1869. 3s.

1752  $\frac{DE}{2}$  m = 1.0. Australia, South Coast—Adelaide Port. Commander Hutchison, R.N. 1868. 1s. 6d.

EDWARD DUNSTERVILLE, *Commander, R.N.*  
*Hydrographic Office, Admiralty, 19th May, 1869.*

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THE  
NAUTICAL MAGAZINE

AND

NAVAL CHRONICLE.

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JULY, 1869.

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FORBES'S LAST NEW RIG FOR SHIPS.

[In the course of this work, we have seen a change in the sails of our merchant shipping, which from its extended adoption has evidently answered its intended purpose. The same inventor (Mr. R. B. Forbes, of Boston) has now sent us another child of his brain, and one which, great as the former was in the arrangement of a ship's sails, seems likely to produce a still greater revolution in the method of bending and furling these light appendages to a ship's furniture. The arrangement by which this is effected is so thoroughly novel and one which so effectually reverses all former proceedings of duties, that although some advantages are evident (such as a flatter sail and an easier furl), it would be premature to express at present an opinion of his system. And we shall therefore content ourselves, as in duty we are bound to do, by allowing Mr. Forbes the opportunity of explaining it himself.]

*Forbes's last new Rig for Ships.*

London, 22nd May, 1869.

Dear Sir,—In the first place I must introduce myself anew to you, as the originator of the double-top-sail rig, for which you kindly allowed a place in the *Nautical Magazine* about 1860.\* I desire to call the attention of seamen, shipowners, and others to a new mode of arranging the same proportions of sail, rig, etc., as illustrated by the auxiliary packet ship the *Massachusetts*, built under my orders, and after my plans in 1845.

By this method all my square sails, except courses and sky-sails, or

\* The reader will find it in Vol. for 1851 page 440.



royals, are bent by the *foot* and not by the *head*, as at present; my lower yards are slung or parcelled *just above* instead of *below* the eyes of rigging and stays; top-sail yards are slung or parcelled to a prolongation of the lower mast through the cap, also just *above* the eyes of backstays and stays and not under or below them as at present. I bend to the *head of the sail* a spar about a quarter or one fifth of the length of the yard above it, in the middle, and leave a space (when sail is set) between the said spar and the yard, so as to clear the stay, and not to cramp the yard in bracing sharp.

Sky-sails clew up and lower as usual, all other yards are fixed by slings, and move only on parells.

Courses come down to the deck; other sails come down to the foot.

All the square sails of a ship, by the new method, are bent by the foot to the yards and not by the head as usual; the yards (except the upper one, say sky-sail or royal) are permanently slung or parcelled to their respective masts, *just over or above* the stays, and the eyes of the rigging and backstays, and not under or below them, as at present.

This mode of bending sails and slinging their yards, involves a wholly new arrangement of the standing rigging and the position of the yards.

It is proposed at no distant day to give a full description of this new rig with diagrams.

The sails below the upper ones of all, consequently furl on the yard at their foot and not at their heads, and trice up instead of "clewing" up as usual. The courses come down to the deck and are there reefed or furled, except in light winds, when they may be hauled up as usual.

The principal advantages derived from this rig are, dispensing with tyes and sheets, better setting of the sails, facility for furling or reefing by few men, especially the courses:—yards brace almost fore and aft, which is a great advantage in steamers.

So great a deviation from old established customs will no doubt meet with much criticism, and, as usual, opposition, especially among those who contract for building and equipping ships.

Having had much experience in fitting ships, it enables me to propose this new system of rigging ships with confidence, for no seaman who has seen the preliminary sketches has made any grave objections to it. I am, your obedient servant,

R. B. FORBES, of Boston, U.S.A.

*To the Editor of the Nautical Magazine.*

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#### SPRINGS FOR CHAIN CABLES.

SIR,—If the loss of H.M.S. *Ferret*, at Dover, be the means of renewing attention to the defect of our present ground tackle, it will have been no real loss to the nation. My recent discovery of a means of testing

iron by magnetism has convinced me that the greatest care of the manufacturer of chains and anchors, will not always control the *condition* of the iron they are made of, since we cannot declare that iron comes out of a furnace, in the same condition in which it was when put into it. If this be the case we should thankfully receive proposals from experienced seamen when they suggest (were it even) a partial remedy.

I am glad to find in the *Standard* of this day that Mr. Bright is of the same opinion, as he favoured Mr. R. Saunders, an eminent East Indian Captain of the Merchant Navy, with an interview on Monday, at the Board of Trade, on the subject of a newly contrived elastic Indiarubber spring, which he proposes to introduce between the Bits and the Hawse-pipe,—so that the shock of a sea may not be too suddenly conveyed to the chain cable.

Really, Sir, the subject comes home to us all. The intention is excellent. Had one of these been applied to the *Ferret* there is every reason to believe she would not now have been scattered in fragments along the South Eastern Coast.

Many years since I saw an attempt to apply a somewhat similar contrivance to shipping, but from want of knowledge of seamanship in the inventor, it did not come out in a perfectly convenient and available form:—it had besides a decided defect, which I am happy to find is thoroughly remedied in Captain Saunders' simple, and, I think, most important invention. Your older readers will doubtless recollect my former opinions of ground tackle, as you kindly allowed me to express them, some years since in the *Nautical*.

My object, in once more begging the favour of a small space in your respected Magazine, is, to ask any of your readers to oblige me in assisting me with materials by which I might form some idea as to the number of ships and vessels stranded or lost in a year, through the parting of cables on our coasts. There is another phase to the question. I suspect that the introduction of these springs into our ships would after a time diminish the present risks to which life-boat men are occasionally exposed when a ship is seen labouring at anchor off a sea shore. Any conventional signal from such a ship (even the hoisting of a flag of any sort, or say on the forestay), to inform those on shore that she had springs on her cables—would at least *give more time* to the gallant coastguard, or boatmen, to perfect their preparations for *timely launching* to the rescue. Captain Saunders is a perfect stranger to me, except that I met him over his excellent appliances, and I am sure, Sir, you will join with me and all seamen in wishing him the success his invention deserves. I am, etc.,

S. M. SAXBY, R.N.

We find the following in reference to the subject in the *Sydney Morning Herald*, of the 9th of February last—

**THE PATENT SPRING CHAIN STOPPER.**—A ship in danger of being driven from her moorings, or one which is in peril of driving on a lee shore, has but one hope—but one reliance—her anchors. And

if the cable parts, all is lost. The case is one of life or death. This being so, is it not wonderful, that in these days of scientific discovery of all kinds, no way should have been found out, till now, of preventing this one fatal mishap, to which all cables are liable, of parting, or breaking, by a sudden strain? The "patent spring chain stopper" is intended to meet this danger. It consists of a cast-iron cylinder and pipe as piston, acting on vulcanized Indiarubber rings, which will keep good and maintain their spring in any climate. The object attained is, the getting rid of that sudden strain which snaps the common cable. The tension is borne by an elastic substance, which is abundantly able to meet it. We apprehend that as this simple, but great invention, comes into common use, we shall in a great measure cease to hear of those fearful shipwrecks which have hitherto been so common; and the majority of which have arisen from one cause—the parting or snapping of cables, leaving the devoted vessel to the mercy of the storm.



A VISIT TO THE FISHING GROUNDS OF LABRADOR by *H.M.S.*  
*Gannet*, in the Autumn of 1867, *W. Chimmo*, Commander.

(Continued from page 305.)

SHE embarked in a brigantine of 175 tons at St. John's, and commenced the voyage with 200 men, women, and children in the hold of the vessel, their flooring consisting of tiers of hogsheds of salt, taken for the purpose of curing the fish. Of course all the light and air they could have must come down the main hatchway, and the fore and after parts of the vessel were cut off from each other by a bulkhead across her, so that there was no communication between them. The upper deck carried a tier of casks, over which were no less than thirteen boats, skiffs, punts, etc. Among these were promiscuously arranged pigs, dogs, goats, and poultry, along with the provisions intended for the use of the above 200 passengers for six months! In the course of their voyage it came to blow as it can do in those latitudes, and the first discovery made that no rope could be got at. The sea got up so heavily that a boat was soon washed away, but soon the thirteen others followed it, while the sea began to take liberties by tumbling into the main hatchway. On this, as a safeguard, the master was for covering it, or in fact, as it is expressed, he was for battening a tarpaulin over the hatch with the gratings on, a course of proceeding (by excluding the air from every one) which would soon have been fatal to every one there! But happily this was not to be done. A resolute fellow stepped forward to the master of the vessel and told him plainly, that if he attempted to batten them down, he would break every bulkhead on board of her. "My wife is among them," he said, "and the whole ship shall go before she shall." How could they exist in

that hold without air was a most natural question, while all the while the crew too were reeling about there in a condition of drunkenness. Happily, this appeal was to the purpose; the hatch was not battened down. But the scene in that hold, amidst the motley mixture of animals with human beings, heightened by the motion of the vessel, the sea now and then falling on them, sea sickness, dirt, children crying, infants screaming, mothers terrified, all these noises, mingled with the noise of the storm, and the cursings of a drunken crew, and the filthy stench that must have prevailed, enough to affect the strongest stomach, must have been a scene not even to be equalled in a slaver of the olden time! And yet some thirty thousands of individuals find their way to and fro between Labrador every season as it comes, subject to the repetition of scenes such as this was. The fact seems scarcely credible. It is most difficult to believe that persons who have once gone through such a state of torment, not to say of downright danger, and once escaping with their lives, will ever really subject themselves to the same again and again. Yet, so it is! Is there no one, is there no spirited company who will relieve their fellow-creatures, this wretched, tormented race of fishermen, from these nuisances which it seems they are thus compelled to endure, and which had been plainly told by this old lady, who had herself experienced them? Let us hope that such glaring deeds of oppression will soon be remedied. To return, however, to our own proceedings, my journal says:—

Sir Rodney Mundy's island much resembles some parts of Scotland, abundance of bog and stone, and sometimes as much in the air as beneath it. In a little walk, I found myself at times up to my knees in moss and bog. I had the curiosity to peep into a fisherman's hut in my walk, and naturally expressed some surprise that they did not improve their dwellings (for I had observed they were all much alike) in which half their lives are passed. "Sir," said one of them to me, in reply, "you know nothing about it." He was the principal tenant. "Do you know, sir," he asked, "that I pay eleven pounds rent for the season, for this turf hut?" Eleven pounds, I exclaimed, eleven pounds rent? I did not, indeed, know anything about it. But I am quite sure I said that I could build a better in two hours, one something similar, but certainly far more comfortable. Here is another of the drags I said that these unfortunate fishermen have to pull them down.

Among the customs of the Esquimaux is one that is common to his half brother, the North American Indian, and that is their mode of interring, which it is not, but a substitute for it, a mode of depositing the corpse merely on the surface of the ground, instead of beneath it, and merely covering it over with turf. I had come across, by mere accident, the grave of an old Esquimaux woman, reported to be ninety-eight years of age. And I found out afterwards the following story about her. In 1836, on an island near our present anchorage, there was an Indian house in which there was a good deal of drinking and merry making going forward. One night about thirty years ago there

was an evening revel at which old Granny, as she was called, was one of the guests. They were engaged in their usual amusement which was a mode of swinging with the chin resting on a noose of a rope hung from a beam. The game was to pass the noose on to the head with the chin resting on it; to hang in this position as long as one could, while all the others were dancing round him. The game had gone on merrily, and it came to the turn of old Granny, who of course placed the noose under her chin.

The old lady kept up the game far longer than any of the rest, astonishing them all, and of course gaining great applause. But when they went to release the old lady of ninety-eight, she was found clutching the rope so tightly that they could not release it from her grasp. So they lowered her down and found, alas! that she was a stiffened corpse. And her body lay among those which I was now contemplating. It is a remarkable fact, that scarcely a single European grave is to be seen here. Those who happen to die here are carried off to Newfoundland, where they are buried from their houses.

On the 2nd of September, having finished landing our coals, we got up steam and started for Greedy Harbour, and here we found the fishermen taking abundance of herring, and some few of them cod, while others not far from them were taking nothing.

We picked up some information here regarding the herring, which accounts for the fact, that they are very inferior to ours, such as the celebrated Yarmouth bloaters. It appears that after they are taken they are neglected. The superiority of the Dutch herring is attributed not only to the care taken of them, but also in bleeding them, a process never performed here, either from want of time or heedlessness. Moreover, here they are thrown about and get bruised, and are even left out in the sun and rain. They then become less valuable by being packed without heads or tails, besides being bruised, and these are not to be compared to the perfect fish.

In the course of the afternoon, we ran again into our old haunt, Indian Tickle, and took an anchorage in four and a half fathoms. We had no sooner arrived than we had a visit from Mr. Warren, a justice of the peace at Newfoundland, and a large fish-owner here. It seems, however, that want of success somewhere has much interfered with his prosperity. Our friend, Mr. Warren, spoke in warm terms of the great advantage of Indian Tickle to the fishermen, lying as it does in the highway, which they follow north and south. In the course of the present season, as many as 3,000 vessels have frequented it, but three of them had struck on sunken rocks, and one of them being wrecked thereby, was soon plundered by the fishermen. So much for misfortune, proving that even here it does not come single. Shipwreck is bad enough, but plunder afterwards is surely a double misfortune. Thirty thousand fishermen are considered to have been here this season.

An incident took place on the introduction of Mr. Warren, amusing enough, but at the same time highly characteristic of the place. On our doctor enquiring of Mr. Warren after the health of a person whom he

said he had attended at Newfoundland, but who was following his work on this coast:—"Oh," replied Mr. Warren, "he is dead and pickled." This was quaint indeed to unaccustomed ears; but at once called to my mind the practice before alluded to of salting the bodies soon after death, to preserve them for the voyage to Newfoundland where they were buried. The Spaniards very truly say, "*Cada pais tiene sus costumbres,*" so why should not Labrador have customs also. But this custom is at once accounted for, by all the fishermen having families at Newfoundland, and thence the desire for burial there.

And yet Indian Tickle is not without its place of interment. There is an enclosure with a decent fence round it near the flagstaff, containing about a dozen bodies, but it is said that the ground was never consecrated. There is a Romanist burying ground on Musgrave island, and another on Indian island, shewing that the voyage to Newfoundland does not always follow the death of a fisherman.

There seems to be a resident population at this place, Indian Tickle, of about 800 persons, of whom half are Romanists, the other half distributed between Wesleyans, Presbyterians, and Protestants of the Church of England. The former have a place of worship, and a short time since a Protestant church was in contemplation. I saw the plan of the building, which was to cost £500. How much of this sum was contributed by the firm, to which I have alluded, whose members had retired with £40,000 each, I cannot pretend to say. But such an appropriation of a little portion by each party of their gains would have, at least, been becoming. However, it is said that some mistake on the part of the Bishop of Newfoundland has delayed the building sadly, which is often regretted.

Among the periodical visitors to Indian Tickle, is a judge, as well as a collector, and even a minister makes his appearance occasionally, but it is a pity that his visits do not extend further north. The Superintendent of Fisheries is ex-officio a visitor, but it is said he comes forty-eight hours too soon, for the people have not time for replying to letters. Indian Tickle is, after all, a lively place, owing entirely to the fishermen, who do not gather much wheat into their granaries, and have a hard life of it. Somehow they are little satisfied with their lot. They come from their homes in debt, they work hard and return to pay it off, but whether from improvidence and bad management, or whatever it may be, they are always in the hand to mouth condition.

The few days we have been about here, have been fine but cold. It has been said, but I could not find with what truth that Indian corn has been found in the crops of the curlew as they arrive on the coast, and it is a matter of some curiosity to know where they find it—as it cannot be accounted for. At all events they abound here.

They seem to have adopted the opinion here that this climate is becoming milder than formerly, and an old resident of Indian harbour, gave me some curious facts worth preserving, which are these:

In 1836, the first cod fish were caught on the 25th of July.

In 1867, the first cod fish were caught on the 25th of June.

In former times the ice remained to the first week in August; sometimes later.

In these days it clears away in the first week in July.

In former years herring appeared in September, now they appear and are taken in August.

Twenty years ago, in consequence of the drift ice, scarcely any vessels went north from Newfoundland for fish.

Within these last few years, upwards of 100 vessels have passed north to fish.

It has been a question with me whether the Gulf Stream is doing anything up here towards tempering the vigour of the Labrador coast by means of its warmth. No doubt it has its influence on the coast of Europe, and one of my objects has always been to trace it here if possible.

The weather has certainly favoured us so that we have managed to complete a fair survey of this Tickle, and to obtain our last series of latitudes and longitudes. By our observations the coast is hereabout pretty correct in latitude, but is at least ten minutes too far east in longitude.

There is, however, so much iron ore in the rocks that we had considerable difficulty with our magnetic observations. In some places the needle was deflected as much as  $12^{\circ}$  in azimuth, and all our observations had to be repeated at places free from it.

Sunday, the 8th of September, was a day of rest, which we again enjoyed, notwithstanding a heavy gale had set in from the northward, for we had been frequently working at our surveying duties for sixteen hours a day.

In the course of the day one of those events occurred which are coolly called, in technical language, "casualties." There is a great deal in the expression, and a shipowner, perhaps the merchant, who has his goods embarked, would rather hear of a total loss than any partial injury occurring to a ship in which he may be concerned. While a partial loss entails a vast deal of trouble, a total loss settles the matter with the insurance office speedily, all is at end. And so it seemed very likely to be with a large brig, called the *Terra Nova*, which went to pieces at this place to-day.

It was early in the morning that a large merchant brig of many tons, and deeply laden, brought up with both anchors close alongside of us. This was all very well, but great was our surprise to see her at noon getting under way again. Her anchors were no sooner started than she drifted on shore, and in less than five minutes she lay a helpless log grinding on the rocks, and that too at the top of high water, while all the time a heavy gale was blowing. Quickly our boats were out and our men on board of her furling her sails and sending her yards down, and a stream anchor was laid out for her, by which our cutter was nearly swamped, her boats got out and her water casks started to lighten her.

And yet all our efforts to save her failed. The unfortunate *Terra Nova* had got on shore on the very worst rocks in the harbour, and at

high water! the sea was perpetually running over her. Notwithstanding her rough treatment on the rocks she had found, on which to leave her remains, she held together very well up to two the next morning, her masts and yards threatening at every lift of the sea to get thrust out of her upon us; and now she gave a list from the effects of an ugly wave, and at once there was seven feet of water in her hold. In fact, her bottom was out, and the brig was gone. Her cargo of fish had been about half saved by boats, and had amounted to 4,000 quintals.

We had already commenced our retreat from Labrador when we left Hopedale, and on Monday, the 9th of September, we were on the wing from "Indian Tickle." After receiving on board the master, crew, and passengers from the unfortunate *Terra Nova* for a passage to Newfoundland, at ten a.m. we steamed out to sea, passing through the intricate tickles as the channels are called, abounding in a variety of rocks and hidden dangers, so often fatal to vessels. Domino harbour lay in our way, and passing by Round island, at one p.m. we had to steam dead against a fresh south wind for Occasional harbour, where we arrived at seven p.m., and took up our old berth on the south side in seven and a half fathoms of water, the only part where anchorage can be had.

Our next day was wild and stormy, but we started at nine a.m., with a strong breeze from S.E., accompanied by gloomy weather and rain, and we were glad to run into Fox harbour, which we had less difficulty in entering than we had in August when we found the large iceberg across the entrance.

On the following morning, September 10th, we left our anchorage in Fox bay early for St. Louis sound, with the wind strong from N.E. In fact, as we passed Bible isle it was blowing a furious gale, which induced us to cross the strait and anchor in the snug harbour of St. Anthony in five fathoms. Here we found several fishing boats and stages, and certainly the French fishermen seemed to be more substantial and comfortable than those of Newfoundland. We found a good sized barque, a brig also, and several schooners at anchor, but not one of these French vessels showed us their colours. The anchorage in this harbour is very snug, but the whole shore of the harbour is terribly infested with rocks.

On the 12th, as we were running by French island, a strong breeze freshened up from S.W., bringing a heavy sea, and bad weather seemed now to be our lot. We passed along the wild and weather-worn coast of Newfoundland, and bad as it was, it was not so rugged and forbidding as that of Labrador. On Cape Francis, as we passed it, we even observed a few stunted firs, and as if to assist the elements of the weather in their destruction of vegetation, the mischievous fishermen carry fire into the glens, the quiet recesses where only they can find shelter from the storm and permission to grow. Here and there on this shore of Conception Bay were to be seen the straggling huts of fishermen.

Passing Torbay (to remind us of England) we observed its bare



headlands of red sandstone, some few houses and fishing stakes, but the chart gave a poor account of the coast, it was difficult to recognize it. After struggling along the coast against a strong southerly wind, freshening in rather unpleasant gusts off the headlands, and availing ourselves of the opportunity of observing them in all their bold grandeur, we had the satisfaction at length of running into the snug harbour of St. John's. Narrow as it might be, it seemed all the warmer, and its tranquil waters, after the seas and gales in which we had been buffeting about so long, at 3 p.m., when we dropped our anchor in seven fathoms, were a treat, to which we had been strangers for a long time.

Here we found the French commodore, M. Theodore de Lapelin, in his frigate, the *Armorique*. And on the next day one of my first objects was to pay him a visit. On going on board his ship I found him a most agreeable and affable gentleman, and every inch a sailor. The sounds of an organ had already saluted my ears, and soon as we were engaged in conversation I observed that they proceeded from a double-barrelled hand organ, which was in vigorous operation under the hands of a blue jacket, while several couples of officers in friendly embrace were busily engaged in following the mazes of the waltz on the quarter-deck to the invigorating music. "Ah, ah, monsieur," said the Commodore to me, laughing, "You see, monsieur, this is our Sunday." "Cada pais tiene sus costumbres," thought I to myself again, as I returned his animated invitation to join with thanks, and after some further agreeable conversation, wished him and his officers good day.

My next ex-officio visit was, of course, to the Governor, His Excellency A. Musgrove, but not finding him in his castle, I had a favourable opportunity to take a peep at St. John's. The city itself is comprehended at a glance. It stands on the face of a steep hill, following the shore of a harbour. Running in a direction nearly parallel to this are four or five streets, distinguished by the names of some of our more celebrated naval officers, such as Duckworth, Cochrane, etc., and these are crossed by other short and steep streets bearing names of others of less note, while here and there are some lying in a diagonal direction for the convenience of cars.

Of course the whole strand is edged with wooden wharves, and the best shops are in the long street next to it, where the names of O'Brien, O'Neill, and Macnamaras abound, and certainly St. John's is well enough off for churches, where I counted no less than thirteen including those of all denominations. For so small a place as St. John's this was abundance. So we must take it for granted that religion is well looked to here. But St. John's is an important, busy place, vessels are continually arriving and sailing for all parts of the world, and, as might be expected, the wharves form scenes of continual bustle and activity. Where so many sailors are to be found their boarding-houses are plentiful, and no doubt poor Jack, as usual, is often taken in and done for. In my ramble on shore the odd way in which dogs and goats are served struck me as rather curious. The

former carries a log of wood hung to his neck, but passing between his fore legs; and the latter carry it suspended from a collar across the neck. One in fact has it "fore and aft," and the other "athwart ships," both being no doubt rather troubled with the burthen they have always to carry, but which no doubt acts as a useful check against too much activity, or in keeping down quarrelsome tendencies.

The day having released large numbers from their week-day operations gave ample opportunity for visiting the *Gannet*, and in consequence our decks were crowded nearly all day with wondering boys and girls.

At nine the arrival of the packet was announced by a gun being fired. But how could we expect to receive letters from England just from Labrador. So although disappointment sat in a face here and there, yet when reason resumed her place it was agreed that such anticipations could not be entertained. But after all, this mail was only from Halifax.

It is almost impossible to land at St. John's without observing the poverty of a large portion of the populace. In fact the appeal for charity from the poor and distressed is constant. And yet I am told that a large portion (one-third of the revenue of the place) goes to their support. How is this? Let the authorities look in earnest for the reason and they will soon find it. Who is it let them ask that is ever making money, who is it that makes the poor fishermen pay so heavily for living and clothing? The answer will show how impossible it is for him to save anything from his wages. In fact he is thus deliberately robbed and his wife and children left to exist in a starving condition. No doubt the fishermen may be improvident but the merchants are exorbitant, and even as matters are, among the 30,000 fishermen of this place there are some saving mortals who would gladly lay by a few shillings if they could. But experience shows this (with prices which are demanded) to be impossible. And where is the remedy. Unhappily competition does not step in to divert the course of trade, and the only remedy I can see is to levy a good sensible tax on the merchant who supplies the fishermen with all his wants, and let that special tax go to a fund for his support. Everything he deals in should be taxed for the fishermen. No doubt he would still make the fisherman pay on his ground. But sooner or later a company may find room for themselves and the merchant might be undersold. It is to be hoped such days may yet come rather than hard labour be allowed to send its stream of gold perpetually into the pockets of unprincipled men, who are levying unreasonable prices from hands worn down with toil and exposure of all kinds.

In the course of the morning I repaired on board the French Commodore's ship to take leave of him as he was sailing for Coque Bay. And soon afterwards I received a visit from the leading members of the chamber of commerce, who were anxiously looking for the result of our surveying operations on the north-east coast of Labrador. Certainly the voyage we had just concluded had originated from their request, so that they were interested in its result. I must say their

observations were highly flattering to myself and officers. If we had been working hard through roughs and smooths it was pleasant to see it so highly appreciated. Their remark which it spontaneously called forth was no less gratifying when they said that "No request from the Government of Newfoundland had ever been so promptly carried out by the Imperial government as that which had produced the work before them." This was no doubt true, but the question very naturally suggests itself, were other requests as reasonable as this was, and did they affect the fishery as this did. For my part I shall not pretend to answer the question, and as they appeared much delighted at the prospect of soon having charts for the navigation of their vessels on this ill-known coast, I could only assure them that they should not be delayed by me.

On the next day, the 18th September, the governor himself honoured the *Gannet* with a visit, for the same purpose of inspecting our surveying work, and we were all highly gratified at the expressions he so kindly made use of on seeing the result of our labours. He did not hesitate to place the saddle on the right horse. He not only was lavish in his expressions of satisfaction at what we had achieved in the way of hydrography, but assured us that the information we had collected would be soon turned to a good account; it would contribute largely to the employment of the fishermen; it would tend to employ thousands of them and would tend not only to improve their condition but also that of their families who depended for their support upon them.

This too was a gratifying visit. To be assured that we had been working in so good a cause, to be told that we had been following our duty in so righteous a cause, was all that we could desire, saving perhaps the reflection that the poor fishermen while they were profiting by our labours, should not be ground down by the greedy trader, and obliged by him to pay double or treble prices to fill his pockets with their hard earnings.

And thus was our mission concluded, nothing being left to complete it but to send our work to the Admiralty, where in the name of Captain Richards, their Lordships' Hydrographer, it would be given to the world, while we should be pursuing our further similar labours in a more southern latitude.

The governor's visit was on the 18th of September, and it was my intention to have sailed as soon afterwards as possible as we had filled up our coal and water, but the wind had backed round strong from south-west with a falling barometer, which induced me to hold on for a change.

During the few days we had passed at St. John's I was literally obliged to forego the invitations I repeatedly had from the kind friends I had there, because I had literally nothing fit to be seen in. Having sailed from Halifax almost at a moment's notice, in the excitement and hurry of getting away my kit had been left there: and I certainly could not summon up sufficient courage to appear before civilized company in the oil-skin coat in which I had moved

among the Esquimaux or in a pair of boots after the fashion of those people.

The 19th of September was a boisterous day with the wind as hard as ever from south-west, but in the evening it backed round to the north-east suddenly, and we availed ourselves of the change to get away : so that before night we were making good way to the southward, and by midnight with a heavy sea running had the satisfaction of seeing Cape Race Light.

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QUEENSLAND AND HER KANAKA LABOURERS.

[BRITISH merchant ships being deeply involved in these matters, inclines us to insert the account of this meeting in our own pages. The compulsory labour of simple islanders, which labour is merely a new form of slavery, we should never have expected in these days to have been tolerated by the Governor of a British Colony.]

A densely thronged public meeting was held, February 8th, in the Temperance Hall, Sydney, Australia, to take into consideration the desirability of petitioning the Queensland Parliament to review and amend its policy with respect to the importation of Polynesian labourers. Among those present were the Bishop of Sydney and the Rev. G. H. Moreton, the Revs. J. Graham, J. Eggleston, J. Pitman, A. B. Davis, J. P. Sunderland, J. B. Laughton, A. Thomson, and his Worship the Mayor of Sydney, who presided. A letter was received from Mr. H. Parkes, M.L.A., stating his inability to attend, but expressing his willingness to give what aid he could in the matter.

His Worship having briefly stated the object of the meeting, called upon

The Rev. J. P. Sunderland, who read the following petition :—

*To the Honourable the Members of the Legislative Council\* of Queensland, in Parliament assembled.*

The petition of the inhabitants of the city of Sydney, agreed on at a meeting called by public advertisement, and held on the 8th day of February, 1869, under the presidency of his Worship the Mayor, humbly sheweth the grounds upon which your petitioners respectfully solicit your Honourable House to reconsider the law which has been made to regulate the importation of Polynesian labourers into Queensland.

The question as to whether and in what manner the male adults of the South Sea Islands could be made serviceable in developing the agricultural wealth of Queensland, has long engaged public attention. The subject has been discussed from various points of view; from that of the cotton and sugar planter, who has contended that it would be

\* The Houses will be addressed separately.

impossible for him to add to the revenue of the colony unless coloured labour were allowed him; from that of a class of people who consider that the importation of South Sea Islanders into Queensland would prepare them for the cultivation of their own islands; from that of a large class of persons who oppose the proposal to lower white labour by bringing cheap coloured labour into competition with it; and lastly, from a point of view occupied by a very considerable part of the population, who object to the importation of Polynesians at all, on the ground that it must lead to slavery.

The expression of opinion in Queensland upon this momentous subject could not occur unobserved. The colonies generally felt a lively interest in the discussions, since they seemed to involve a principle of which England is the champion, and for which she has sacrificed nobly. Therefore the state of the public mind on this question was narrowly watched, and great relief was felt when Parliament expressed its determination to legislate for the strict regulation of the traffic in coloured labour which had sprung up, because of the implied assurance that England would assent to no Act that would jeopardise her own honour in this matter.

A careful perusal of the Act in question (31 Vic., No. 47), assented to in March last, gave rise, however, to serious apprehension. Although it is drawn for the ostensible purpose of protecting the Polynesians, it is feared that it will rather tend to confirm skippers in the practice of kidnapping, and to lead to those evils in the South Sea Islands and Queensland, which the Home Government have extinguished in her own territory, and is endeavouring to discountenance throughout the world. Were any doubts entertained on this point, the disgraceful proceedings which have lately been disclosed, relative to the manner in which the recruiting system is being prosecuted for the settlement of plantations in Fiji and Samoa, would thoroughly dissipate them. Indeed, the nature of the evidence from the New Hebrides, from Fiji, and from other islands, is sufficient to show that the recruiting commissions granted by the Queensland Government will bring into operation a fleet of piratical vessels sufficient to oblige the constant presence of British men-of-war.

Serious exception may be taken to several of the clauses of the "Polynesian Labourers Act." It will be sufficient to instance a few of the most objectionable. By the 6th clause, the Government of Queensland seek to legalise the traffic in coloured labourers by private persons, in a manner disallowed by the Home Government in the tropical dependencies of the empire. That is enacted which is contrary to what is elsewhere allowed under British dominion. The only parallel instance is that in which the Mauritius planter is allowed to send his agent to recruit Coolies in India, but this is done under the complete control of the Government authorities both in India and in the Mauritius. Should it be allowable for Queensland to oppose the established policy of Great Britain in this way, the example must soon spread to other colonies, and the reversal of that policy be the effect. It appears from a study of the forms connected with this clause, that

the Colonial Secretary grants licenses to enable the planter to recruit labourers from the islands, which he will do by his agent, the captain of the vessel in this trade. But is this proposition compatible with the powers of a subordinate Legislature? Does it coincide with the law of the supreme Legislature? Is it not a regulation to take effect beyond the limits of legislative jurisdiction accorded to a colony? The Act itself contains no provisions for recruiting, nor is it possible that it should do so without some previous arrangement had been made with the several Island Governments, which could only be effected by Imperial power. It cannot but follow that the license given to private persons to recruit the natives of the islands visited by them, will become licenses to kidnap, and will be resisted whenever they are exercised.

Clause 8 is similarly objectionable. It is at variance with the expressed desire of the British Government that any Act of the Queensland Parliament should embody other than the provisions approved by Great Britain in respect of the introduction of Coolie labourers to the West Indies and Mauritius. It is expressly stipulated in all cases where immigration is sanctioned by the Imperial Parliament, that all contracts shall be made *within* the colony to which the coloured labourers are introduced; but the clause referred to in the Queensland Act provides for the contract being made upon the island whence the labourers are taken, and only renders it needful that the contract shall be shown to and approved by the inspector, who visits the ship on her arrival. It is indeed provided that the inspector shall question the men as to their comprehension of the engagement; but it is clear, unless he be master of the several languages they speak, that such a safeguard is a mere dead letter. There appears to be in connection with this clause, a very grave omission. Although the Government of Queensland commits to the masters of vessels engaged in the traffic licenses to recruit, no provision is made for their being men of good character and disposition; no guarantee is given that men of the cruelest disposition will not be gazetted as agents of the Government. The engagement also of the services of the missionaries in the South Sea Islands, in superintending contracts, even if they consented to do so, is very much to be reprobated. It would be extremely detrimental to the interest of the Polynesian Missions were the natives to get the notion that these good men were allied with every "recruiting agent," armed with a roving commission from the Queensland Government, and until some previous treaty or negociation with the insular authorities has been effected, it would be ruinous to their influence, and incompatible with their safety, to be connected in any way with such persons. From facts well attested, and from the nature of the case, we are compelled to conclude that there will be misunderstandings, and disappointments, and cruelties under the present system so long as it is continued. Exception is also taken to the scale of rations, which is considered insufficient, to the absence of a restriction upon the transport of the coloured labourers into the interior, to the nature of the Court which is to adjudicate between these helpless people and their

employers, and to the omission of any sufficient provision for the return of the islanders to their several homes.

The objections to this Act are not, however, theoretical: they are practical; that is to say, they are founded upon the evidence of those who have seen that the administration of this law does not secure to the natives that measure of advantage, justice, and protection from illusage expected of it. And if that which it provides for within the colony be not attained, how much less is it to be expected that the provisions intended to regulate this traffic beyond the colony will be attended to?

It is said that the resources of Queensland cannot be developed unless recourse be had to coloured labour. The same argument might be employed with respect to New South Wales. But are the interests of these colonies those alone which should be consulted? As Englishmen we have much reason to be proud of the success of British missions amongst the Polynesian groups; the people have made surprising advances in material and spiritual knowledge under the care of the self-denying men who have undertaken their instruction. Have we not then to consider, whether the proposition to deport the people that have been so trained will be for their good? And if we conclude that it will be for their hurt and deterioration, is it not right to disapprove it? It is clear that the Act contemplates the deportation of the civilised or semi-civilised only, since the uncivilised could not be made to understand the nature of a contract, and would only be brought to regular work by the unreasoning and arbitrary lash. But the commissioned skippers will not read the Act in this light; it will be little matter to them whether the natives are civilised or uncivilised; one man will bring as much head money as another, and what has been defective in training at home will be left for the stock-whip and stock-drivers of Queensland to accomplish.

Supposing that this traffic could be carried on under an equitable system of contracts, and be restricted to the civilised groups, even then, as the Act now stands, it would prove most injurious for the family and parental tie, to establish which our missionaries have wrought assiduously; and the islands would be robbed of the flower of their strength. But if a traffic in South Sea Islanders is permitted to grow up under the Act in question, which provides no equitable system of contracts, and commissions the skipper to seek where he pleases for his cargo, picking up two Polynesians in one place, ten in another, twenty in a third, the several parties strangers to each other, it is easy to foresee that the most deplorable results will ensue at both ends of the system. No provisions in the Act can prevent the trade becoming one of kidnapping in the South Seas, and of slavery in Queensland. The Insular authorities will resent the operations of the recruiting agents, for which they have not been prepared by negotiation, the deported islanders will work only under the heel of oppression; on their return those who are fortunate enough to be replaced upon their native islands, will in a great many instances find their wives re-married, which will give rise to family and tribal feuds, and

the influence of the missionary, who will stand in supposed alliance with the Queensland agents, will be completely neutralised. The little good previously accomplished in the men who go to spend their term of years upon the Queensland plantations will generally be undone, and they will return, we fear, very much worse than they went.

Such being the state of things which your petitioners consider as certain to arise under the provisions of "The Polynesian Labourers Act," it appears fitting that they should express to your Honourable House their apprehensions; and they humbly pray that it may please your Honourable House to take these premises into your serious consideration, and that you will review the subject as it affects the welfare of the South Sea Islands, and direct a searching inquiry to be made into the working of your Act within the colony.

Signed in the name and by the authority of the meeting, chairman.

The Bishop of Sydney was glad this petition had been read, as it would serve as a preface to the resolution he was about to propose. It was with very much satisfaction to himself that he was permitted to take part in the proceedings of this meeting, and though urgently called from Sydney, he had remained to attend this evening. There was always one danger attending the discussion of subjects of this nature, in which the temporal interests of a very influential class appeared to conflict with the spiritual affairs of a people in whom we were very deeply interested, and in the promotion of whose welfare the different religious denominations had spent much time, labour, and even life. The danger was lest, in the clash of these interests, feelings would be excited that would prevent a calm discussion of the subject and the reception of such a petition as was now read by the Legislature and people to whom it was addressed. It was then, he thought, very important in the opening of a meeting of this nature that there should be some observation of the manner in which the subject should be discussed; but as he was not extensively acquainted with the facts of the case he would venture to state how they should be brought forward and dealt with. If he should appear dispassionate and calm before some warm advocates of the subject, and in the presence of so many dark brethren, whom he was glad to see present; yet he would remind the meeting that its influence would depend much upon the manner in which the matter was discussed; and if we wished to produce a salutary effect upon the minds of the legislators of Queensland, or of those outside ourselves who did not take the same lively interest in the subject, it must be evident that the results of our deliberations proceeded not from feeling, but from the deep-seated conviction of intelligent men, that a great and crying abomination must be swept away. In making a suggestion of this kind, he did not wish to be regarded in the very useless and sometimes dangerous light of a candid friend; on the contrary, he had a very warm interest in the South Sea Islanders, and in the missions which, to the honour of many denominations of Christians, had been carried on among them.

Bishop Selwyn, who had just left us, was an old friend, and he who succeeded him as the representative of missions in the South Seas



(Bishop Patteson), was one of the noblest and largest-hearted men with whom he was acquainted. Reverting to the necessity of facts being brought forward on an occasion of this kind, he would remind them that Dr. Johnson, in his tour to the Hebrides, said somewhat humourously, and in his own manner, "Sir, there is nothing so difficult to get at as a fact." He remembered, too, having heard of Sir Robert Peel, that in Parliamentary discussions nothing alarmed him till a warm-hearted Hibernian advocate got up, because then he was quite sure that the facts that he had to deal with would be so illustrated and embellished that when the embellishments were disposed of, the facts, though they might be true, would go with them. Therefore it was safe advice the journalist gave, when he said, "Whatever you do be sure of your facts." Now, there were some facts of which we might be quite certain. It was certain that there were natives of the South Sea Islands in Queensland; that they were employed in various kinds of labour—some in cotton, some in sugar plantations, some as shepherds and otherwise on the various stations of the interior. It was also a fact that differences of opinion had arisen between the employers and the employed. If the newspaper reports were to be trusted—and no doubt they were—then very considerable and grave differences of opinion had arisen between the employers and employed, and notwithstanding the eloquence of the magistrate, we found a man saying in his broken English, "Me no like Mr. Raff;" and when they tried to make this unwilling person return to his employment, he still said, "No like Mr. Raff." Then when he was offered the alternative of going back to Mr. Raff or to gaol, he decided very promptly to go to gaol, rather than go back to the gentleman who had hitherto employed him. These were facts which came before us in the ordinary way of intelligence.

It was easy to believe that behind these statements there were circumstances occurring which we should be very grieved to hear, and which would scarcely bear the light. At the same time he wished distinctly to state that we had every reason to believe there were among these islanders men of intelligence, able to look after their interests, and that some of them were very kindly treated. He was quite sure that at stations on the Logan, where Mr. Towns had a number of the islanders under the care of the intelligent and able assistants at present in charge of his plantations, the treatment was good, the wages regularly paid, and that those who had come for a special period of service were on its termination sent back. But that did not alter the facts which had to be considered. He remembered that, when at Oxford, a young man from the Southern States was depicting in the most glowing colours the happy condition of the negro on the cotton plantations, when a friend said, "Well, indeed, it does seem a happy condition, and perhaps the best thing I could wish for you is that you were a negro." The Southern friend did not accept the compliment, but his blood boiled to such a pitch that he was ready to challenge the generous wisher of such a change in his condition. Another fact was still to be considered—how did these

men come to Queensland? Granted that in some cases many were properly treated, how did they and others get there, and what was the process to induce these men temporarily to hire themselves as labourers in Queensland?

It was here he thought the great evil was found. He remembered, a few years ago, when he resided at Miller's Point, near the wharf, hearing the sound of songs of praise rising up from a vessel, but not from Europeans. He did not think English sailors sang hymns at night—more was the pity. It was the sound of islanders' voices who offered up prayer and praise to the Almighty—men not ashamed to be heard in singing the praises of the Most High. Men like these you could trust with the care of their own interests. They could understand what had to be done. They knew the nature of a contract, and were capable of insisting that the contract should be carried out when it was entered into. But consider the condition of many of these islanders. No one was more competent to bear witness to it than the gentleman who read the petition, and he was sure that gentleman would bear out Bishop Patteson in the statement that they were utterly incapable of understanding what was meant by a contract in the European sense of the word. How was the captain of a vessel, ignorant of the varying languages, particularly of the smaller islands, to make the men comprehend that if they would labour for three or five years they would receive such and such wages, and at the end of that period be sent back again. It was perfectly impossible; nothing of the kind could be done. An extract from a letter the Dean had from Bishop Patteson, was to the following effect:—

"I hope, if it be God's will, to sail in May or June for an unusually long voyage among the islands, as I could not go last year.

"I am very anxious as to what I may find going on; for I have conclusive moral (though perhaps not legal) proof of very disgraceful and cruel proceedings on the part of traders kidnapping natives and selling them to New Caledonia to the French, and in Fiji and (I am informed) in Queensland.

"Whatever excesses may be (and have been) made as to the treatment they receive at the hands of planters, and the protection they may have from a consul after they are landed, it is quite certain that no supervision is exercised over the traders at the islands. All statements of 'contracts' made with wild native men are simply false.

"The parties don't know how to speak to each other, and no native could comprehend the (civilised) idea of a 'contract.'

"One or two friendly men who have been on board these vessels (not in command), and were horrified at what they saw, have kindly warned me to be on my guard, as they may retaliate (and who can say unjustly or unreasonably from their point of view) upon the first white men they see, connecting them naturally with the perpetrators of such crimes."

He did not think anyone who heard this extract read and observed its careful and temperate tone, and no one who knew Bishop Patteson—a man of the most exact and truth-speaking character—would for a

moment doubt that evils very grave, and enormities such as we could easily imagine, were at this moment being perpetrated in the South Sea Islands under the license and in the terms of the legislation of a neighbouring colony. This he did consider to be a very frightful state of things. There was no kind of palliation of it possible. If it be said the demands for labour were such that cheap labour must be had, then it was the duty of a wise and prudent Government—and we had no reason to say the Queensland Government was otherwise—to take care that in the introduction of that labour the interests of their fellow-creatures should be as carefully guarded as the interests of their fellow-colonists. If the revenue were to be protected, and great care taken that spirits, tobacco, etc., bearing duty, should not be brought in without inspection—if danger to the flocks and herds led them to prevent the importation of diseased sheep and cattle—should less care be taken on behalf of these our fellow-mortals? Were they to be less regarded than the temporal interests of pastoral and commercial people? He was quite sure no governor of Queensland, or Parliament, considering this subject, would for one moment venture to lift up their voices on behalf of a system which was condemned by their fellow-men. And if it were asked why we should concern ourselves with it, there were many reasons to urge. An article in the *Herald* pointed out that it was very likely that, by vessels fitting out here, we might get involved in the enormities and atrocities of this slave trade; and all would be ashamed of themselves if we were told that the missionary work was in jeopardy in consequence of the evils not only existing but increasing,—ashamed that some of our fellow-creatures, intelligent and capable of receiving instruction, were in danger of having religious knowledge trampled out from among them, and of having their civil and social rights violated by the introduction of this abomination.

No man calling himself a man, English, Irish, or Scotch, passing casually, would see wrong committed without a desire to right it; no one seeing a man striking a woman or violently striking a child but would feel his blood boil till remonstrance led to interference—at least he could speak so far for himself. And he would be ashamed of the name of a man, if, when knowing all these statements put forward, and which, he believed would shortly be supported by all the evidence that the law itself might require, he refused to give this excellent movement his sympathy and aid, or refused to extend his assistance to these islands of the Southern Ocean where the work of God had been so successfully carried on for so many years. If not for evil influence, the islands of the North and South Pacific might be studded with gems of priceless value to adorn the Redeemer's crown; and when he felt according to the testimony of his friend and brother, that not only was the work in danger, but that his life also was imperilled, and the lives of other good men might be so by the existence of evils of this nature—he thought we were bound to take the step we were invited to take; and, with all that respect due to a neighbouring colony and independent legislature—but still, with all firmness, and with a strong

Christian desire that our prayer might be listened to as a prayer to our Divine Father, we were bound in every way to implore the parliament of Queensland either to abolish the traffic, or to place it under regulations becoming an intelligent Christian people. He had great pleasure in moving, as the first resolution,—“ That this meeting reviews with high satisfaction the conduct of the mother country in liberating at a great price the negro slaves of her colonies, and looks with serious and sorrowful apprehension on the present system of importing South Sea Island labourers into Queensland; also, that in the opinion of this meeting, the legislature of Queensland, by giving authority to sea captains and others to engage and import South Sea Island labourers without any responsible Government agent to witness and superintend such engagement, inevitably tends to foster and spread a system of cruel deception and kidnapping.

The Rev. A. B. Davis (in the absence of Mr. J. Fairfax, through illness) rose to second the motion. He said, in the course of the earlier debates in the House of Commons on the abolition of slavery, Sir Charles Pole made a remark in which he said, that while he deprecated the measure then before the House, he rejoiced to think that it had been brought in so early, as it showed the cloven foot attempted to be concealed. Mr. Sheridan rose up in all his might to reply in his usual spirited manner—“ An hon. baronet has spoken of a cloven foot of which I plead guilty; but this I say, that the man who expresses pleasure at the hope of seeing the shackles of so many human beings removed rather displays the pinions of an angel than the cloven foot of a demon.” He (Mr. Davis) was of Mr. Sheridan's opinion; and after this lapse of time, when civilisation had gone onward, and we had seen the result of emancipation, it was very gratifying that we had so few Sir Charles Poles in our midst. He was glad of the opportunity to take part in so glorious a work as we had met upon, inasmuch as it showed that there were some subjects upon which bishop and rabbi were rightly as one—subjects apart from religion, and yet not apart, for social and domestic questions were like handmaids to all religions; and though they might be as wide as the poles apart in doctrine, they were as one upon the mighty social questions upon which the welfare of communities depended. Now, one of the circumstances that would tend materially to unbinge those social relations would be to go back more than half a century and rivet again once more those chains which had been struck off years and years ago; and no matter whether those chains be light or heavy, he found that not very far from us, in this enlightened age, there existed a place where, in some way or another, the people had gone to work to bring about a return of that horrid slave trade—of taking and working human beings against their will for insufficient pay. They kidnapped natives from neighbouring islands and thus fixed a stigma upon us, which we thought we had a right to get rid of. We prided ourselves properly upon the civilising influences of the present day, but this very kidnapping was spoken against 3400 years ago, when the old legislator of the Hebrew race said, “ He who steals a man and

selleth him, or if he is found in his possession, shall surely be put to death."

Yet in the face of such a law, given so many thousands of years ago, when there was little civilization and little knowledge, we had come back to a point when such a thing should be done. We knew of it and heard of it, and should we not show our hatred of such a system? During late years a very great deal had been said upon the sanction the Bible gave to slavery, and they opened especially the Pentateuch and said, could we object to such a system when the Deity approved of it and the legislator set it down upon record. To such an extent had this been carried that, when the Southerners of America were seceding from the North, a number of Southern gentlemen applied to the then Rev. Dr. Raphel to preach a sermon before them in one of the synagogues in New York on slavery. This gentleman gave a sermon, and endeavoured to prove, lamely enough, that the children of Ham, for the curse their father heaped upon them, were to be servants of tribute for ever. But when the sermon was sent to London and to the Continent, every newspaper which gave its attention to such matters entirely opposed the doctrines enunciated. How was it possible under so divine a system as that of the Old Testament there could have arisen anything like slavery? But the slavery of modern times was very different from that of ancient times. The slavery of the Bible existed to the present day in the East. There a slave was only a menial that attended upon his master and might be called a servant, for the Hebrew term for slave ought to be rendered servant. In the East they existed, and happy were they.

But what a different state of things it was if these people considered that under the sanction of the Bible the master who struck out the eye or tooth of a slave must let him go free, that the master was not to oppress the hireling, whether he be one born in the land or a foreigner. Just consider what a different state of things to modern slavery it must have been when the first patriarch took a bond woman as one of his wives, and being old, and thinking that he should not have a son of his own, took the son of a slave to be his heir. Surely it could not be maintained that this was slavery. It was difficult to restrain one's indignation when he thought that in the present day, after the noble sacrifices and exalted efforts that England had made to free her slaves in the West Indies and to use her influence upon the nations of the world, slavery should have risen up again in this quarter of the globe. It was difficult to restrain one's indignation when we remembered that England paid not less a sum than £20,000,000 to the slaveholders of the British West Indies as the price of emancipation, and afterwards kept a large fleet of ships cruising on the coast of Africa to put down the slave trade—for she discovered that after the slaves were emancipated there were those who would kidnap the poor negroes of Africa, put them on board vessels, huddle them together in the holds, without sufficient food or light, and sail for a distant shore, but with such overcrowding that, of the number who left the shores of Africa, not one-third reached their destination. After liberating

her own slaves, England had done justice to the producers of free-grown sugar; for it was found that the free-grown sugar of Jamaica, Demerara, and Mauritius could not compete with the slave-grown sugar of Cuba. For the purpose of putting down slavery in that island (Cuba), England entered into a treaty with Spain, and paid down £400,000 to bind the treaty; but she broke faith with Britain and shipload after shipload of these benighted souls continued to be carried over to Cuba. He called these poor people souls, for they had souls to save as much as we had. He had lived for six and a half years in Jamaica, where the Prime Minister at the time was a coloured man, and where the Attorney-General was a coloured man, and where Mr. Price, a noble minded specimen of the coloured race, sat in the Legislature, and where he saw hundreds and thousands of these people going to their places of worship Sunday after Sunday to praise God for their freedom. We may well feel proud of England; we may well feel proud that we were of the stock of that people who, unaided and alone, granted a large sum of money to release her slaves, and after that placed her ships at the service of others in order that this foul crime might be rooted out of the nations of the earth. She went forth uttering the words of the poet—

“ By the hope within us springing,  
Herald of to-morrow's strife,  
By the sun whose light is bringing  
Shackles or freedom, death or life.  
Oh I remember life can be  
No charm for him who is not free.”

As the seconder of the resolution he thought he had said enough—enough perhaps to weary the patience of this assemblage. He felt it difficult, when looking at the whole question, and remembering all its concomitants, to realise the fact that this young country had begun to engage in such a horrid traffic; and, having said this much, he protested most solemnly against this kidnapping for Queensland, which he looked upon as putting in the thin edge of the wedge of slavery. He protested against it in the name of Britain, which spilled its blood and spent its treasure to nobly wipe this foul blot from off the face of the world. He protested in the name of Australia, which stood in the light of a child to a parent, having received humanising lessons from that parent, and with an earnest desire to carry them out. He protested against it, in the name of New South Wales, which had removed the stigma of convictism from its midst. He protested against it, in the name of civilisation, in the name of those institutions which reared their heads in our midst, and of which we were justly proud. He protested against it in the name of that grand mercy which was vouchsafed to us constantly, daily, and hourly to every one of God's creatures irrespective of creed and of colour. He protested against it, in the name of justice, whose eternal laws bade them do what was right, and stand up between the weak and the oppressor. He protested in the name of their common humanity against this system which was being brought within their circle, and by which

innocent and confiding men were deluded by bright promises which perhaps would never be fulfilled—decoyed away to a strange country whose language they understood not, and of whose institutions they had no knowledge, and were there made to work for little pay against their will. When he said he protested, he meant it as a figure of speech only, as he was sure that, when this resolution was put from the chair, there would be an acclaim from this large meeting which would show that not he but they protested. He protested against this traffic in flesh and blood, in bone and sinew—against that domination over man's free will; and he promised to do his best to show that this was a system which ought at once to be abandoned. He would close with the words of the poet, in which every one present would agree:—

“ I would not have a slave to till my ground,  
To carry me, to fan me while I sleep,  
To tremble when I wake, for all the wealth  
That sinews bought and sold have ever earned.”

The Rev. gentleman retired amidst loud and prolonged cheering.  
The resolution was put from the chair and carried by acclamation.

[The great length of the report compels us to reserve the remainder for our next.—ED.]

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#### COALS USED IN STEAMERS.

SIR,—In reply to your note of 7th instant, seeking information as to my researches into the important question of steamers' coals, I beg to say that the reports which reached you are no exaggerations. Ever since 1866 I have been deeply investigating the question, having had the peculiar advantage of comparing notes with able men well experienced in the practice of furnace operations.

In January last I made certain statements to the Board of Admiralty, shewing that in frequent consultations with naval chief engineers we had agreed unanimously that a saving of money (amounting to a sum which I will not attempt to estimate until I have first stated details in justification) might easily be effected in the Royal Navy.

And before finishing this paper I will give these details, for the sum is large.

On the 8th February last their Lordships, through their secretary, did me the honour of thanking me for my offers of assistance in the matter, consequently I have the vanity to suppose that my suggestions led to their issuing on the 24th April last, the two circulars S. No. 29 and 30, constituting what is now known as the “New Coal Regulations,” and the readiness of the Board to avail themselves of all means of economising in the consumption of fuel must be gratifying. But a circumstance has since occurred which has had the effect of partially neutralising the satisfaction which the public began to feel:—

one of H.M. Steamers has been disabled in a very few hours entirely from the quality of her coal : which had been supplied under the new contract system ;—having totally destroyed the fire bars. I saw eight of them which had completely run together.

The circumstances of the case confirmed all that I had previously said and written as to the waste of coal from *want of a better system* : and it is my object to assist in shewing that much remains to be done before our ships of war are safe from accidents similar to the one referred to :—such would leave them at the mercy of diminished sailing powers (now assumed to be a necessity).

In the presence of an active enemy, at the very time when plenty of steam, and a demand for the highest speed occur,—these would have a tendency to increase the evil which disabled the ship alluded to.

I disavow all intention to interfere with any one. I happen to know what others do not appear to have noticed, and I merely am about to place what little powers I have in the matter in the hands of those whose responsibilities may enable them to correctly estimate the value of every hint in the direction of economy which applies in a very large per centage to a yearly expenditure of about £275,000 sterling.

Now I will prove that the whole evil of the present and past system of coal consumption and supply is produced by *ignorance of the scientific part* of the question. Scientific points are altogether ignored by most government authorities. For eleven years it was my duty to deal with these points, in improving acquaintance with them on the part of chief and other officers of naval engineers who attended my Lecture-room. Being now relieved from those duties, and knowing how immensely important some experiences in matters connected with the Naval expenditure in the marine engine room really are, I purpose with your permission to offer through the venerable pages of the *Nautical* some remarks and results which have never met the public eye, and are known only to myself and to some highly intelligent officers who have availed themselves of my lectures, and who even took an active part in my investigations, which I have had the good fortune to render attractive to them. (N.B.—One seldom takes a wise fish with a *bare hook*.)

In first announcing some of my conclusions on the great waste of coal in the Navy, the slowness of the progress made is easily accounted for. There lay before me the choice of two courses,—one was either to coax the national ear and eye towards contemplation of facts, disagreeable in themselves to look at, but not difficult to tint and touch up into highly contrasting light and shade, for the sake of effect :—or, to lay on my colour with truth to nature.

But, Sir, the latter was a difficulty. It might seem that the *ars celare artem* of the first would have more readily introduced the thin end of my wedge ;—but in all matters in which I have presumed to meddle publicly I have preferred to paint my subject *truthfully*, even at the risk, sometimes, of being suspected of using *too much black* ; as, it was said, did once an unlucky wight who pourtrayed a certain “old gentleman.”



Where so many conflicting interests and individual responsibilities concur in delaying *changes*, one needs be circumspect :—but the time has arrived at which a wise economy is demanded by the nation's voice and demands our mite. I believe mine will prove something more than a *mite*!

Before I can give the detail of the proposed means of effecting a large annual saving in coal used by government, it will be necessary (and I trust not uninteresting to your readers), for the proper understanding thereof, to make a short survey of the general question of coal supply.

But I am encroaching on the strict limit of space so kindly spared to me in this Magazine for July: and beg to be allowed to make my explanations in your next number:—in the meanwhile, let me guard the reputation of the able and excellent officer in charge of the engine room of the ship referred to as disabled, by stating that I can pledge myself to his great habitual care and ability. I can fully exonerate him from all blame. The accident arose (as I will prove) *from the quality of the coal alone*, and not from faulty stoking. I have further the pleasure of stating that although the coal was supplied under the new system of contract, and has caused unfavourable comments on the authorities, no blame can possibly be attached to the Admiralty department which purchased or supplied it: this I will also prove. How many reasons therefore appear, in justification of this attempt to improve our knowledge of coal as a fuel in marine engines, and especially at a time when according to Admiralty circulars, coals of different qualities are to be mixed for sea service, good with inferior! Of course, sir, this must be vitally a *scientific question*: I will in my letter illustrate this important conclusion:—it is a great fact on which may hereafter, in a great measure depend the prestige of the British Navy.

Imagine a huge ironclad tumbling about heavily in a sea way, under loss of steam power through *any* cause; and small hostile active, heavily armed hornets and rams, taking their deadly and decided advantages of her, at their leisure! What will become of our "*saucy Arethusas*." Attend to this question *in time*, and long and lustily may the British sailor sing "Rule Britannia:" but neglect it and who will not wince under their "Oh dear, what can the matter be"—which a novel sense of helplessness will painfully suggest?

S. M. SAXBY.

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REMINISCENCES OF TRINIDAD.—*From a Visit to Port Spain as it was.*

THE island of Trinidad, the southernmost of the West India islands, and nearest to the continent of South America, is situated between the parallels of 10° 4' and 10° 54' north, and the meridians of 60° 57' and 62° west of Greenwich, being about forty-five miles across from north to south, and thirty-two miles across from east to west.

It is separated from the continent by the Gulf of Paria, and is ten miles broad, and by the geological report of Mr. Wall, presents an area of one thousand seven hundred and fifty-four square miles, six hundred and forty of which, it is said only, are under cultivation.

This island must be regarded as one of the richest and most productive of the West Indies; but its resources are for the most part lost from a deficiency of labourers. The scenery in many parts is extremely beautiful and picturesque, the valleys teem with their produce, and the hills are covered with perpetual verdure. The southern shores of the island are hilly and abrupt, with very little level ground; the northern part of it is also hilly, while the western shore is for the most part a swamp. The valleys are particularly fine; and Marival has been celebrated by Coleridge for its luxurious charms.

Paria, one of the provinces of Columbia, from whence the gulf obtains its name, forms its western shore, the land being somewhat higher than that of Trinidad. Columbus with rapture alludes to the beauty and fertility of this favoured land, which, in his enthusiasm, he concluded to be contiguous to the terrestrial paradise. He even went so far as to imagine that the fresh water flowing into the Gulf of Paria was supplied from the fountain mentioned in Genesis as springing from the tree of life in the garden of Eden. The country is indeed most beautiful, as it really might become a paradise, yielding all that man could wish, did not his vile nature debase him, and render him unable to reap the fruits of the earth in peace and comfort. The querulous and idle disposition of the present race of people who inhabit it, render it very different from a paradise, for there a conflict of evils embitter its fruits and rapine holds her ruthless sway.

The Gulf of Paria is a considerable sheet of water, being forty-three miles from the Boca on the south to the Boca del Drago on the north, these bocas being narrow straits formed by each extremity of Trinidad with the main land. In its widest part the Gulf of Paria is eighty-three miles across, *i.e.*, from the shores of Trinidad to those of Columbia. Both shores bend and mutually approach each other to form the Bocas by which the waters of the gulf communicate with the ocean.

On the south side of the Serpent's Mouth (at the south end of the island), which communicates with the Atlantic ocean, receiving in the rainy season the vast flood of waters from the Oronoco and its tributaries, a considerable current is found rushing into the gulf, which is thus said to have its level raised four or five inches above its usual height. The surface water at this time, which is during the months of July, August, and September, is also said to be fresh.

It was this current that Columbus met in his little craft that gave him so unfavourable an opinion of the gulf, and produced so much uneasiness to him. It is most violent during the rainy months, but a current generally sets into the gulf through the Serpent's Mouth to the northward, although trifling and unimportant during the dry season.

In the months of December, January, and February, the tide sets through the Dragon's Mouth from the northward, by which the current

is occasionally overpowered. The water of the Gulf of Paria is generally of a turbid and dull green cast, but it presents the most tranquil and glossy surface to be found anywhere. Embayed by land on all sides, the swell of the ocean is completely shut out of the gulf.

The winds are in general very light, never increasing to more than a gentle breeze, excepting in autumn, when its serenity is disturbed by a few transient squalls. It may be considered as a vast basin affording secure anchorage in all its parts; and no one in it need be alarmed about gales or storms, or accidents, for if they should get aground, the soft muddy bottom receives them without injury. The nights are generally calm and tranquil; the principal complaint being that of the want of wind, insomuch that coasting along the shores of the gulf is extremely tedious and troublesome. The waters of the gulf abound with fish, and numerous flocks of pelicans and terns may be seen here and there, busily employed in catching their prey.

Shaguaramus Bay is the usual place of rendezvous for ships of war visiting Trinidad, being six or seven miles distant from the town of Port Spain, the capital of the island. There is a snug little harbour at Gaspere, where H.M.S. *Espiegle* hove down and refitted; but the merchant shipping generally anchor opposite the town of Port Spain, where they lie in perfect safety.

The town of Port Spain is situated on the northern and western part of the island, on the northern shore of the gulf, on a very low part of the island contiguous to the water, and is flanked in the rear and on the sides by high ridges. The aspect of the town from the anchorage is exceedingly agreeable and pleasing; it is perfectly rural, and its general neatness, combined with the verdure and beauty of the surrounding hills, presents a rich, varied, and most interesting picture. The cleanliness and order of the town, and the air and comfort and respectability which it presents, besides the regularity and neatness of its houses, produce a most favourable impression on the Portuguese settlements.

It has been said by many that Port Spain is the best and neatest town in the West Indies. In my opinion it is far superior to that horrid place, Port Royal, or even Kingston; but it does not rival the capital of Curaçoa. Port Spain occupies about a mile and a quarter in length; it is well laid out, the streets being at right angles to each other, and of a good breadth, with a capital Macadamized road. The houses are of the second rate order, but comfortable, tradesman-like residences, generally of two storeys, with large projecting balconies. King Street, which may be considered as the principal, is of considerable width, having a spacious public promenade in the middle of it. This is enclosed by a parapet wall, and shaded on each side by lofty and elegant and umbrageous trees. At the angles near the entrance are placed a pair of areca palms, in a most tasteful and judicious manner. The regular and even trunks of those majestic trees form graceful pillars and very suitable ornaments to the promenade. They are surmounted by a waving plume of leaves, and their effect when first seen by a visitor is most gratifying. The houses in King Street

have a heavy dullness about them, arising from the lumbering balconies, which form a continuous line on either side; but this is amply compensated by the luxurious shade and shelter from the sun which is afforded by the piazza beneath them. The effect of these balconies on the eye gives the idea of a range of booths or stands at a race ground. The houses in the other streets are devoid of this appendage, and are in the common style, and the streets cannot become favourite promenades.

I do not recollect ever having seen so pleasing a distribution of gardens to the houses in any other town as that which I found at Port Spain. There they present a gay and lively appearance, which is peculiarly desirable in that climate. Many of the houses are built entirely of wood, and near the outskirts of the town many may be seen of the handsome cottage style, having only a ground floor. The houses are generally built of the limestone of the place, or of a brick made there; the slate that is used being brought from England, and the shingle from the United States. This shingle is commonly used in Canada. It is the wood of a resinous pine split into the form of our tiles, but considerable larger, and from the nature of it, is well calculated to resist the effects of the weather. The pieces being also split off, the fibres of the wood are unhurt and better calculated to keep the wet from soaking into it.

The town of Port Spain contains two churches, besides a Methodist chapel. The English church is a neat, commodious, and respectable building, and the Catholic church is handsome and ornamental, and equally large. The next principal building is the *cabildo* or town-hall, for the illustrious Board of *Cabildo*, or in other words, the Corporation of Port Spain. There is, besides, a small custom-house and treasury; a very clean airy market-house, a small fish-market projecting over the water, and a small efficient gaol are all the public buildings of the town. To mention them is to describe them. The King's wharf affords every convenience for landing passengers and goods, and it contains, besides, a little shabby hut, dignified with the title of the Public Newsroom.

The whole town is divided into five wards, each being under the jurisdiction of two magistrates, whose duty it is to maintain peace and order, to see that all the public-houses are shut by eight in the evening, to remove suspicious and idle persons, to inspect the weights and measures, and register the number of inhabitants yearly.

These guardians of the public safety at Port Spain perform their office well in one respect, and I have no doubt they do so in all others. But that which has fallen under my observation, relates to laws about retirement in the evening, and certainly the system of our ancient curfew has been improved on here. The streets after eight o'clock are remarkably quiet, and well they may be, for no one is to be seen in them. But the laws regarding the poor slaves are most amusing. These people may be permitted to dance till eight in the evening in any place that the chief of the police may please to approve of, but both they and coloured people being desirous of assembling their

friends together, to rejoice in dancing, or any kind of amusement after eight o'clock, must apply for permission to do so from his Excellency, the Governor, and any slaves found in the streets after nine in the evening, without a written permission from their masters, are apprehended and whipped the next morning at their expense! What a pity that the masters are not whipped in their stead! These are a sample, although not the worst by any means, of the laws that are enforced by the abettors of slavery. In fact I have selected these as the very lightest points of grievance, as I would give the slave-holder his utmost due. Such a state of society must be irksome to any well-disposed being. The slave-holders have recriminated on England, and have tauntingly held up our laws to public scorn and derision. There is no doubt that countenancing slavery by our laws, was the blackest spot in our national policy; but that has been removed, and Great Britain has no right to sully her fair name by legalizing such infamous laws at the solicitation of the mercenary slave-holder: the dawn of a better course has arrived, and reform has at length banished the odious appellation of slave from our colonies.

I was repeatedly requested to notice the happy condition of the slaves, and was repeatedly asked, where is their wretchedness. But I saw no such happy state realized; on the contrary, the temper in which the services of the slaves were commanded by the masters, fully convinced me that happiness was not their lot. "Why, our slaves issue their invitations on embossed cards," we were repeatedly told with exultation. "It is thus they give notice of their balls and parties, what better proof could you have of their refinement and happiness?" But this is a fallacious argument, and one that may be turned against those who offer it. For my part I look on it in its real light, that those slaves are the more capable of receiving civilization; that they are not so destitute of a sense of propriety as supposed by some, and desirous of imitating the superior forms of civilized life, which they see practised by Europeans: in fact, that they thus evince a natural course of manners and customs, to which their own are so far inferior, and a desire to follow them. Such a mode of proceeding I augur well from, and instead of accepting it as a reason that their slavery should be perpetuated, in my opinion it bespeaks them to be more worthy of their liberty. Such arguments betray the weakness of the cause equally as much as those which adduce the revelry of cyprians and libertines as the proofs of happiness. But what else can we expect from slave-holders against emancipation, whose judgments are biased by self-interest and debased by the ill effects of habitual cruelty.

The population of Port Spain, when we were there, consisted of eleven thousand, divided as follows: free blacks, 6000; slaves, 3500; white, 1789. The deaths at Port Spain, for the year 1829, were three hundred and sixty-seven, or one in thirty, which was considered as the result of a healthy season. The population of the whole island was 41,868, of which, free blacks were 1600; slaves, 21,000; whites, 38,000; being sixty-five people to every square mile; and the annual deaths were 1114, or one in thirty-six. The births annually were

1240, giving an excess over the deaths of one hundred and twenty-six in the year, and these statements may be relied on as strictly accurate, as I took great pains to investigate the subject. But it is always useful to connect one fact with another. The deaths at Trinidad are one in thirty-six annually. Now the mean for England is one in fifty-eight, and the births in Trinidad are one in thirty-three, and in England one in thirty-five. So that the increase of mortality is compensated by a slight addition in the numbers of births. Of the white inhabitants at Trinidad the French form the principal part, and it is the general language used in the shops. There are many Spanish families, and of our own people the Irish are the most numerous.

The law, as administered at Trinidad, is a glorious medley of uncertainty and confusion, a mixture of Spanish, French, and English. A person may be cited in either, according to the taste of the prosecutor. There is much litigation notwithstanding, mostly for the recovery of small debts. The taxes at Port Spain seem to produce great discontent. The house-tax is five per cent. on the annual rent, whether the house is inhabited or not, and house-rent in consequence is exorbitantly dear. Another principal tax is that on slaves at one pound per head; the wharf-duty, six pounds per ton, is paid to the illustrious *cabildo*, and a tax of three and a half per cent. on all imports and exports, all of which contribute to render everything dear at Trinidad. At Para we found fault with the copper currency; here the evil is remedied indeed, for no such thing as copper coin is to be seen. The lowest piece of money at Trinidad is termed a "stumpee," being a little mite of silver, value one penny farthing, the next in value is "half a bit," worth twopence halfpenny, the "bit" being worth fivepence. The next are quarter dollars, half dollars, "ring," and cut dollars, the latter having a piece cut out of the centre, in order that they may be useless anywhere but on the island, and hence may not be worth carrying away. A Spanish dollar has the nominal value of ten shillings, and two dollars are considered equivalent to a pound sterling. When we were at Trinidad the exchange was £245 for £100 sterling, or four and nine-tenths Spanish dollars for one pound English.

The inhabitants of Port Spain live somewhat luxuriously, and dine at late hours. The provisions are in general good, and the beef we were supplied with particularly so. There seems to be a large proportion of pork there, and poultry and fish are both abundant and good; but living there in general is very expensive. Monkeys are sold in the market, and eaten by many as a delicacy.

The principal subjects of complaint at Port Spain, for they must have their grievances like all other places, are the interference of Great Britain with the slaves, the want of a House of Assembly, and the reduction of duties on their produce. The first and last are decidedly unreasonable, and as to a House of Assembly, it can be matter of little moment to Great Britain, and might as well be conceded to them, for I see no reason why they should not have the regulation of their own affairs. But in admitting this claim, would it

not be more desirable that emancipation should be given by them to their slaves?

The colony of Port Spain is, I believe, greatly indebted to the late Sir Ralph Woodford for its present improved condition, who to the manners of a gentleman in his office united many qualities that well befitted the high station of Governor. He embellished the town and improved the country; but was occasionally arbitrary and abrupt in his manner. It is said of him that he once gave an instance of this which has never been forgotten, and I am not surprised at it, for it broke through a very ridiculous custom. It was the general practice for ladies after childbed to be churched in their maiden names. On one of these occasions, whether accidentally or purposely I do not know, Sir Ralph was present. The clergyman, in the usual course of the service, said, "Miss Mary Ann Cotton begs to return thanks for her safe deliverance in childbirth." "What's that?" said Sir Ralph, rising before the whole congregation. The clergyman repeated the sentence, "Pooh, pooh," said the Governor, "let us have no more of that nonsense!" The hint was taken, and the custom of churching the ladies as misses in their maiden names was dropped for their more homely ones as matrons. But I am not certain whether the officiating clergyman was not the greatest loser by the change, for to ensure the delightful sounds of the maiden name being pronounced in the ears of the congregation a *douceur* of a *doublon* was the usual reward.

Trinidad is regarded as comparatively healthy to some of the West Indian islands, yet it is subject to that scourge, the yellow fever, in its utmost virulence. Fever is at all seasons, and at all periods common; but the Michaelmas summer, or immediately after the heavy autumnal rains, is the most sickly season. Showery seasons are much more healthy than wet ones. Some years are very healthy, and others quite the reverse, without any assignable cause. We hear much said about caution, and some peculiar mode of living recommended to avert the danger; but it is not to be warded off so slightly. A regular and temperate life is no doubt conducive to health at Trinidad, as everywhere else; and the best preservation in this, as in all other danger, is the fear and love of the Almighty. There is a vast quantity of marsh land about Port Spain, and extensive swamps; therefore remittent and intermittent fevers are very common. Some of the hills near the town are dreadfully sickly, much more so even than the low grounds.

The communication between Trinidad and England is very good. Two monthly mails are made up in London, and considered due five weeks after sailing. Four days from Barbados to Trinidad is the average passage of the mail boat.

The governor of the island resides at a place called St. Ann's, about a mile and a quarter from the town, affording a pleasant ride to visitors. The roads in the vicinity of the town are very good, and the adjacent country exceedingly picturesque and interesting. The race ground is a fine clear space, and may not only be considered an ornamental, but a useful appendage to the town towards promoting the

health of the inhabitants. At a place called St. James's, a short distance from the town, are the soldiers' barracks, a remarkably elegant and commodious building, with nothing prejudicial to the comfort of those lodged in it. Belonging to it is an hospital which is well constructed, and is the most cleanly and as well conducted as any I have ever seen. I say this, with a full knowledge of many of our best infirmaries, not excepting even the admirable one at Derby. At the time we were at Port Spain in the *Chanticleer*, the barracks were occupied by the 1st Royals, and it was our good fortune to find in their officers all the estimable and noble qualities of generous friends.

The climate is hot and oppressive at Port Spain, the general temperature being 84° of Fahrenheit in the shade throughout the year. In fact the thermometer during our stay in one of the cool months, ranged frequently from 88° to 92° in the shadiest place, the temperature at night being as low as 76°, with very heavy dews. The breeze is neither constant nor regular, either in Port Spain or in the Gulf. Earthquakes are of frequent occurrence, but rarely severe. In 1815, the church and a part of the town were thrown down by one.

Port Spain is not without its melodies. The inhabitants have the advantage of multitudes of whistling frogs, which are even more melodious than its birds. Of snakes and reptiles they have their due share, many of the former being poisonous. They have also the boa constrictor, which makes off with his due share of deer.

The sugar-cane at Trinidad is the principal object of attention. While it is young and feathering, and beginning to flower, it forms a very pleasing object. As it grows, it first assumes the appearance of Indian corn, and when it has attained its full size it becomes like a large marsh reed. The long stems are cut down every year, and they shoot up again from the stalk for fifteen or sixteen successive years, fully as vigorous as ever! Hence the sugar-cane requires little care in its cultivation, and no labour beyond that of clearing the ground of weeds, etc. The leaves are good fodder for cattle; and the stem after the juice has been expressed from it, answers the purpose of fuel. A rich luxuriant soil is the best adapted for it, and the months of January, February, and March are the harvest months for cutting it. An average crop from an acre of ground is about a hogshhead and a half of sugar; when the soil is very good the return is as much as three or four hogshheads. But the sugar of Trinidad is not of good report.

The whaling season is also in January, February, and March, and there is an establishment for that business at Gasparee. The fish is the common hump-backed whale. Other fish are abundant in the gulf, the water of which is sometimes turbid and red, as if a large quantity of blood had been mixed with it. This must no doubt proceed from the streams of fresh water, which fall into the gulf bringing down large quantities of colouring matter found in the bark of the red mangrove. I was told that it proceeded from the spawn of fish deposited on the roots of the mangrove trees, but on investigating the matter, it proved to be from the bark of the red mangrove. This



wood is the best firewood of the country; it burns well even in a green state. The boats are always much stained that are employed in obtaining it, and ships' decks will be much reddened by it. The bark of the mangrove is a good astringent, and is used for tanning. It is of a red colour internally. The simple infusion of the bark is of a light red colour, sometimes like blood and water mixed. A solution of iron does not blacken it, but rather deepens the colour; alum has a very trifling effect on it. An alkaline infusion is of a vivid bright blood red colour, which dyes cloth a permanent red brown. The alkaline infusion, in dyeing, concretes with a gummy mass or pellicle, retaining all the fine colour of the solution. Neither the simple infusion nor the alkaline show the least disposition to fade, but for a considerable time preserve their virtues unimpaired.

Some years ago Chinese labourers were introduced into the island of Trinidad, with a view to free labour, and likewise to attempt the cultivation of the tea-tree. But the Chinese did not like Trinidad, and the tea failed with their departure. Lately an idea has prevailed of cultivating the nutmeg, and there are some thousand plants of this tree ready for distribution from the governor's garden.

The mud volcano in the south-west part of the island is well worthy of notice. It is usually called "The Mud Volcano," but would more properly be designated "The Mud Fountain." It is a circular basin of one hundred and twenty feet in diameter, standing about one hundred feet above the level of the sea. The surface of the basin is generally a little agitated and ruffled, having numerous little mud cones of a few inches elevation, from whence air escapes in bubbles. The whole however is subject to violent paroxysms, attended with a rumbling noise, a detonation, and vomiting forth of columns of mud and water. Sometimes also, in these ebullitions a few shells are thrown up. The water of it is brackish, and the temperature below that of the atmosphere. A thermometer plunged into it several feet below the surface indicated the temperature of 65°. Sulphuretted hydrogen is sometimes emitted from it, and also a number of round hard balls of earth, composed of clay and pyrites. Heat does not appear to be the cause of this curious phenomenon, and therefore when earthquakes may occur, they are probably without volcanic agency, since any gaseous matter pent up may give rise to vibrations of the earth.

But there is nothing more extraordinary in the structure of the whole island of Trinidad than the extensive pitch formations it contains. The part of the island in which the pitch grounds as they are called are found, is about twenty-four miles from Port Spain, at a place called Point Breea. There, it is said, they are fifteen hundred acres in extent. On landing at Point Breea, which is done on a sandy beach, a person is naturally surprised to see large black rocks of pitch towering above the sand, and pieces of them rolled smooth and plentifully about the beach like pebbles. Every step he takes is on pitch ground. Extensive masses of it are also found presenting a broad and smooth surface. In some places the road has been entirely made over these masses, sometimes passing between large pieces rising

several feet above the rest. In some parts it seems as if a barrel of pitch had been upset and left to mingle itself with the soil. The pitch in general is merely a superficial coating on the surface of the ground, and nothing but strict examination would allow one to believe that the fertile scene around is flourishing on pitch grounds. But it is so; cottages and gardens are implanted on it, and vegetation thrives on it most luxuriantly. The pitch ground is not one continued mass of this substance, but is a series of broken and irregular patches of it; the soil intervening for considerable spaces. After walking up a gentle ascent of a mile and a quarter from the sea over the pitch ground, the visitor arrives at an elevated basin which is called the pitch lake. This is a vast mass of pitch naturally collected in the form of a lake. The surface of it, moreover, assumes the appearance of one, and it is completely surrounded by a wood. The greatest length of this lake is about half a mile, and its greatest breadth about half a furlong.

Numerous pools of water abound on the surface of this lake and the deep cracks and fissures in the pitch are filled with it, in which frogs and little fish are seen sporting about. This water is perfectly fresh and good. The pitch appears in some parts to be of great depth, if such an opinion may be justified from the cracks and fissures. It is hard enough to sustain the weight of a person walking on it, but becomes a little softened by the heat of the sun, so that persons at a little distance from each other have been known to disappear by sinking into the hollows formed by their own weight. On the confines of the lake vegetation is abundant and vigorous, and pine apples grown on the pitch grounds are said to be remarkably good. Many plants also grow in the pitch itself without a vestige of earth for their roots; but they are stated to have been more barren formerly than at the present time. The name of pitch lake can only with propriety be given to this small spot, for by considering the whole as a lake, a person naturally expects to find one very large lake of pitch, which is not the case.

The question naturally arises whether the lake is to be considered as the basin or origin of the whole, from which the sides of the hills and the adjacent country have been overflowed. I think appearances are against such a conclusion. A little to the northward of the pitch is a well or fount of liquid tar. But the pitch itself is not confined to the lake, for there are submarine beds of it. Midway between Naparina and Point Brea is a very extensive pitch bank, with no more than ten or twelve feet water on it, the approach to which may be generally known by a strong unpleasant odour and by the water having pellicles of tar on its surface. Sometimes at low water ships have grounded on this bank, and should they drop an anchor there, the anchor and cable are found covered with pitch. The water about the pitch bank abounds with fish, and fish-pots are generally set on it. At the Serpent's Mouth there are some reefs formed of pitch, which occasionally increase and again disappear, and are supposed to be connected with the mud volcano.

The pitch itself has a dull black colour, it is a solid substance,

breaking with an even fracture, easily scratched by a knife ; it emits a peculiar nauseous smell like coal tar ; it sinks rapidly in salt water, and makes a dull brown mark on paper. At about 310° Fahrenheit it fuses imperfectly into a soft mass, more like the softening of coal than the melting of pitch, for it does not run into a flaccid mass. Spirits of wine, nitric acid, strong alkali, had no effect on it whatever. It differs therefore in chemical composition from pitch, and is *incapable of being used for the same purposes*. It is used in mending and repairing the roads at Trinidad, and for cementing and binding stones under water. It has also been employed to obtain gas. Some years ago, when speculation soared with prying eye over the surface of the globe for treasures, the pitch-lake came into notice, but was soon disregarded.

Whatever speculations may be indulged in about the origin of this substance, its affinity to coal cannot be doubted, and notwithstanding the authority of the names in favour of the theory respecting the vegetable origin of coal, it is by a remote analogy only, and philosophers have never yet made one atom of coal by their processes. It is a very vague inference, because hard woods become charred by submersion, to say that coal is formed by them. In respect to the circumstance of finding the remains of the vegetable kingdom in the coal strata, we may observe on this pitch lake and ground a very remarkable coincidence.

The remains of the coal-field exhibit the vegetation of a hot climate and a moist situation ; the vegetation of a country abounding in ferns, arundinaceous plants, as the bamboo and palms. About the pitch lake all these abound in a remarkable degree ; they are in fact, growing on it, and with them is a palm called "the pitch lake palm," from the peculiarity of its thriving there. Supposing, therefore, that coal was of similar origin, it may have been similarly situated with respect to vegetation, and we have no difficulty whatever in discerning how it is, that vegetables become so abundant in it. If the pitch-grounds at Trinidad were now to be covered or buried beneath other rocks, the vegetables already collected in them or about them, would hereafter occasionally be found. We have seen that there are pitch-beds in the sea in a soft state, sufficient to receive the anchor of a ship, and therefore shells of marine origin may be found in this substance.

In the deep fissures of the pitch-lake are pools of fresh water, containing fish, and at a very short distance from them the marine beds may all receive salt water fish. Besides this, a river may run over the pitch grounds, and then we shall have every variety. Hence some very puzzling and opposite appearances may be found in juxtaposition. The coal formations of our own country may probably have been originally in the same state as are now the pitch-grounds of Trinidad, which would tend considerably to explain some of the present anomalous appearances. The pitch grounds in my opinion are primordials, and do not result from the conversion of vegetable matter. The votary of the pitch grounds would tend to elucidate the subject of organic remains found in the coal strata, and I am satisfied that a very surprising conformity would be discovered between them. No one dreams of the pitch-lake being formed from the surrounding vegetation.

### OUR LIGHT DUES.

THE important and interesting question as to whether or not our Coast Lights should be exhibited free of charge to the shipping of all nations has been recently discussed in the House of Commons. It is an important question, seeing that the amount paid annually by British and Foreign vessels entering the ports of the United Kingdom amounts to the sum of £325,000, and it is also an interesting one—both in a national and international sense.

Under the old system of international commerce, when, instead of consulting chiefly the interests of their own populations by enabling them to purchase the necessaries and luxuries of life in the cheapest market, it was thought by the rulers of the civilized nations of the world, that the aggrandizement and welfare of their own countries were best advanced by taxing all foreign products; the idea of making the night illumination and the buoying and beaconing of our coasts self-supporting, by levying a toll on all vessels, whether of our own or foreign nations, using our ports and harbours was a consistent one. The question, however, now arises whether such a system, under the altered circumstances of the times, may not be both inconsistent and short-sighted.

In a Conservative nation like our own, which is Conservative, not from timidity, but rather from solidity of character, from caution, and from a natural veneration for a "great past," it is not surprising that national customs, habits, and institutions should often continue for a longer or shorter time after they have become unsuitable or inconvenient.

And the greater the importance and the larger the sphere of operation of any such institution or custom, the longer it is likely to maintain itself against the growing conviction of its unsuitability; the same law of inertia operating to produce that effect that in the case of natural objects causes a large or heavy body to continue to move for a longer time after having been set in motion than a smaller one, or to be with greater difficulty suddenly arrested in its course.

Not that it follows, however objectionable or unsuitable an institution or custom may have become, that it may not have been admirably adapted for its proper function or use during the proper term of its existence.

A notable case in point, which at once suggests itself for illustration, is that of the late East India Company; the grandest corporate body that ever existed, which conquered and maintained for more than a century an empire, and whose officers, both civil and military, by their genius and prowess shed a lustre on their country and on the age in which they lived. Yet its armies and territories have, with advantage, been transferred to the British crown to be one of its brightest jewels.

In like manner the suitability of the present system under which

our "Lights, Buoys, and Beacons," are now managed is questioned, on the ground : 1st, That the duty is a national one, and that the cost of its performance ought to be borne by the whole nation and not by one class alone, the owners of ships and their cargoes. 2nd, That as most other maritime nations light and buoy their coasts from their national funds, and ask no contributions from foreign nations to aid in their support ; that it is therefore unbecoming in this country to act less liberally towards them. 3rd, That the present system of placing the duty of lighting and buoying the coasts of the United Kingdom on three private corporations, viz., The Trinity House in England, the Commissioners of Northern Lights in Scotland, and the Ballast Board in Ireland, is both costly and inconvenient.

The whole question was brought before the House of Commons, on the 4th May last, by Mr. Headlam, the Member for Newcastle, when it was discussed by eminent men on both sides of the house ; and although that gentleman was induced, at the request of members of the Government, to withdraw the motion, the further consideration of the question is undoubtedly only postponed.

In considering it, we will take the divisions of the subject in the order above enumerated.

1st, That our coast lights, etc., should be maintained at the cost of the nation, and not of a section of it only.

Those who advocate the change contend that, as a great maritime and commercial nation, and, moreover, being an island, or rather two islands, and therefore with no other ingress and egress to and from our shores than our great highway the sea, our commerce with the outer world is so manifestly for the benefit of every consumer in those islands, and therefore of every person living in them, that all works necessary to facilitate the approach to them is of so national a character, that the expense of providing the same should be borne by the whole community, and not by the shipping interests alone ; the latter course being, they maintain, precisely as if a tradesman were to charge his customers for providing access to his own door.

They further state that incidental evils arise from the present system, as, for instance, that vessels frequently sail in ballast in preference to taking in a profitable cargo, or partial cargo, in order to avoid the light dues. And thus foreign vessels are driven from our shores, remaining, for instance, at Havre, or other of the Channel ports, instead of crossing to England for a return cargo, being solely deterred by the heavy dues which they would have to pay.

Another complaint of the present system is that trading vessels alone are taxed, and that pleasure yachts and men-of-war have the benefits of the lights, buoys, and beacons, without contributing towards their maintenance. And again, they demur that, whereas there have been vast savings from surplus funds arising from the dues on merchant shipping, yet those savings, instead of being invested, and the interest employed in lighting our coasts, have been expended on matters altogether unconnected with shipping.

The arguments on the other side, on this branch of the question,

cannot be more clearly expressed than in the words of Mr. Lowe, the present Chancellor of the Exchequer, in reply to Mr. Headlam:—

“ This payment is called a tax. It is not really a tax. It is a payment received for service conferred. The money spent on lighthouses, etc., is spent for the benefit of the shipping interest—to save the property and the lives of seamen. That being so, the next question is, who pays them? Of course, in the first instance, they are paid by the shipowner. This being an indirect tax ultimately paid by the consumer, the money must be advanced by some one, and the person advancing it is the shipowner. There is nothing harsh or unfair in that. These dues are not collected from persons whose ships are in ballast only. They do not apply unless freight is carried, and, therefore, the shipowner has them repaid to him in the freight.

“ People talk of taking money out of the ‘ Consolidated Fund,’ as if it found its way there of itself. But if you have to take £325,000 out of the Revenue you must get it from some other quarter, and it would be exceedingly difficult to get that sum collected in a way that would operate more justly.

“ There is also this practical advantage in this tax. Shipowners apply for lights, and the Government are willing to put them up if the shipowners are willing to pay the dues, and thus the Government have every security that the lights are needed; whereas, if the money to provide them came out of the General Revenue, it would be nobody’s interest to check unnecessary expenditure, and the Government, by misrepresentation, might often be induced to put up lights in wrong places.

“ Then, as for its collection, nothing could be cheaper or more convenient, for it is collected at the end of the voyage, when there is a general settlement of accounts, and it therefore appears to me to realize all the elements of a sound tax.”

But, secondly, it is maintained that, inasmuch as that most other maritime nations provide lighthouses, etc., at the national cost, it is unworthy of the greatest and wealthiest maritime power in the world, to act more illiberally and inhospitably to other countries than they do to it; and that we ought rather, as we have already done in the matter of Free Trade, to have taken the lead of other countries in such a course, instead of lagging behind them.

Some of the arguments advanced under the last head apply also to this one, and as already stated, foreign vessels are not unfrequently deterred altogether from entering our ports, in consequence of the dues levied on them; but, in addition, the advocates of the proposed change take up higher ground, and looking to the honour and fair fame of our country in the eyes of the world, demand that we should act at least as generously to them as they do to us.

Mr. Headlam, in the recent debate in the House of Commons, reminded the members that a Committee of their House, appointed as far back as 1845, on the motion of Mr. Hume, had recommended the same course as that now advocated, and that another Committee in 1860 affirmed the resolutions of the previous one, and expressed the

opinion that the lighting of the shores of this country was an imperial duty, and recommended that the nation should take on itself the cost of the lights, etc., and assume their management. He also stated that Mr. Reverdy Johnson, the late American Minister in England, when invited, on a public occasion, to use his influence to promote free trade in the United States, replied by remarking on the manner in which this country treated the Americans with respect to light dues.

Another member, in illustration, quoted the case of a firm trading between Baltimore and Bremen, which in 1868 paid no less than eighteen per cent. on their gross freight carried, as light dues, in consequence of calling at Southampton, and stated that he knew of two, if not of three companies, who now, in order to avoid the light dues, called at Havre instead of Southampton.

In reply, on the other side, the Chancellor of the Exchequer, Mr. Lowe, whilst acknowledging that by relieving foreign shipping from light dues, a greater inducement was held out to it to enter our ports, it seemed that the same argument would apply for giving foreign vessels free admittance to our docks, that he knew of no limit to such an argument, and that such a course would be, in reality, a system of benefits to foreign commerce; adding that he was unchivalric enough to think it a considerable advantage, that nearly one-half of the expense of lighting our shores, etc., should be borne by foreigners instead of by ourselves.

The President of the Board of Trade, Mr. Bright, expressed the same opinion, and stated that on similar principles he would feel a difficulty in defending any tax.

Mr. Shaw Lefevre, after going over other ground, stated that tonnage dues were levied in France to an amount equal to, if not exceeding, our light dues, but which were reduced in 1867, and would be still further reduced in 1871, admitted that the inducement thus offered to foreign vessels to go to a French port, instead of an English one, would at the latter period be deserving of serious consideration.

He further added that—

“Whatever might be the opinion of the House as to the policy of raising the means to maintain the lighthouses by light dues, and however desirable they might think it to throw the cost of the lighthouses on the country, he hoped they would not assent to the terms of the motion. When other nations did not treat us generously; when almost every other nation put protective duties on the import of our manufactures; when the United States charged forty-five per cent. upon them, and thereby levied millions; while American shipowners did not pay more than £10,000 of our light dues, he thought the House would not express the opinion that the practice of levying light dues was unworthy of us as a maritime nation. When other nations dealt with our manufactures as we dealt with theirs, then it would be time to put on record such a motion as this; but other countries could not throw stones against us, and therefore it was not right that we should commit ourselves to the declaration proposed.”

Thirdly, the present system of management by three private corporations is impugned.

Mr. Headlam, in introducing this part of the subject, remarked that—

“The history of the lighthouses was eminently characteristic of the country. It showed no forethought on the part of the Executive. The Government did nothing to contribute to it. They commenced by granting the privilege of erecting lights along the coasts to the Lord High Admiral. On its surrender by Lord Howard of Effingham, means were taken to vest it in one of the great City companies—the Trinity House. They had the power of putting up lights along the coast, and no doubt they did some valuable service, and they spent their money like gentlemen; but they charged the shipping infinitely more than the cost; the surplus they employed partly in badly-administered charity, and partly in very magnificent hospitality. They were subject to no control; no account was taken of their funds, and they acted in the spirit of the times in which they lived. The Government never controlled or investigated the expenditure; but from time to time they made special charters to friends of their own for the erection of private lighthouses along the coast, with powers of indefinite taxation over the ships that passed them. Then came the question how these powers were to be got rid of, and Government, which had made such improvident grants, considered them as vested rights which ought to be bought up; and the unfortunate shipping interest had to pay not only for the *bonâ fide* work done, but for all the charities of the Trinity House, for all the improvident leases, and for all the hospitality of the Board. Such was the state of things down to 1834, when the subject was taken up by the late Mr. Hume, who well deserved a tribute of admiration for the sincerity, earnestness, and perseverance of his exertions in relation to the lighthouses of this country and the charges on the shipping interest. Mr. Hume grappled most successfully with the subject. He obtained the appointment of a Committee in 1834, which did eminently good service. Then first commenced the improvement of the system. They made a report well worthy of perusal. The lights in the different parts of the United Kingdom were conducted on an entirely different principle. There was a division between the public general lights and the local and harbour lights. He admitted the distinction made by that Committee, and it was with the public lights alone that he proposed to deal. The Committee recommended that improvident leases should be bought up and paid for out of the taxes imposed on shipping, and that power should be given to the Trinity House to buy up the private lights. During the interval between 1836 and 1845 the Trinity House had bought up many of the private lights, and brought things into a better state. The recommendations of that Committee were embodied in the Act of 1846, which gave ample powers to the Trinity House. Mr. Hume, not satisfied with the great boon which had been conferred on the trading portion of the community by the exertions he had made, returned to the subject in 1845, and got a most important Committee appointed to investigate the subject.”

To that Committee we have already referred.

Another member, Lord Bury, whose opinion may be considered to



fairly represent those of the advocates of a change in this department, stated that—

“ He did not think the gentlemen who now administered the funds of our lights, buoys, and beacons, were proper persons for discharging such duty. Although, in his opinion, the Trinity Board ought not to continue to be maintained simply on account of its antiquity, he felt bound to admit that, barring its wasteful expenditure of public money, that body had done its work very well, if not in a systematic manner. Formerly, he was told, the funds were administered with considerable malversation, but at the present day none of the old abuses existed, and he only imputed to the Trinity Board incapacity to carry out what it had no machinery to carry out. He should like to see it converted into a great office of State, under the control either of the Board of Trade or of the First Commissioner of the Navy. At present it was certainly not a proper tribunal for deciding matters of this kind. There ought to be a large preponderance of the scientific element in the body which administered our lighthouses, but the Elder Brethren of the Trinity House consisted almost exclusively of merchant captains. He now came to Scotland, where the matter was under the Commissioners of Northern Lights, gentlemen who were by no means the persons to whom the administration of our lighthouses should be intrusted. They consisted of provosts, baillies, and the sheriffs of all the maritime counties of Scotland, who were not the persons to whom the people of that country would voluntarily intrust the management of their lights. So, again, in Ireland, the Ballast Board consisted almost exclusively of members of the Corporation of the city of Dublin. He next came to the authorities who administered the local lights on our coast. These were the Harbour Conservancy Boards on various parts of the coast, and each of those bodies did exactly what seemed right in his own eyes, not acting on any regular or uniform system, but making between them the whole thing one mass of confusion. In some instances, unless they happened to have a book with the sailing regulations of a particular harbour, it was impossible to tell when it would be safe to enter it. With all that uncertainty and confusion the clearness and simplicity of the French plan contrasted most favourably. When anybody approached a French harbour he saw before him a mast with a yard on it, and on the mast were one, two, or three balls, the position of which told him in a minute what the depth of water on the bar was, and whether it was safe to enter the harbour. That system was understood throughout the whole of France. The noble lord also contrasted the French system of buoys and beacons with our own, showing the former to be far superior to the latter. He pointed out that the signals of the Trinity House indicating safety and danger were exactly the opposite of those of the Commissioners of Northern Lights. The system adopted by the Board of Admiralty also varied in every one of its ports. His third point was that that most imperfect system, as at present administered, was most wasteful. The expenditure of the Trinity House, the Commissioners of Northern Lights, and the Irish Ballast Board was in

round figures £278,000, to which had to be added the expense of maintaining steamers, £26,000, or in all about £304,000. Then there were salaries of the home establishment, law charges, salaries and wages of the district establishment, and also salaries and expenses connected with the three central offices. These amounted to £64,807, or nearly one-fourth of the whole expenditure on lights. He thought everybody would agree that that expenditure would be enormously reduced if, instead of three distinct Boards—the Trinity Board here, the Ballast Board in Ireland, and the Commissioners of Northern Lights in Scotland—we had one compact Board, consisting of naval officers and scientific men, and sitting in London. What he wished particularly to impress on the House was this, that there ought to be one great central authority, that that central authority ought to be the First Lord of the Admiralty, or else the President of the Board of Trade, with a reconstituted Trinity Board under him, to which all those points relating to the buoyage and the lightage of our shores ought to be referred; and that the whole system ought to be conducted upon one great plan, worthy of our position as one of the first maritime nations of the world.”

On the other side, Mr. Shaw Lefevre observed—

“That with reference to the management and expenditure of the Trinity House, his right hon. friend in his very able statement had entirely passed over the legislation of 1854. But in that year the Trinity House, as far as expenditure was concerned, was placed under the Board of Trade, and from that day to this not one single sixpence could be, or had been, spent by the Trinity House without the authority of the Board of Trade. Therefore, for any wasteful or injudicious expenditure, it was not the Trinity House, but the Board of Trade, that was to blame. The position of the Trinity House, however, in other respects remained the same. For example, it could appoint and dismiss its own officers; but as the conscience of such Boards was said to reside very much in their purse, and the Board of Trade had complete control of that, it had also full control over the conduct and actions of the Trinity House. In fact, the Trinity House had become a sort of department of the Board of Trade, though in some respects, perhaps, the connection was not so close as might be desired. In the Report of 1861, which had been alluded to, he believed that more complaint was made of the economy of the Board of Trade in respect of lighthouses than of anything else. Since 1861, however, large sums had been expended in building new lighthouses and improving those which already existed. The hon. member for Liverpool was a member of the Royal Commission, and he believed that hon. gentlemen would allow that the Trinity House had brought up the lighting of this country to an equality with that of almost any other country in the world. Great credit was due to the present management of Trinity House, and more especially to the Deputy Master; but his opinion coincided with that of his noble friend as to the present organization and relation of Trinity House and the other Boards of Management. As he had stated, there were four bodies

that had to do with lighthouses. The Scotch and the Irish Boards were independent bodies, but they were subject in some respects to Trinity House, because they had no nautical men upon them; and if there were any difference between them and the Trinity House the Board of Trade acted as arbitrator; and as the Board of Trade had complete control over the purse of the Trinity House, it decided any financial question. It had always seemed to him that there was great perplexity in the present arrangements, and that it would be better if there could be an amalgamation of these bodies, and one Board appointed which should have authority over the lighthouses of the country. This had been the opinion of successive Governments, and attempts had been made at different times to remedy the evil; but it had been found difficult to do so, mainly on account of the jealousy displayed by the Scotch and Irish Boards when it was proposed to amalgamate them with Trinity House. The constitution of the Trinity House Board must be admitted to be unsatisfactory. It was too numerous, consisting of twenty members, who received £300 a year each; and it could not be doubted that it would be far better that there should be few members, that the lesser number should devote themselves wholly to the business of the Board, and that they should be better paid. The Board of Trade was now in correspondence with the Deputy Master of the Trinity House, and it was hoped that arrangements would be made which would to some extent remedy the existing evil. He had himself already pointed out that the accounts of the Trinity House were not sufficiently explicit, nor rendered in an intelligible form; but he hoped the next accounts would be presented by the Board of Trade. At present dues were paid into the Mercantile Marine Fund, out of which the expenses of the lighthouses were paid; but it seemed to him that it would be much better that the dues should be paid directly into the Exchequer, and that the estimates submitted yearly by the Trinity House and the Scotch and Irish Boards should be submitted to the House and votes taken upon them. In that way the expenditure on the lighthouses would be subject to the direct control of the House instead of that of the Board of Trade."

Mr. Gladstone, the Prime Minister, followed on the same side, endorsing the opinions expressed by the other members of the Government.

After thus quoting the statements of the very eminent men who have publicly discussed the question in their places in Parliament, and having already almost exceeded the limits of our space, we must curtail our own observations on it.

When such men as Mr. Gladstone, Mr. Lowe, and Mr. Bright are opposed to the change which is now, not for the first time, advocated it must be admitted that there is something to be said on both sides of the question, for we feel that in reality the ministerial opposition arises from the difficulty and perhaps impossibility of providing, at the present moment, for so large an amount from any other less objectionable form of taxation.

We feel, however, persuaded that the question is only postponed, for we consider the whole weight of the reasoning is on the other side.

It is not denied that the tax is ultimately paid by the consumers, for the same may be said of all taxes, yet very many have been swept away, for similar reasons to those which make this one objectionable. It is inconvenient, it hampers commerce, it is unequal in its pressure, it is inconsistent with our amended commercial system, it is behind the age, as compared with the custom of other maritime countries, and the management of the work is costly and more or less inefficient, from the division of authority and the anomalous constitution of the several Boards which control it in the three divisions of the United Kingdom.

We consider, therefore, that it is only a question of time as to when it will be abrogated, and that the whole provision and management of our "Lights, Buoys, and Beacons," will be provided at the national expense, and placed under the direct management and control of a renovated Trinity Board, with a responsible head under a suitable department of the Government. And we trust that the time is not far distant when such an important change may be brought about.

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#### AMERICAN LIFE-BUOYS.

FOR originality of idea, ingenuity of invention, enterprise in carrying it out, and encouragement of the inventor, commend us we say to our friends of the United States of America. Our present number contains a proposed revolution in the sails of ships, having no doubt certain advantages. Our former pages bear testimony in the same category, and what has forced on us the Monitor system of ship and its iron armour, and now the iron ship herself, but the heavy calibre of cannon adopted by our brethren across the Atlantic? For the march of improvement, and departure from our old common place routine, we may be thankful to the Americans; although they have obliged us to abolish our stately three deckers, and those magnificent line-of-battle-ships with their batteries of double and treble rows of artillery, and condemned them to the shades of oblivion. And even satisfied as we have hitherto been with our life-buoy (Lieutenant Cook's, we think it is), considering it as perfect as need be, or at all events, as those departed specimens of our fleet, here is another *life-buoy*, an out and outer, in the way of American inventions; throwing our old ones into the shade among those old fashioned affairs of other days. Verily, we shall expect to find occasionally hereafter, colonies of shipwrecked emigrants on the ocean wave floating about in large companies, keeping up, perhaps, friendly communication by signal, or in friendly close conversable-position, drifting where the wind may blow them, or the current may send them, and the effects of the gulf stream, shewn not only by drifting to our shores debris of timber and wreck, but also these American life-buoys with their passengers of the living or

departed mortals who have escaped the wreck to battle with the ocean wave, unless picked up by some passing ship, or washed on our shores. Certainly there are chances for and against life on occasions when these life-buoys are used. Being in the track of ships they may be picked up while provision lasts, and life is thus preserved, and eight days afford a good chance. Sharks might even be puzzled by them. However, it seems likely by the following account which we find in that intelligent print, the *Daily News*, that custom will not be very long in establishing the use of this truly American invention of which we read thus:—

That part of the Thames immediately in front of Cremorne Gardens was the scene of an exciting spectacle yesterday evening, 3rd of June. What is said to be a wonderful triumph of American invention was exhibited in the presence of several thousand persons, who lined the river from Battersea Bridge up to Cremorne Gardens, and plied little craft of every conceivable shape while the experiment, which was the cause of the gathering, was being made.

The apparatus, which was first brought under the notice of the English public last evening, is intended for the rescue of shipwrecked persons. The inventor, we are told, is Captain J. B. Stonor, of New York, a gentleman of independent fortune, who served throughout the great civil war, and his object, it is said, is not to make money, but to perform a truly philanthropic work. Two Americans—a gentleman and his wife—have been commissioned to explain the nature of the apparatus; and the way in which they are obliged to do so is certainly novel and interesting. They first slip their arms through cork jackets, and then insert their persons in a loose india-rubber overcoat, which covers the whole of the body, except the hands and face, around which it is tightly secured. India-rubber weights are then attached to the shoes, so as to enable the wearers to maintain a perpendicular position and perfect equilibrium, and being thus equipped they jump into the water.

They carry with them a tin case, in shape somewhat like a buoy. This article is divided into two compartments, and in the upper one they manage to pack biscuits, a flask of brandy, a revolver, Bengal lights, Roman candles, and some Liebig's sausages. Smoking and newspaper reading are not luxuries which a shipwrecked individual would probably enjoy in a "life on the ocean wave;" but American originality provides for them, and adds cigars and a newspaper to the tiny freight. The lower compartment of the case contains about six quarts of water, which is drunk through an india-rubber tube, closed by a metal screw top. The provisions which are thus carried are supposed to last eight days, and if a shipwrecked person should fail to be rescued before the end of that time, he has the consolation, when dying, of knowing that his body cannot sink, that his will, papers, and jewellery are safe, and that his friends will know how he quitted the world. The invention has been patented by an American company with a capital of 300,000 dollars, and the price fixed for each suit is £7.

The public will not have an opportunity of investing in the apparatus for some months, inasmuch as a series of experiments in most European countries are contemplated with the view of testing the success with which the invention is likely to be attended. The Prussian Government have, it is stated, expressed their determination to adopt the apparatus, and it is said that in consequence of the encouragement received in France, America, and elsewhere, 50,000 suits are now in process of manufacture.

Mr. and Mrs. Craddock—the two Americans to whom we have referred—remained in the river nearly half an hour, and showed very little exertion beyond what was required in using little india-rubber paddles which form part of the apparatus. The experiment was conducted under considerable difficulty, Mr. and Mrs. Craddock being prevented from moving in the water by the clustering of the boats, whose occupants were deaf to earnest protestation. They both opened the buoy-shaped case, helped themselves to some of the contents, fired a revolver, and exhibited lights, and a red flag bearing the word “Eureka.”

The time occupied in donning the dress is three minutes and a half. Captain Stonor hopes to provide all passenger ships with these extraordinary dresses, being ready to lend them for £1 each for every voyage, and to provide each ship with a man capable of explaining their utility.

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#### LONDON SEWAGE MANAGEMENT BY THE BOARD OF WORKS.

THE greatest mistake of the age, we will venture to say, has been the establishment of an authority by which the sewage of the largest metropolis in the world has been allowed to be cast into the river Thames. While the strongest measures have been adopted for preventing this river from being polluted with sewage *above* London, all below it has been left to chance! We can hardly believe it possible that a Board should have ever been invested with authority to do what it may please with the sewage of London when it must necessarily increase year by year, till at length it will become an intolerable nuisance, and will drive every one from its neighbourhood. And yet this is a state of things preparing, and will inevitably take place with the Thames. While at places on the sea coast of the English channel even, steps are being taken to prevent the practice of allowing sewage to flow into the sea, where it is washed *backwards* and *forwards* by the tide, the London people are blind enough to the consequences of allowing their Board of Works to transfer their sewage to the Thames near Barking, where it is ranging up and down with the tide in the same manner as on the sea coast. The *Daily News* says:—

London is threatened with a difficulty which has already greatly troubled the authorities of many provincial towns. The appointment

of a Commission to inquire into the state of the Thames, as it is affected by the great Outfall Sewers at Barking, is simply the result of persistent complaints to which we are bound to give attention. The people down the river say that we have taken the sewage from under our own noses to put it under theirs. They say even more than this. A memorial from the principal inhabitants of Barking declares, that the opening of the Northern Outfall Sewer necessitated the removal of the Coastguard station, and has almost filled Barking-creek with pestilential mud. The fish have all disappeared from the river, bathing has been rendered impossible, and where there were formerly foreshores of hard shingle there are now only banks of solid sewage. The Thames Conservancy Board, too, seems to have taken alarm. The Thames itself is being filled up with manure from London. A bank has been formed in the river which is said to have reduced the depth of water at ebb tide from twenty-one feet to ten feet. All this has arisen from the discharge of the High and Middle-level Sewers; what it will be when the third—the Low-level Sewer—is opened, the memorialists are horrified to imagine. Of course they ask that the Attorney-General may apply to Chancery for an injunction to prevent the discharge of the sewage into the Thames; and the Government have granted a Commission to inquire into the whole matter. This is just the one point in which science seems to be behind the necessities of the age. It cannot yet solve the question how to utilise this form of waste. Is it that we actually render it practically useless by the manner in which we dispose of it? Must reform begin at the beginning? It is quite certain that somehow or other the sewage must be kept out of our rivers. Yet what to do with it as sewage seems an insoluble problem. Is it possible that our fundamental mistake is in making it sewage at all?

These Barking memorialists, however, do not complain in the character of navigators, but as residents desiring to live unmolested in their houses. The filth and refuse of the largest city in the world is deposited at their doors. There are banks within a few hundred yards of their houses composed of solid sewage, six, eight, and ten feet deep. Foreshores which were formerly hard shingle are now pestilential mud, and what were formerly valuable fishing grounds are now spawning beds of fever and cholera. All this has happened since the discharge from the High and Middle Level Sewers of the metropolis began, and the evils will be exaggerated when the Low Level Sewer is in operation.

It seems strange that after all the cant about sanitary reforms with which the public has been bored for years, we should have to record such facts as these. The Act under which the Metropolitan Board has been working, and under which its members justify their proceedings, is one for the *purification*, not the *pollution* of the Thames. It does not prescribe or sanction any particular plan, but leaves the Board under full responsibility to those it may injure, even empowering the Home Secretary to proceed against them if they create a nuisance, and this the Barking memorialists entreat the Home Secretary to do.

As to what to do with it, the question is what we *must* do with it: and the answer is simply to distribute it about the country in the best and least offensive manner that we can. It must be done rather than our Thames should be blocked up by banks of filth—and which a few years will inevitably do.

Our own pages have pointed to a remedy for this huge evil, so far back as in 1859—but the fact that we are absolutely allowing the Board of Works to go on unchecked with a system of wholesale pollution of the Thames to the plague and pestilence of a people resident on its shore, which system the greatest care is taken to prevent being done to other people at other places on the banks of the same river, is absolute folly; and if not stopped, will itself produce effects that will command the attention of authorities in a manner not to be evaded. As the Barking people truly say, “we have taken the sewage from under our own noses to put it under theirs.” So much for the clear sightedness of the Board of Works with all their clever *levels*. Those who persist in this high and low level process of ridding London of its sewage must surely be destitute of all reasoning powers, or they must have seen long ago that a *perpetual* huge stream of that sewage which they are casting into the river always at one special place, must eventually have the effect of converting the river there into a fluid of its own nature, which the lazy flow and ebb of the tide there gives ample opportunity for the heavier particles of it to be deposited there, and to form those huge banks, as well as the offensive strands so loudly complained of. But let them remember that every day that they persist in this suicidal proceeding ensures a more severe recoil of its consequences upon them, and that it will appeal to them in terms so peremptory as not to be neglected.

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#### CAPTAIN MOODY'S FLOATING LIGHT-SHIP.

WE are enabled by the courtesy of the Editor of the *Mechanics' Magazine* to lay the following sketch and description of a proposed iron floating lighthouse before our readers, with our own best wishes for its success. We shall not venture to express any opinion on the restless and ever active opposition that is exerted by the sea in its attempt to tear away everything that is exposed to its action.

The very fact of the lighthouse now nearly completed on the Wolf rock augurs but badly for the success of such a structure. Still it seems to be the invention of a sailor to whom the vagaries of the fickle element are not unknown; and whether abortive or not the means whereby it is proposed to overcome, or rather perhaps to avoid them, well deserve to be consigned to history in the pages of the *Nautical*, to which it really belongs.

Were it possible to estimate the number of vessels which are annually preserved from shipwreck through lighthouses and lightships,



and the consequent number of lives spared, and value of the property saved from total loss, the aggregate sum would no doubt very much astonish even the members of the Statistical Society, clever though they be at figures. Lighthouses however, cannot be built everywhere, and the members of the Trinity Board have admitted that the present form of lightship needs improvement. What we want is a lightship which can always carry her light, and can do for the ocean what the present gas lamps have done for our streets—enable us to see our way about, and not grope along, as in the days of the old oil lamps. The engraving which we this month present to our readers illustrates an invention which is a long stride in that direction. It is a lightship, novel in its construction, so novel that it is difficult clearly to describe it so as to do justice to the inventor, Captain J. Moody, of St. Maurice Villa, York. However, we will try. We understand the inventor is an old sailor, with more than fifty years of seafaring experience, and he seems to have derived the idea of the form of his vessel from the star fish. There can be no doubt whatever that when we go to nature, and borrow our forms and designs from her works, we copy from the best models: so in this case. The four rays or bows which proceed from the body of the ship present a floating area of immense size, and give the Moody lightship advantages it is impossible to gain from an ordinary one.

If our readers will refer to the engraving, they will perceive that there is a circular central hold, from which proceed at right angles four equal rays. The extreme ends of these rays are not fine, like the bows of an ordinary ship, but round. The rays are covered by sloping sides, extending to the centre of the vessel, which finishes off by an outward curved bulwark, 4ft. in height, so as to throw off the spray from the waves as they glide over the sides or run up the bows. The bottom of the lightship is flat, or nearly so, until near the edge, when it is gradually sloped to lessen the resistance when moving through the water. The slip is built in watertight compartments or bulkheads, eight being diagonal and running from the centre of the edge of each bow and the centre of each curve to join the ninth or circular bulkhead, which goes round the centre of the ship, connecting all the others. Over this central bulkhead is the upper deck. The light can be carried on a tower or mast, or, as in the engraving, upon an open column—light but strong—made of angle iron. This column rises from the centre of the ship, the weight being placed over the centre of gravity. The engraving represents a lightship of the following proportions:—Length and breadth from ray to ray, 65ft.; height of light above the sea level, 60ft.; depth of hold, 12ft.; depth from water line to deck, 9ft.; bulwarks, 4ft.

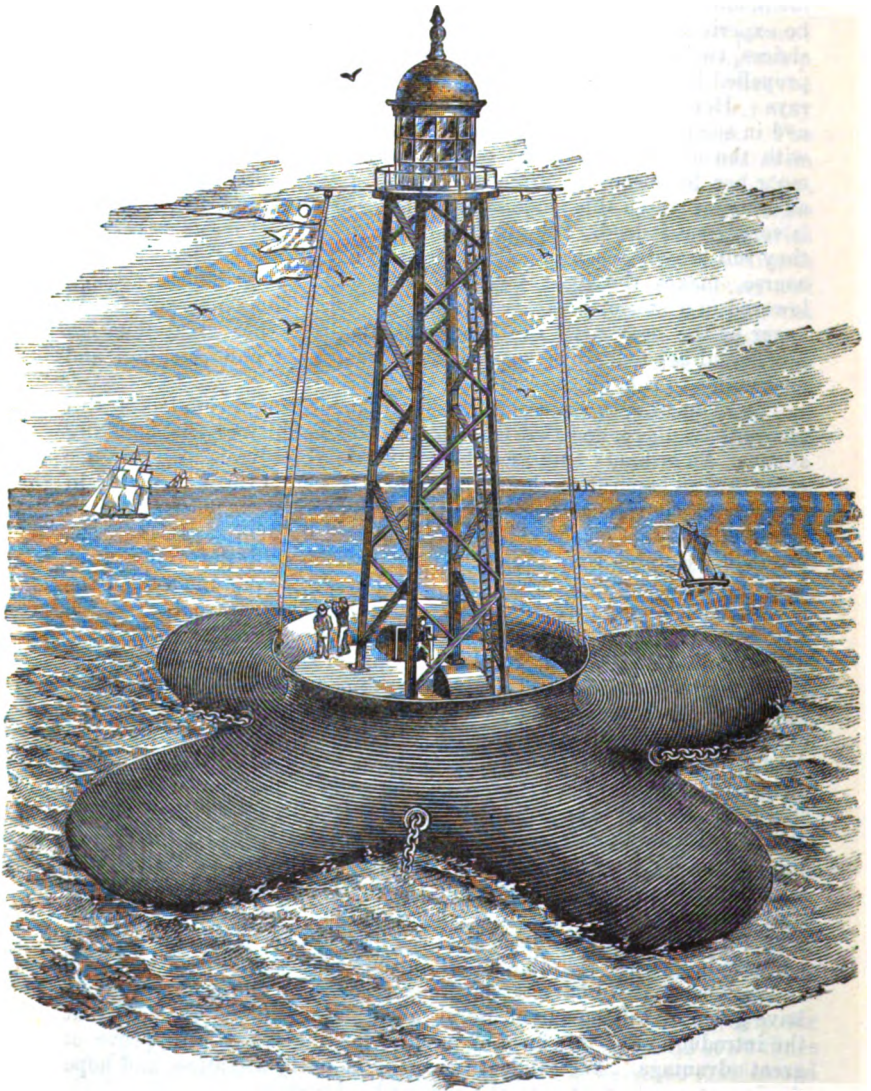
There is ample room in the rays and in the centre of the ship, for berths and for all other purposes. The lightship would be at all times comparatively dry, as her form would deflect the waves, so that instead of shipping heavy seas in rough weather, like an ordinary ship, the waves would be deflected and glide under and over her rays. Large scupper holes are placed round her bulwarks to carry off all waste

water. It is proposed to fit her up with sails or small hydraulic engines, so that she could be readily moved from place to place, or be under control and perfectly manageable should she from any cause break adrift, which is not very likely to happen. No difficulty would be experienced in steering her. This will be done by means of eight sluices, two at the end of each ray or bow, one on either side, but if propelled by sails then a steering apparatus at the end of one of the rays. Her hawse pipes will be placed in the inner part of each curve, and in such a form that the cable can be always paid out in a line with the angle of the sides of the hull. The inventor proposes to moor her by means of three anchors in a triangular position. The advantages which this mode of mooring gives to the Moody lightship is very great indeed. The great defect in the present lightships is that they roll heavily when in a cross sea with a windward tide. This, of course, makes the light unsteady, and often necessitates its being lowered in a storm, when it is most needed. This, however, would never be the case with the Moody lightship, as her great flotation power and her four rays will prevent her rolling and pitching, and enable her to ride on the water like a gull.

The easiness with which the Moody lightship would ride has a still greater advantage, and that is it reduces the liability of her breaking adrift. An ordinary ship in a heavy sea is very liable to snap her cable, not so much from the constant strain as from the jerking strain every time she rises after a plunge into the sea, but there would be no strain of this sort on the cables of the Moody lightship. In her case, the cables running from the central body of the ship, the four rays or bows are free to follow the motion of the waves. We understand the inventor has tested this by a small boat 12ft. from ray to ray, which has been riding at Southend for fifteen months, and is there now. This boat has no deck covering, yet, although she outrode the winter, she never took the slightest harm nor shipped a pint of water. We have seen a report from the pier master at Southend, who writes:— "It is with much pleasure I write to tell you how admirably your model rode out the storm here on Thursday and Friday, the 13th and 14th inst. (May) without shipping a pint or even a drop of water. We had a tremendous sea; wind was about N.E. To give you an idea of the gale, I would name that there were eighteen large screw steamers brought up off here, not liking to proceed further on account of the violence of the gale. I would name that her cable during the gale was only a very small piece of bass (the same kind of rope that fishermen use). I will give her another trial the first southerly gale we get, but am certain she will ride like a gull on the roughest and highest seas."

We trust that we have satisfied our readers by the description we have given of this novel yet useful invention. There is no doubt that the introduction of this form of base for floating vessels will prove of great advantage. We think it is worthy of every attention, and hope the inventor will meet with the success he deserves.

## CAPTAIN MOODY'S FLOATING LIGHT-SHIP.



## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 335.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen Mls	[Remarks, etc. Bearings Magnetic.]
31. Gironde Intended changes	1. Point de	la Palmyre	Var.	...	12	Est. ? Red and green alternately.
	2. Off Point Coubre	Light Vessel	F.	...	8	
	4. Palaise & 5. Terre Negre	Pontailiac	... F.	... ...	... ...	Discontinued. Changed from white to green. When changes are made, further notice will be given.
32. Naples Port	Military Pt	St. Vincent Mole	F.fl.	...	10	Est. 15th May, changed to red. Seen outside, flash twice a minute.
		St. Vincent Mole	F.	46	2	Est. 15th May, changed to red from white.
		St. Gerar's Mole	...	52	6	Est. 15th May, changed to green from red.
33. Pt. Itacolomi	Entrance of River	Maranham	...	...	...	Re-est. 28th November, 1868.
34. Hassal	Proposed	Changes*	...	...	...	of black and red beacons.
35. Pakefield	Gatway	Changes*	...	...	...	in buoys arising from alteration in positions of South Newcome and Barnard Sands.
36. Yarnouth	Roads	Changes*	...	...	...	in position of Scroby Buoys.
37. Killala Bar	Buoy on	Outer edge	...	...	...	
38. Port Royal Sound	Bay Point Light	discontinued	...	...	...	From 30th June.
Savannah Riv.	Tybee Knoll	East end of Town	...	...	...	To be lighted in a vessel on 1st June.
Bay Light	East end of Town	discontinued	...	...	...	From 30th June.
Brant Point Beacon Light	Nantucket Harbour	In front of Brant Pt. Light	...	...	...	From 30th June, discontinued.
Clark's Point	New Bedford Harbour	Removed to the Port N.W. angle of it	...	...	...	From 15th June, improved.
Old Point Comfort	Beacon Lt.	... ..	...	...	...	From 30th June, discontinued.

F. Fixed. F.fl. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

\* The Seaman is referred to the Admiralty Notices of these for the positions of the Buoys, etc., being too lengthy for our small limits; our space being reserved for Lights and their Changes.

## A SAFETY YACHT.

WE have a nautical riddle for the reader's solution in a rather mysterious account sent to us of a vessel, on, we hardly know what principle to call it, but which possesses, in its most eminent degree, that of safety, called the *Water Spirit*, or *Water Sprite*, as she would seem to be, built by Mr. W. Lawton, on the Dee, for a Mr. Melling. But we will take one or two passages from the paper we have received concerning this strange craft—from which the reader may make out her description, if he can! After dilating on the three principles of *buoyancy*, *stability*, and freedom from leeway, or yawing off her course, the *safety yacht* seems to scorn any symmetry of form, being satisfied with the motto, "handsome is as handsome does!" So in exchange for all beauty and symmetry, she is to secure for herself these advantages:—

"The danger of stranding or foundering on a bank is done away with." She can never sink (no, not even when scuttled) but she cannot resist destruction "by being dashed to pieces on rocks; but even then life may be saved."

"She is able to run over banks and shoals, cross bars, and make harbour when another vessel cannot approach it, for she *can accommodate herself to draw only one foot of water*, although of the size of fifteen tons."

The principle of her construction is said to combine everything required for pleasure, at one-third the expense of construction (of other craft, we presume)—built of pine wood, without ballast, and with a mast so stepped as to produce no strain; carrying 300 square feet of canvas, for three feet of a midship section, and therefore the utmost speed is expected!

And her principal virtue is, "that she will navigate the ocean as easily as the smoothest or shallowest river;" with cabin accommodation (on deck), for from what follows about *casks* and *pontoons*, no one seems intended to go below; but she will thus carry provisions and water for a voyage in those pontoons, which as their contents are consumed will be "bunged up," and "contribute to her safety!"

Now if here is not enough to satisfy our readers as to the wonderful qualities of Mr. Melling's *Water Sprite*, we must refer them to her builder, Mr. W. Lawton, of Denna Pier, to satisfy their curiosity, who seems to have taken his principle of construction from the flat, sprawling character of the River Dee itself.

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 THE SUEZ CANAL.

THE following will be acceptable to our readers:—"Sir, As rumours have gone abroad to the effect 'that the opening of the Suez Canal has been put off to the 15th November, and now to the 1st January, 1870,' will you permit me, through the medium of your journal, to inform

the public that the nature of the agreements entered into with the contractors, combined with the actual progress of the works, give every assurance that in the month of October next the Suez Canal will throughout its entire length have attained the required depth of twenty-six English feet, with a width varying from one hundred metres (327 English feet) along the greater portion of the canal, to sixty metres (196 English feet) at three other points along the line, as specified in the plans. But, at the request, and in order to suit the personal convenience of his Highness the Viceroy of Egypt, the official inauguration has now been fixed to take place on the 17th November next. I may further mention that all shipping, whether mercantile or naval, conveying passengers as visitors for the inauguration will be permitted to pass through the canal free from any payment of canal dues. It will be necessary, however, for such vessels to be at Port Said not later than the 16th November, in order to be ready to go through the canal from Port Said to Lake Timsah on the 17th, remaining the 18th before the town of Ismaila, where his Highness the Viceroy of Egypt will give an entertainment. The following day the Bitter Lakes will be traversed, and the Red Sea reached—viz., on the 19th November. Such is the programme just issued by the Suez Canal Company, to which I beg to direct the attention of your readers, and more especially of those who intend to honour us with their presence on this interesting occasion.—I am, etc.,

“ DANIEL A. LANGE,

“ Director and English Representative of the

“ Suez Canal Company.

“ 21, Regent Street, London, June 24th.”

To THE EDITOR OF THE *Nautical Magazine*.

#### NAVIGATION.

NAVIGATION CARDS.—In a former volume we have made our readers acquainted with these very useful results of Captain (now Admiral) Shadwell's active exertions in assisting his brother seamen on the important subject of navigation. We are glad to see Mr. Potter, the busy Chart-agent of the Admiralty, publishing a new edition, in which we find the important additions of Professor Chauvenet's contributions to nautical astronomy for latitude by altitudes near the meridian, and also his Lunar Method. These cards in fact contain not only all the problems used by the seaman in the astronomical process of determining his ship's place on the ocean; but also the refinements of that process.—Thus Chauvenet's lunar method and that by three altitudes near the meridian; also Robinson's method, renewed by Jeans for latitude; so that in the compass of a dozen cards the navigator has before him these, his faithful monitors, in the shape of a small portable companion, which he will occasionally dwell on at those leisure intervals left him from other pressing duties for determining his ship's position. We recommend them to our readers as invaluable companions, in the shape of silent friends.

A BREAKWATER FOR ALEXANDRIA.—A correspondent of the *Levant Times*, writing from Alexandria on the 10th instant, says:—“One of the most important events I have to report to you this week is the definitive signature of the contract between the Government of Egypt and a party of English capitalists, for the construction of a breakwater at Alexandria. When this work is completed Alexandria will be one of the finest and safest and best harbours in the world, and the great facilities which will then exist for loading and discharging vessels will probably keep a great portion of the through traffic to India from being diverted to the Suez Canal.”

“RENDER TO ALL THEIR DUE. \* \* HONOUR TO WHOM HONOUR.”

Name.	Ship.	Reward.	Services.
Captain Mignot	<i>Arabie</i>	Binocular Glass and £2 to each of crew of her boat.	For Saving one of the crew of the <i>Windsor Castle</i> (Annana Hoaze), supposed foundered at sea.
Captain Guisto Gerolamo	<i>Maria Luigia</i>	Telescope.	For Saving Master and crew of the <i>Leah</i> , excepting three men.
Capt. J. Sorensen	<i>Oscar</i>	Binocular Glass.	For Saving Master and crew of the <i>Tweed</i> , abandoned at sea.
Capt. J. Winsor	<i>Magio</i>	Telescope.	For Saving the Master and crew of the <i>Othello</i> .
Captain T. G. Wragge	<i>Dolphin</i>	Binocular Glass.	For Saving crew of the <i>Rosebud</i> .
Captain W. Farquhar	<i>Diadem</i>	Gold Watch and Chain.	For good services to the Insurers.

The foregoing have been presented by the British Government. The latter, Captain Farquhar, by the Mutual Insurance Company of London with the following letter:—

“New York, May 26th, 1869.—Dear Sir,—The undersigned insurers on the cargo of your vessel, on her late voyage from Guantanamo to this port, have noticed with much pleasure the ability displayed by your protecting our interests when in circumstances of great peril, and desirous of expressing the approval of your course in a suitable manner, have to ask your acceptance of the accompanying watch and chain, that you may bear with you our testimony of your faithful services. Wishing you prosperous voyages in future, and confident that you will always display the same regard for the interest of those who may entrust their property to your care,—We are respectfully, your obedient servants, John G. Paulinon, President, of Sun Mutual Insurance Company; and John Pappauv-her, Universe Mutual Insurance Company.”

The ANUARIO! arrived.

THE  
NAUTICAL MAGAZINE  
AND  
NAVAL CHRONICLE.

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AUGUST, 1869.

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A FESTAL ANNIVERSARY AT THE TRINITY HOUSE.

A BANQUET is one of the occasions offered in this country for the display of those little effervescences of mind, which they say, do certain people as much good mentally as the viands of which they partake do to the animal system physically. Perhaps more; for who knows the value of discarding a load of pent up matter from the mind, that finds its way into the world on these occasions; to some of small import it may be, but to others 'tis of more value than even gold.

Happily the leaves of this journal are free from such displays, and it can solace itself among those abundant subjects of information, which do not concern the political world and can

— leave all meaner things  
To low ambition and the pride of kings.

and therefore it is in this temper, and in no political one, that we are tempted to glance here at the annual banquet given by that important, yet non-political corporation of the Trinity House, on the 3rd of July; presided over by H.R.H. the Prince of Wales, for his brother Prince, the Duke of Edinburgh, absent in command of H.M.S. *Galatea*.

There was much said on this festive occasion; and although the Royal President acknowledged he was no yacht sailor, the Corporation members, to whom he addressed himself, had the satisfaction of being assured that they might always reckon on his services to them, whenever they could be usefully applied: an assurance which they might rely on will be hereafter taken up by the Duke of Edinburgh. Indeed, we consider our friends of the Corporation fortunate in having their affairs presided over and encouraged by the Royal Duke who is absent and his brother, our Royal Prince, who so graciously takes his vacant place.



It is the lot of many naval officers to have witnessed many changes in the composition of the Board of Admiralty; some to their liking, and others to their disliking; and they well know that of late years the principal precept of this Board has been contained in that word called "economy"! Who has not heard of the "besom of economy," which was to sweep away we know not what of sinecures and their *et ceteras*! And so it was righteously and indiscriminately used; and foremost in the category fell the Royal yachts, long since consigned to the ballast basket. In fact all those economical proceedings were included in the words of a facetious couplet of an old esteemed friend,

"Tempora mutantur, et nos mutamur ab illis,  
The poet sang of old, and so it still is;"

But never was that besom so heavily applied as it has been of late! and why? the reason's plain. In those days of old, our navy was formed of wooden walls. Alas, in these days those walls are of iron! Why so? we need not stop to ask. Yet such is the fact. "Lo," said the economist, "Othello's occupation's gone." The work of the artificer in wood is more than half gone, we must have him of iron. As was truly said in our volume for 1867, in allusion to the severe changes brought about in the former year by this substitution:

"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 deranged,  
Those heavy guns in even line arranged,  
Tier upon tier in terrible array;  
The pride of England in her proudest day,  
Those noble ships, now, all must pass away;  
Yee, wooden walls, alas, must all go by,  
And iron now the place of wood supply!"\*

How true all this is, although written two years and more ago, the Channel fleet bears ample evidence. And yet so radical a change in the strong arm of England was not to deprive her of that strength. She has looked to it well. The momentous fact has had its due effect. We are open to invasion every where, but we have as much iron as any other country (as was truly said in that little essay), and now we have an iron fleet instead of one of wood, although that fleet has borne heavily on our old dockyards.

But we have more than this, we see that Board of Admiralty to which we have alluded, presided over by a gentleman who although no sailor, goes to sea with our fleet of the *Naval Reserve*, to judge for himself of its condition, the ships, and their crews. So that Mr. Childers in returning thanks for the navy, on the occasion which is the subject of these lines, spoke, as we may truly say, never did a First Lord of the Admiralty before this occasion. He spoke from his own

\* Reprinted in a little poem called "Retrospect," published by Simpkin and Marshall, 1867.

observation when he said, "he did not think it was possible to overrate those improvements (the great improvements of the day) for there was nothing in which the navy so much excelled as in the application of great principles in matters of scientific improvement. It was now more powerful than it had ever been in the history of the country, and we might well be proud of it." Those indeed are brave words, and we need not take them as those of a landsman, as those of the First Lord of the Admiralty, but as those of one who spoke them, it is true in that capacity, yet who was accompanied by his first sea lord, that experienced officer, Admiral Sir Sydney Colpoys Dacres. This is indeed no ordinary satisfaction to record, as we proceed with our purpose.

The next feature which commends itself to our notice on the occasion of this banquet, is the speech of H.R.H. the Prince, in reference to the Trinity House, wishing "Prosperity to the Corporation;" and who can do otherwise, to one of the most ancient and useful of our corporate bodies? The Prince observed, "It would be almost superfluous in me to make any remarks on the Corporation or its present or future development. It has existed since the time of Henry VIII., and ever since that time the community has taken the deepest interest in its prosperity. It has also been connected through its honorary brethren with some of the most distinguished men, and many of those honorary brethren are present this evening. Its object is to protect our ships and our sailors, and that object is never forgotten. As the First Lord of the Admiralty has just said, while the navy is called on to protect our commerce, the Corporation of Trinity House is called on to protect our sailors and our ships. The first electric light put up in this country was that at Dungeness; and the Wolf Rock\*, which has long been the terror of our sailors, will before long cease to be so. This will show that the Trinity House authorities are anxious to do their duty, and to maintain their great name, which, I am sure, is honoured here and in other countries." On which Sir Frederick Arrow, the Deputy-master, was most justly and warmly complimented.

The lighthouse building on the Wolf Rock, which said rock had always scorned the indignity of being marked by a buoy as in former days, and even declined carrying a beacon, was well alluded to by the Prince as the work in hand, and how many others have preceded it, from the Eddystone downwards—their name is legion.† But among those of our own times we could point to that invaluable light, the Bishop, one at Guernsey, the Needles, and Beachey Head, as some of the more modern works of the Corporation, besides various floating lights.

\* In our volume for 1868 is a sketch of this lighthouse in its progress, and in that of 1866, page 449, a notice of its commencement.

† It is a pretty strong proof of the violence of the sea about the Wolf Rock, that every buoy laid down on it by the Trinity House was successively washed away, as may be seen by a reference to our former pages, showing thus the very uneasy berth they had. It was this fact, and the instability of the beacon placed on it, along with the consideration of its very dangerous nature, that determined the Trinity House to light it.—ED.

United as every one must be, in wishing prosperity to our excellent Corporation of the Trinity House, in their labours of love in the care of our ships and their crews, we shall not sully their fair and well-deserved fame by allusion to the discordant topic of politics which followed, when the Houses of Lords and Commons were coupled in a few well spoken sentiments. And although we may not be without our views as to right and wrongheadedness in these matters, we claim the right of complimenting the Chancellor of the Exchequer when he said, "The Deputy-master of the Trinity House has told us in language, which only does justice to his subject, of the great service which this ancient corporation has conferred on navigation; I only wish some similar institution could be devised for buoying and lighting the channels of political life. If Sir Frederick Arrow could only see his way to put certain marks upon the rocks and shoals and difficulties that beset us on every side, I can assure you, he would well deserve the gratitude of the political, just as much as he deserves the gratitude of the nautical world at this moment."

This was admirably said, but alas, how often is the old saying proved right, about "too many cooks spoiling the broth," in the endless subjects of politics, a process now going forward and alluded to by the Chancellor, when he said, "We see our performance reviewed by no friendly eyes (except in the House of Commons, he might have added), we see it criticised, altered, and remodelled according to the notions of our critics;" which remodelling there is satisfaction in knowing need not be accepted, might also have been observed. But let us leave this stormy sea of politics in which we find ourselves, and we will claim the Prime Minister's (Mr. Gladstone's) assistance to get us out of it. Too well he knows its storms and tempests, and gladly hails the happy opportunity, such as that afforded by this banquet, where persons do not meet as separated by different political opinions, but in a friendly way each other "to encounter on one of those few days on which peace reigns, and the lion lies down with the lamb, enjoying such hospitality as the Trinity House gives;" and drawing a picture of political life, he contrasted its partial approval with that in which the labours of the Trinity House are more generally approved of. Mr. Gladstone must on this occasion have felt all the importance of the truth of the motto we have above quoted, and should it turn out true, as it seems to have done, that really "too many cooks (do) spoil the broth," he will no doubt find himself prepared for the occasion.

But there is another gentleman whose expressions on this occasion we have more to do with than any of the foregoing, and that is the President of the Board of Trade. "The Maritime and Commercial interests of this country" were thus responded to by Mr. Bright, when he said, "I must confess that since dinner terminated, I have been actuated by something like a feeling of envy. I have envied the speakers, who have gone before me, in the facility, the fluency, with which they have been able to perform the task that had been allotted to them. I believe there is no test so severe, to which a speaker can be put, as to be called on to make a speech which is not absolutely

interesting on an occasion like this. There is some compensation in the kindness with which you have received my name. But if the duty be difficult and puzzling, it is at any rate honourable, for I hardly know any thing that can be more honourable than to be connected with the commerce and maritime interests of this great country. I believe without any of that national boasting for which some people say we are famous, it may be truly said that the commerce of this country vastly exceeds that of any other country in the world; and that we not only lead the world in the magnitude of our commerce, but we lead the world by the intelligence, and the wisdom of the principles on which our commerce is conducted. After struggles with which many of us are familiar, we have succeeded at length in establishing this principle;—that whatever comes into this country shall pay only the duties deemed necessary for revenue: that no duties shall be paid for the purpose of bestowing on any section of the people any privilege, or any exclusive advantage. That I take to be a principle of immense service to the country, and if we could only imagine that it was adopted by every other mercantile and commercial country in the world, it is impossible to conceive how much the face of the world would be changed, and how much blessing and advantage it would bring to all the people of all countries.

“I have sometimes imagined what a scene would be presented if any man could, from a height, survey all the land and waters of the globe. He would see men in every land preparing something to find its way to this country. And if he would look over the waters he would see ships driven by the winds, or what was more potent by steam, bringing from thousands of sources the produce of the industry of man in every country of the world to the shores of this country, to supply the necessities, comforts, and luxuries of the various classes of our people. I am not sure that at this moment, speaking only with regard to commerce, the maritime power of England—the merchant fleets of England, are not greater in proportion to the merchant fleets of all other countries, than they have been at any other period of our history. I am not certain that I should overstep the mark, if I said that the merchant ships of England were equal, or nearly equal,—I have heard say they surpass in number and tonnage, the sea-going merchant ships of all other countries in the world. This is an extraordinary thing if it be true.

“But whether it be really true or not, there can be no doubt that with regard to foreign commerce, with regard to ships on the ocean, this country has a position at this moment, which, I believe, she never held before, and one, I think, we may be justly proud of.

“When our commerce spreads her daring sail  
And yokes her chariots to the gale.”

I delight, therefore, to dilate on the grandeur of our merchant navy; and I agree with Mr. Cardwell, in hoping that the time is coming when the resources of this country may not be extended to an extravagant expense in maintaining our military establishments.

“Surely if there be any place in England in which we ought to feel ourselves in a certain sort happy and content,—if we are this great maritime nation—if our fleets cover every sea—it ought to be under the roof of the Corporation of the Trinity House. Whatever may be said of self-election or antiquated institutions, or the slowness with which old establishments come up to the wants of the times, little of that, I believe, can be truly said of this Corporation. But whatever may be said, we will all join in this—that there is nothing more beneficent, nothing more Christian, nothing more divine than the works of mercy which this corporation exists to perform. And if it were necessary to give any proof of the feeling of the people in regard to it, a fact stated by a gentleman in the other room is one of the most pleasing nature. He said that, he believed, by and bye the institution for the establishment of life-boats would be self-supporting,\* sustained by the voluntary contributions of the people. There is no part of these islands, I believe, no class of our people, no meeting that could be assembled, no company in which we could discuss questions connected with the Trinity House, where their system of buoys, beacons, and lighthouses, to provide for the safety of mariners, would not meet with sympathy. For myself, I never could comprehend why such great navies should be kept up.† I should forego all the luxuries of life rather than be tempted to see them by crossing the sea. Such are the perils of the deep, that I confess I never hear the wind howling, or see the storm raging, or the clouds drifting, but I think of my countrymen in stormy seas. Therefore I have a strong sympathy with the Life-boat Institution, and no less sympathy with the great and benign object of this Corporation.

“I know not what may be the fate ‡ of this Corporation. I hope it may so come up with the requirements of the times, and keep up with them, that it will never require to be disendowed or disestablished. The subject to which I have referred leads me to hope that the industry of our country may be sustained, that its commerce may be wider and wider diffused, that with an economical government (it is long since we had one), that with an economical government, and the efforts that, I trust, will before long be made to support a general and a universal education among the people, I hope that our people may grow in all that is good, and that our country, great and glorious as she is, will be destined for long generations and centuries to hold her place among the nations:—and we would add also, that our noble Trinity House may in those ages preserve, by her good works, that high station which she holds among our corporations.”

\* We have all along been considering that this was a foregone fact. We have always considered the Life-boat Institution as supported by “voluntary contributions.” But no doubt the President of the Board of Trade is better informed.—ED.

† We never heard of our admirals on foreign stations complaining of too many ships, but rather observing that there was enough to do for those they had.

‡ Whatever may be the “fate” here alluded to, the duties of the Trinity House must still be done by some Board. No disendowing or disestablishing is surely to be applied here.

Now we have followed the President of the Board of Trade in his speech at the Trinity House for two reasons, besides that of being non-political; and these are, firstly, that it is replete with sensible remarks conveyed in pleasing language, illustrated by a good occasional figure of speech, and does that justice to the Trinity Corporation which it well deserves; and, secondly, that there is a subject belonging to it which has our sympathy, and, we believe, that also of every Englishman; a subject which was not touched on by the President of the Board of Trade, when on such an occasion it might have been looked for, and this is the employment of *foreign* seamen in our mercantile shipping, to the exclusion of our own!

As we have said, we fully agree in the well merited encomiums bestowed every where on the doings of the Trinity Corporation; and when those encomiums have fallen from the Prince of Wales himself, nothing more need be said. Therefore we may turn at once to the second subject of our remarks. This is not the first time, as we shall shew, that we have made allusion to it. It is a sore place of some standing, and sore places too frequently remind us of their existence till they are cured. But of this we seem as far off as ever.

Was there no little elf that could perch himself on some prominent ornament of the festive board opposite the President of the Board of Trade—no little elf bearing the words “Foreign seamen make one-third of the crews in your merchant shipping,” so as to be plainly visible to the gentleman, while he was conjuring that delicious picture which the President of the Board of Trade could mentally see before him, from that supposed elevation, which gave him a view of the whole mercantile fleet of England, each ship pursuing her business course; “bringing from thousands of sources the produce of the industry of man in every country of the world to the shores of this country; to supply the necessities, comforts, and luxuries of the various classes of our people.”

What a glorious occupation, and what a glorious picture for a President of the Board of Trade to paint. And yet was there no such friendly little elf as that to which we have alluded, to remind the great orator, who was solacing himself with the prospect he had defined of England’s enormous fleet, to remind him of that unfortunate fact which he could not see, that one-third of the crews of those ships is composed of foreigners! and therefore, that however large that number of ships might be in the eyes of the President of the Board of Trade, the number must be reduced by one-third! Such a reduction would certainly go far to spoil the brilliant result. But who cares for that? The answer is that trade is secured:—it is huge, wonderful, enormous! Granted it is so; but don’t call those merchant ships engaged in it *English*. Therein lies the mistake. Whatever their number, large as it may be, it must be reduced by one-third, because one-third of the crews of all those ships are *foreigners*.

But there is more than this in that unfortunate fact which was lost to the view of the President of the Board of Trade. The different countries to which these foreign seamen belong have occasion to

rejoice at their men being thus employed. They are learning the seaman's duties, and they will man their own fleets by and bye, and exercise in them the experience they have gained in the merchant ships of England! Good schools they are too, although they may occasionally be rather rough.

But there is the unfortunate fact still in the background. Those crews which are indebted to us for their seamanship may be employed against us in ships of war; and thus give us the reward of our pains in teaching them their duties as sailors, for the sake—not of them, but for the sake of our having an enormous, a huge, an almost overwhelming trade! Thanks to the President of that wonderful Board who has thus obtained it.

And yet there is still more than this mischief of making seamen that we are preparing for ourselves, for the sake of increasing our trade, by any and every means we can employ. What becomes of those whose places these foreigners occupy? They may get employment where they can, is of course the ready answer.

Well, then, when we would realize the pleasing couplet quoted by the President of the Board of Trade, we are reminded that the ships transporting the commerce which he is so proud to see them representing on the ocean are not manned by British seamen only, but that a foreign lot are largely spread among them; and that just so many of our own seamen are wandering elsewhere to pick up employment where they can. And if the merchant shipping of this country forms so large a class as to "surpass in number and tonnage the sea-going merchant ships of all other countries in the world," we trust for our own sakes, that, before such conclusion is arrived at, their number be fairly reduced by one-third. Any Englishman, as well as the President of the Board of Trade, might well then rejoice in the position his country occupies among the nations.

There are many points in the position of those seamen in their ships that have been pointed out for remedy in the pages of this journal. The Act of Parliament regarding them, has yet to be made worthy of the country to which it belongs! and we shall regret, if when it is taken up to be amended in earnest, that it should again appear imperfect. Several things at present closely affecting the seaman's comfort in his ship have been pointed out in these pages, but which would not be supposed to have entered the mind of the Judge of the High Court of Admiralty, in acknowledging the good wishes entertained for "British ships and British seamen" on this occasion, even at the Festive Board of the Trinity Corporation.

In conclusion, we shall add our own wishes for the future prosperous career of the Corporation of the Trinity House, and that they may hereafter meet with the same happy expressions of approval of their works as they have hitherto done. Fortunate they are in one point, which is the real character of their duties. May they prosper in doing good, without experiencing those unhappy, ruffling acerbities of mind, which could not be repressed in all the speeches of all the political guests on this occasion.

But politics form a thorny subject and it is no matter of surprise, that in handling them, men have their fingers pricked in a manner which they do not easily forget. Very different indeed is the duty of the Trinity House, one which may be summed up in the words "doing good," or as the President of the Board of Trade designated its duty "Works of Mercy." Still politics are doing no good, when they occasion recollections which on a "neutral and festive occasion like this, induce a guest to observe, that it is unwise to introduce difficult subjects upon which men may differ, when it is unnecessary to obtrude them on public notice." We have not seen throughout these proceedings any signs of difference or difficulty on any subject discussed at this meeting; so that this concluding remark itself looks something like what it was intended to forbid.

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#### COALS USED IN STEAMERS, No. 2.

(Continued from page 362.)

SIR,—In your last Magazine, I had occasion to broach the subject of the coal supply to the Marine Service, and I closed my paper (to which you so kindly gave insertion) by asserting that it is vitally a scientific question; and not only so, but one which really has, since the issue of Admiralty Circulars 29 and 30, assumed formidable dimensions, as affecting nothing less than the efficiency of our Royal Naval Fleet: and in our desire to diminish the expenditure of the Admiralty department, it offers an opportunity of making an immense stride towards better economy.

My recent investigations on coal have given me peculiar facilities for taking a broader view of matters than others have possessed. The question is not at all understood by the multitude. As regards myself, I am, suddenly, so circumstanced that much leisure time is unfortunately thrown on my hands; and having for so many years, I hope usefully, conducted one of Her Majesty's Naval departments afloat, and having been in earnest, and knowing what I know, I cannot suffer the experience gained in certain matters to be buried in forgetfulness; especially as the experience referred to is calculated to still farther serve the Honourable Board of Admiralty (from whom, through so long a period, I received much kindness and consideration), for this is clearly a time at which their endeavours to effect real improvement would be paralyzed to a great extent from want of precisely that information which, in these papers in the *Nautical*, will be honestly and respectfully offered without, I trust, giving offence to any one.

In my last letter, I offered to prove that certain evils exist in our system of supply and consumption of coal through "*ignorance of the scientific part of the question.*" It really is so; nor does it much



surprise me, that in attempts to realize official expences with a view to official advantages, I should have met with the following remarks:—perhaps I might call them snubbings, which being in themselves the evidences of the very ignorance I am arraigning, had better be thus disposed of before I attempt proofs.

It has been asked, “Who wants science? We have (it is said, and it has been said to me) got on very well without it—let us wait till we are obliged to bother our brains with it: we know what we are about. Are there not official inspections of coal at the very pit’s mouth, where we choose for ourselves? Do not naval engineers report upon all they see and know with regard to their use of coal? They have enough to do as it is: would you plague *them* with your science? Do you know that you are hauling a whole department ‘over the coals,’ when you propose a change because of ignorance therein?”

In these words many a disappointed and disgusted, but well intentioned and faithful servant of the state, will recognise the cause of the worst evils, which for the last fifty years have afflicted our naval administration. But these intolerances of improvement which are unworthy of those intrusted with the responsibilities of the details of our naval and other administrations, are fast dying out.—Let them rest.

It fortunately happens that the “department” of the present day under which the supply of coals is regulated knows better:—for even since my retirement from duty, I have, in cheerfully tendering some opinions and demonstrations, found them well and even kindly received: and I believe that department will be the first to see that any possible improvement shall be carried out.

There is, sir, a mighty change at work! The whole mind of man seems to be in a state of rapid and startling development! One thing is driving all before it. Opinions which had been held almost sacred are seen to fall when “science” is brought to bear upon the stiff and once sturdy notions of the past, and we gaze now on many prostrate prejudices, wondering how they ever could have found support!

But science is power,—is truth; and whether ignorance clamour against it, or obstinacy place difficulties in its pathway, it must prevail.

One would naturally think that a substance like coal, which is used in such large quantities throughout the world, would by this time be so thoroughly well understood, in all its properties, capabilities, and appliances, that no further need for investigation could be found, especially in the marine engine room.

I remember having, upwards of fifty years ago, seen the first steamer pass through the Downs. Would you believe, sir, that during the past half-century our knowledge of the nature of coal has not much, if at all, increased? This is no passing assumption; records shew it to be a fact. The first move in a right direction, as regards real progress, is dated, Admiralty, 24th April, 1869 (the date of the circulars). Had Dr. Ure, who wrote, in 1820, on Coal Analysis, been

followed up by other eminent chemists, the world would long since have had what we are now craving for: but, unfortunately, eminent chemists were not specially working for the assistance of the marine engineer. I am indeed afraid I shall have to shew that the engineer owes very little to the chemist in this matter. Ask a chemist to analyze your coal, and what does he do but separate its elements? He will tell you its amount of each of several substances:—carbon, hydrogen, oxygen, nitrogen, alumina, silicon, sulphur, iron, magnesia, —perhaps lime, perhaps copper, perhaps lead, manganese, etc.

I would ask the most experienced engineer, what he practically gains from knowing such an analysis? I say,—nothing. Does a knowledge of all this assist in the management of coal? (for this ought to be the precise object)—not at all. Let me, for instance, ask, what does it signify practically whether a caking coal contains nearly three times as much nitrogen as splint coal does?—and so on.

I say, sir, these registers and tables and analyses concern the chemist and philosopher, and are not what naval engineers need burden their minds with. Can we wonder, then, at the determined ignorance and obstinacy of long standing, to which I have alluded? I would further appeal to naval engineers, and say, fancy yourselves in a foreign port, having, in the responsibility of selecting coal from proffered samples, your personal credit, the credit of the ship, and (as I have already reminded you), in time of war, when speed is an essential to her very safety, our national honour periled. Fancy, I say, all this involved in the one (apparently subordinate) question of the selection of the quality of coal; and think of the really slender means now in your possession of judging accurately of the coal you use! At such times, what would you not give for a ready, and simple, and trustworthy means of analysing your sample, although ignorant of chemistry? *Well, all this I can and will give you.* You know too well the trouble, and dirt, and dust, and annoyance, a bad coal will cause in any engine-room afloat. I know an instance, in which, at a far distant port, a coal was received on board by a very able officer who, to his surprise, had his boiler-tubes choked from it every twelve hours! (I have a sample of the coal by me.) There is moreover absolute damage arising from the reception of such fuel.

Then, I say, marine engineers *want some help* in their selection of coal. Their great practical experience and intelligence *combined* with knowledge of some simple and available, and ready mode of analysis would be a great boon to themselves, but a still greater to Her Majesty's Service.

Some will be inclined to think that I am rather under-rating the capabilities of marine engineers, when I imply that they don't know a good coal when they see it. Well, sir, I am ready to prove that while they possess all the advantages which ought in reason to be expected of them; they cannot, in most cases, detect the more important qualities of a coal. It is the most fallacious of all things to assume the power of determining the properties of coal by mere inspection.

Before finishing this paper, I shall for instance have to shew that as much as thirty to forty per cent. of sulphide of iron may exist in a coal, *without an atom being visible*. Of course this relates equally to sulphur and iron, or any impurity which may affect ash, clinker, or fusion of fire bars. Then, again, as to Bitumen:—The subject is pressed home to us, and to all “commanding officers and engineers,” by the recent issue of circulars 29 and 30; which order, that two-thirds of Welsh coal are to be mixed with one-third of bituminous coal.

Now who will be so presumptuous as to pronounce by mere inspection upon the quantity of bitumen (or sulphur, or silica) a coal contains? Moreover, who will venture to declare the quantity and *nature* of ash therein? I say it is *impossible*. Not to believe this, must at once condemn the authorities as wilfully or culpably negligent, who recently put a most dangerous coal on board Her Majesty’s ship *Magnet*. (To be hereafter satisfactorily explained by me.)

While I grant that a more useful “first step” than that of the circulars can scarcely be desired, I shall have to shew the difficulties which, for a time, may prevent our fully availing ourselves of the advantages which that step is intended to introduce; yet while I presume to point out the nature of these difficulties, I will most respectfully offer to the Lords Commissioners of the Admiralty, and indeed to marine engineers generally, a complete and simple remedy. This is indeed my object.

That help to them is necessary is further obvious from the following considerations.

Now, what is coal? Ask me what is sugar, or chalk, or rice, and I will tell you at once that it is a chemically formed substance, formed of ingredients which invariably bear a normal proportion to each other:—that is to say, knowing how much carbon a piece of chalk contains, we can accurately calculate therefrom its quantity of lime. Can we do the same with coal? *We can only describe coal as an accidental mixture of distinct substances, excess in either of which alters the general properties of the mass, and influences its value as fuel.* If this be true, no accurate knowledge of coal can be obtained without actual analysis (which may be more or less approximate as suits our purpose). Because there is *another* fallacy worthy our careful consideration, and it is this:—no one who has seen the numerous demonstrations in my late lecture-room, can doubt that the *name of the pit or even the seam from which the coal was obtained, is no guarantee of quality*, nothing is more deceiving. Coal from one part of a seam will often be deficient in essential qualities, which portions from another part will contain to perfection.

I might adduce instances in every coal that is worked. Let me take at random, from my own register of analyses, two samples of the well-known “Booth’s” coal; one would not cake at all—the other caked very much; one giving a very white ash—another, ash of a reddish colour: now this being interpreted means nothing less than one of the two was capable of producing spontaneous combustion,

while the other was perfectly trustworthy. It is to be ignored in our estimation of coal?

Your readers, sir, will understand, then, the position of engineers who have not only coal from different beds to deal with, but coal from different parts of the same seam; indeed, they have coal from different districts altogether, to mix with Welsh coal, *if they are* "Bituminous." I will with every apology to those who were compelled to use it, illustrate the dangerous nature of the word "bituminous" by an example:—

Nixon's well known coal contains from eight to fifteen per cent. of bituminous matter—some samples of it *cake* in the furnace, and some do not. Therefore, even the best of all the good coals known, cannot be relied on, without special analysis. If, then, the quantity of bitumen in a mixture of coals be of any consequence (and its acknowledged importance is the very *cause* of mixing), how are we to know its amount without actual experiment somewhere?

And again;—a Coventry coal contains 36·8 per cent. of bituminous matter, and yet scarcely cakes at all, and soon burns away—while a Derbyshire coal, *having the same quantity of bituminous matter* cakes and *swells up*, and yet is difficult to burn off.

Now suppose two-thirds of a quantity of Welsh coal (in itself varying in volatile matter from eight to fifteen per cent.!) to be mixed with one-third of either Coventry or Derbyshire, and what do we produce? Why, sir, mixtures,—either the one or the other of which, cannot be suited to the use of H.M. Ships:—at least one of them *must* be better adapted than the other:—so that from want of better knowledge of each sample of coal by actual analysis (such as I am about to describe), there *must be waste in one of the two*:—and indeed, the want of experiment will prevent your knowing, in which of them the waste occurs.

And again;—I can point to a well-known Lancashire coal, which has so little bituminous matter as 24·4 per cent., but which cakes and swells enormously!

You see, sir, as regards both efficiency and economy, the matter is really serious and perplexing: while a most simple remedy exists.

It has in spite of prejudices become a question which admits of definite rules, derived directly from science itself, whereby to obtain accurate knowledge of the *practical value* of any coal which may be offered us; and the operation is a very short one.

Some think they know quite enough, in using (if any one now ever uses) the litharge test: but the belief that the value of coal depends on the quantity of its carbon is a popular error, and one which has deep root in the service. If men want as a fuel a substance merely rich in carbon, they may look elsewhere than to our coal-pits for a fuel. But in dealing with a prejudice it will be well to arm ourselves with a useful fact or two for comparison.

Taking the five principal kinds of British coal, we shall find that the Welsh contains on an average 84 per cent. of carbon,—Newcastle 82—Lancashire 78—Derbyshire 80, assuming then the whole bulk of

British coal to have an average range of six per cent. of carbon, let any reasonable man attempt to make his selection of a useful coal therefrom, *because of its amount of carbon*—even supposing each name referred to one quality only—it will be an absurdity, as I will at once shew. Let us in illustration take Newcastle coal alone. Dr. Thompson says it contains 75 per cent. of carbon—Main and Brown say 82—Dr. Miller 88—and Allan 85—while my own analysis gives 81·7 (for West Hartley).

What? Does Newcastle coal vary in its amount of carbon to the extent of thirteen per cent.? Suppose (as it would be quite fair to do) other ingredients such as sulphur, etc., vary with equal uncertainty; (as they really do) or what is even more serious—suppose the other three varieties of British coal vary to the same extent. Can we overestimate the difficulties which (I defy any one to disprove) must attend the necessary, and in itself highly commendable operation of mixing our coal, *unless we have some definite rules* by which to make the least possible amount of fuel evaporate the greatest quantity of water, in the least possible time, and with least damage to the furnace? For after all this is what we want to do?

Not to intrude too much on your valuable Magazine, I would ask leave just to remark on another difficulty, which for a time must partially paralyse the efforts of the authorities in their attempts to perfect a necessary economy in the burning of coal: I refer to Circular 29, wherein permission to engineers is granted to effect alterations in furnace doors and firegrates of most ships, even to the shortening of the firegrates by a quarter of their length.

No man in the service or perhaps out of it, has had so much experience of officers of Naval Engineers during the past eleven years as myself: and I am prepared to say that whatever men can reasonably be expected to do (while in ignorance of the precise nature of the coal, they are called upon to use), engineers as a class *will* do. At present, however, they only become acquainted with the rough qualities of their fuel, *after* coal has been supplied, fires lighted, and perhaps the voyage or cruise has commenced: whereas, give them, *whether they be chemists or not*, a means of ready and closely approximate analysis, with a clear half-hour's time, in which to make it, *before* mixing their coal, and Circulars 29 and 30 will become in their hands the most valuable step towards economy in coal, which has ever been issued from the Board of Admiralty, but neglect this and such confusion and waste must ensue as would to a large extent, absorb the benefit which we all hope to receive from the labour of vigilant Admiralty Administrations.

It is not merely a question of waste of coal, for the effects of change through mixing alone will soon be felt in *increased continuous expense in the engine rooms*: for only imagine what must result from reports by different and succeeding engineers of the same ship: each of which may have made alterations in doors, and firegrates, in their attempts to carry out alterations in accordance with the experiences of one mixture of coal or another, and which *the next supply of a different mixture may utterly condemn!* Nor should we diminish this perplexity if we continue the

same officer to the same ship who once having altered his furnace to suit one kind of coal, would almost fear to express that his first experiments were erroneous, when he would find these alterations ill adapted to a new supply.

Would it be just, sir, towards heads of departments to throw such bewildering tasks upon them, as the attempt to sift useful information from such reports, founded as they must be upon experiments made under extreme disadvantages from ever-varying data? and involving constant changes of the form of grates and furnaces, to adapt them first to coal of one quality, and then to coal of another?

With every apology for the length of this, I beg in conclusion to ask permission to describe my method of coal examination, in your next number.

Naval chief engineers (ten to twenty together) have at times, at my request, met me over the question of the "waste of coal in the navy, and its remedy." Many of them have already adopted my process of analysis, which any one may easily adopt, and in giving assurances that the saving of money which my suggestions, if followed up by authority, would effect in the Admiralty alone, must at the lowest estimate, range from ten to twenty per cent. on *upwards of a quarter of a million sterling per annum*, I only quote the corroborative and unanimous opinion of some of the ablest officers (both executive and non-combatant) of Her Majesty's Naval Service.

S. M. SAXBY.

Faversham.

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## QUEENSLAND AND HER KANAKA LABOURERS.

(Continued from page 360.)

The Rev. John Graham said it had been stated by the last speaker, that it was a strange and wonderful thing that the young and democratic country of Queensland should favour slavery; but then everything at this end of the world was antipodal. Everything here was turned upside down. If he (Mr. Graham) had not known something of the country, he should have thought that the chairman came from the North of Scotland instead of from the North of Ireland; if he had not been informed that the Bishop really came from England he might have thought from the energy and the indignation with which he denounced this traffic, that he came from the south of Ireland; and when the gentleman who last spoke gave them such a play of fancy and sparkles of eloquence, he might have imagined that the Rabbi was an Irishman. The late Governor of this colony was one of the calmest-minded men he had ever seen, but Sir John Young came from Ireland. He found that the present Governor was not characterised by any exuberance of fire or brilliancy of genius, but

this calm-minded man was an Irishman. The Bishop of Sydney having done the indignation, and the Rabbi the eloquent and poetic, it remained for him (Mr. Graham) to give them the logic and the reasoning part of the business. The resolution which he had to move was as follows:—"That this meeting believing and rejoicing in the great success of Christian Missions in the Islands of the Pacific, and having before them evidence to prove [and this resolution bound him to be tedious, and his hearers to be patient] the disastrous effects of the present system of deporting the subjects of missionary labour to regions where they are totally without domestic ties and Christian instruction, deplores the wrongs done, both to the philanthropic men whose labours are thus counteracted, and to the people who principally, for the gain of others, thus suffer in their highest interests." This was his resolution, and he hoped it would be theirs.

Some of their Queensland friends were indignant at the steps which the people of Sydney were taking in this matter. He had received several indignant letters on the subject, because of some utterances of his in public, and their writers said,—“What business have you to interfere?—this is our affair;” but he (Mr. Graham) answered, we have four grounds to justify our interference,—first, on the ground of our commercial relations with the islands; second, on the ground of British character and influence; third, on the ground of their common humanity; and fourth, on the ground of their common religion. First, on the ground of commerce; in an exceedingly judicious and able article in one of the daily papers, to which the Bishop had alluded, it was stated that taking the average of the last ten years we had had £43,000 worth of imports brought to Sydney annually from the South Seas in the shape of cocoanut oil, fibre, and various other things; while during the period we had sent from Sydney to the islands an average of £60,000 worth of exports, and he took it that we had therefore £60,000 worth of reasons why we should interfere in this question. Not only so, but we had an interest in regard to life and limb. As a matter of fact, the major part of the vessels engaged in the South Sea Island trade were from the port of Sydney; but if this traffic in Polynesian labourers continued, retribution would follow upon wrong, and the blood of the white man would stain the waters in revenge for the wrongs perpetrated upon the islanders by the white man who preceded him. “Whatsoever a man soweth that shall he also reap.” “Though hand join in hand the wicked shall not go unpunished.” Then we had a right to interfere on the ground of British character and liberty. He was delighted with the poetic sentiments of the Rabbi, and particularly with the quotation from their own poet, Cowper. We had reason to be proud and thankful for what England was, and should it be said that the old flag that had come out of the thousand years of battle and of breeze, and had waved the signal of liberty around Africa, should be stained by inconsistency in these democratic colonies?

Then on the ground of their common humanity he thought they had a right to interfere. During the last five years he had been specially

interested in missions, and because he was interested in these men he had thirty-two of them to tea with him, and a more gentlemanlike, genteel lot of men taken from the ranks of life, it had never been his privilege to meet. For decorum and propriety, bone and muscle, and also for brain and feeling, he did not think they could get thirty-two men from any county in England superior to these men whom he was privileged to take tea with. Some of the finest men he had ever seen had come from the Hervey Islands, from Samoa, and Rarotonga; and was it to be borne that these men were to be hunted and kidnapped, brought to a strange land and locked up in gaols because they did not choose to work for any particular master? Then on the ground of their common religion; many of these men had been instructed in the truths of God. He thought the Rabbi had made too great a difference when speaking of their religion, for he (Mr. Graham) thought he held all the religion that the Rabbi held and a little more. He maintained that many of these islanders held all that Moses taught and something more. In order that he might not forfeit the character of a very calm Englishman, he would proceed to read some facts. He held in his hand a report of missionary progress in the Islands, read at a missionary meeting held at Goulburn, on Wednesday evening last. The Rev. J. B. Smith, chaplain of H.M.S. *Brisk*, wrote as follows:—

“I cannot refrain from taking this opportunity of recording my high appreciation of the great and good work which the missionaries are accomplishing in Fiji; and which must be apparent to every unprejudiced and Christian man visiting these islands. It is, indeed, a rare pleasure to attend the native services, to see large and flourishing congregations imbued with the spirit of devotion and godly reverence, to hear heartfelt praise to God, to observe their zeal in prayer, and the love of their Bibles. Never was I so much impressed with the power of Divine truth—[and these were the words of a calm, earnest man]—as when I stood in the midst of a native congregation at Hau, of over 700 (the king seated in a dignified manner in an arm chair, with his large Bible before him), the queen (the finest specimen as regards flesh and bones of the ‘human form divine’ that I ever saw) in a conspicuous place among the women, and heard the Gospel preached by a native minister, and the accents of their praise ascending up on high like the voice of many waters. The church is a large native building, capable of holding one thousand persons, and displays great ingenuity in its style of architecture. It is situated within a few yards of the ruins of an old heathen temple, where human sacrifices were wont to be offered to their gods, previous to their being cooked and eaten. The ovens which were used for this revolting purpose of cooking the victims are still to be seen filled with earth and quite close to the church. A large tree overhangs them, the trunk of which is covered with notches representing the number cooked. I found it impossible to count these, owing to the irregular order and antiquity of the early entries. I confess that my soul was stirred within me as I quietly surveyed the dark faces of the worshippers in a church raised by their own hands to the honour of the true God, their eyes eagerly resting on the



preacher, and the Scripture references sought out with facility. This was not a special gathering, for I attended native services in several places, and generally addressed the congregations through the missionaries, and am thoroughly convinced of the magnitude and reality of the good work of God in Fiji.

“Who cannot feel as I did? when he reflects on the revolting customs cherished for ages, and the barbarous practices of those once benighted savages, who a few years ago were accustomed to feed upon each other’s bodies as large fishes do upon the small ones. Who cannot but admire the men whose indefatigable labours brought about this change—a change so great, and attended with so much difficulty, that only great energy and perseverance, tempered with wisdom, could have effected it! I was well repaid for my visit to the Richmond Native Institution on the Island of Kindavu. The clean and airy schoolroom, the tidy little houses for the students, and the beautiful order in which the grounds are kept, delight the eye of the visitor. When we entered the institution, a well-defined air of satisfaction gleamed in the faces of forty-five fine-looking young men; and as we proceeded to ascertain their mental attainments, slates and paper were quickly placed before them, and the examination passed off in a manner alike creditable to themselves and to their energetic teacher. The writing of some especially attracted my attention, it being as good as any I have ever seen, and the course of study is wisely selected. This institution is clearly the hope of Fiji, for native agents must be largely employed; therefore a constant number of not less than one hundred should be kept under instruction, and, although Mr. Nettleton appears to be a host in himself, an assistant is necessary. Mrs. Nettleton devotes much of her time to the wives of the married students, in storing their minds with useful information and indoor civilisation. The call for help is so great that many of the poor fellows ere they are fully taught themselves. The present number of missionaries should be at least trebled, and even then vast fields for labour will remain unoccupied; for consider a country equal in extent to that of Wales, and populated with about two hundred thousand souls, without roads or conveyances, save the everlasting boat which is anything but a comfortable means of travelling when it is blowing hard, especially for those who feel that their swimming powers are not to be depended upon.”

He had read this extract because it honoured a Church which he did not happen to be a member of, and which he wished to honour for its high and holy mission and zeal. He held in his hand a letter written by a Christian lady (the wife of a missionary known to some friends), who was as much a missionary as her husband. She wrote—

“The slave traffic is still being carried on among these islands. We had quite a scene here two or three weeks ago: a little schooner anchored in the bay, in a few hours afterwards two heathen natives appeared in a great excitement, saying that they had stolen nine natives, two of whom were under chiefs, from their land, and they wished to

know if the missionary could do anything in the way of getting them liberated. On the following morning a boat was sent on shore with Mare natives, from whom Mr. M—— learnt the name of the captain, the vessel, and further particulars about the said Erromangans. He then sent a note to the captain, requesting him to land the natives, stating that, meantime, his boat would remain here till he did so. In a little while a boat was seen approaching with the captain, two white men, and a large crew of natives. The captain came to the house in a great rage, with a revolver in one hand and a rifle in the other, while all who were with him were armed to the teeth. He demanded his boat. Mr. M—— said he would get it whenever the Erromangans were landed. He said if he did not get it immediately there would be bloodshed; he had come prepared to fight. Meanwhile the heathens were gathering thick and fast, and were not only willing but anxious to fight for their countrymen. But Mr. —— being afraid of bloodshed, got the captain to sign a paper promising to send them ashore, this he did rather reluctantly. The natives were most unwilling to let them go before seeing their friends landed; and the captain, as soon as he got on board, weighed anchor and left the bay without fulfilling his promise. As it is full time measures were taken to stop this shameful traffic, Mr. M—— has written out a full statement of the case to Commodore Lambert. We were pleased to see from yours that there were some who befriended them in their banishment. I believe many of the Loyalty Island natives go of their own free will, but that cannot be said of the Erromangans."

That was one of the facts, and there was no margin left for imagination to fill up in that. He held in his hands a number of other facts, all of which could be proved in a court of justice, and they were communicated by the missionaries who both witnessed the facts which they related. He would only read one of the two statements which he held in his hands.

"I landed at Avatele on a Saturday, and Mrs. S—— and the ladies at Alofi on the Sabbath. Then Mr. L——'s things were landed, and Mr. M—— and party came to church. Later in the day, they, along with Captain H——, came up to Mr. L——'s to make arrangements for our going on board. He said he had more business to be done at Avatele, and so he would take the ship back there on that Saturday afternoon, and as the wind was bad for sailing to Samoa, round the Alofi side of the island, he proposed to go round the other way, and so asked us to be at Avatele ready to go on board by twelve noon of the Monday. This was agreed to, and on Monday morning we went to Avatele—the ladies on *fatas* (a sort of palanquin) and the gentlemen either riding or walking. Mr. F. L—— accompanied us. We arrived at Avatele, about the specified time, and were told by Mr. R——, who was managing affairs, that we should get off in the next boat that left the beach. It soon came out that Mr. M—— had, during the Sabbath evening and Monday morning, put on board about 100 natives, sixty men and between twenty and thirty *young women*, and that, too, directly in opposition to the laws of the land and the

expressed wish of its inhabitants. It seems that no *women* had been taken off before, except a few by the notorious Captain —, and he took them off in the night. All the judges, constables, etc., were assembled, the beach was covered with natives, and there was a great noise and disturbance, and I need scarcely add Mr. — was in a fury. One thing and another occurred to aggravate him, and he worked himself into a regular frenzy. One of his boats was swamped from overloading her—the natives yelled with delight; — threw stones at them, and he was positively foaming at the mouth. I expected at that time to see him killed every minute; indeed, afterwards we were told that there were scores of natives who were waiting anxiously to see him strike either of us—they would have been glad of the excuse to knock him down.

“I should have told you though, that when the boat was ready for us, Mr. — said no; he wanted that boat for some pigs, etc., and we must wait till later in the day. Meantime the surf got very high, the weather looked very threatening, and from the state of matters on the beach we thought we could not risk going then, especially with that madman in the boat. We then wrote a note to Captain H—, explaining matters, telling him that owing to the state of matters we could not risk going off to the vessel with anyone but himself, if he would come for us with a good crew and boat we would go, but if he did not do so we would go back to Alofi, and wait till he came for us. We then tried to get some natives to take our note off in a canoe to the vessel, but *could not get one of them to venture*. All said it was too rough: so we gave the note to the second mate, who was on shore, asked him to take it to the captain, and then as it was getting dark, we left for Alofi. Just before going we saw M— and his party started off to join the ship. We heard afterwards, however, that they could not get to the ship, as it was too far out, and so they had to put back. It was two days before they got off, as the vessel had been driven round to the other side of the island in a squall.

“The disturbances were again kept up on Tuesday. The natives got so enraged that they stove in M—’s boat, tied up the second mate, etc. At this M—, I suppose got frightened, so he agreed to a compromise. If they would bring so many pigs the next day, to pay for his boat, he would put all the women on shore. All were quite glad at the turn things were taking, and the natives were up early next morning, and off with the pigs. But M— was too much for them. The vessel had come round early in the morning, and he and all his party were on board, and when the native constables went off in canoes to try and get the women they were fired on, and the crew were served with hatchets to keep the natives from boarding the vessel. The ship then came round to Alofi for us, but when we heard all the above and saw the feeling among the natives, we felt it our duty to refuse to go, even though we might be put to great inconvenience, and thus take a firm stand against all their shameful doings. Then we did not like so many natives, men and women, sleeping promiscuously on the deck, for there was nowhere else to put them.

We therefore wrote off to the Captain refusing to continue our voyage unless he would put the women on shore. The answer to that was the vessel sailed for Samoa."

He had here an abstract from their venerable friend the Rev. Henry Royle, of Aitutaki, which he would read. The letter was dated October 16th, 1868, and the extract was as follows:—

"You will, I am sure, sympathise with our anxieties as to our expected mission ship. Our various mission stations are suffering irreparable injury from the prolonged absence in these seas. Be so good as to make strong and reiterated representations to the board of directors in London as to the absolute necessity of the speedy arrival of a mission vessel of some class to enable us to do our utmost to combat, and, if possible, to master new and thickening dangers that threaten the complete breaking-up of our smaller and more isolated missions among the eastern groups by a system of kidnapping and abduction of youths and boys from their quiet and peaceful homes."

He found that the friend who had handed him this extract had pasted on it the following advertisement, cut from a Sydney newspaper:—"Wanted, a vessel of about 100 tons, for South Sea Islands. The advertiser, who has just returned from a successful voyage, and who has orders for 100 South Sea Islanders for Queensland, is desirous of entering into arrangements with any person willing to fit a vessel out for the above voyage," etc., etc. "A successful voyage!" Who could tell how much was meant by that? "Who has orders for one hundred South Sea Islanders"—not one hundred tons of oil, not one hundred tons of beche-de-mer, but only for a hundred units of living flesh and blood, called South sea Islanders! He had other communications, but he must pass some of them over. He had one communication from a gentleman in Queensland which he felt it was his duty to read. He would not mention the name, unless to some one specially interested:—

"Will you kindly peruse the enclosed statement relative to transactions on board the *Syren*, a brig which arrived in Moreton Bay last January, with one hundred and fourteen South Sea Islanders.

"Ishmael Williamson was cook and steward on the brig, and is now at Jimna, where he made the statement. The witnesses are two respectable men, incapable, I believe, of being parties to a fraud.

"I have examined the papers of the *Syren* at the Custom-house, Brisbane, and made inquiries at the Immigration Office, at the Colonial Secretary's Office, and find Williamson's statement, on points where it was possible to obtain confirmatory evidence, born out. The Islanders, according to Custom-house papers, came from Islands, viz.:—21 Mustoff, N.E. Island, Banks Group; 10 Bura Bura, N. Island, ditto; 8 Vanaloe, Great Island; 15 Mallicolo; 10 Tanna; 6 Lefu; 11 Mare; total 91.

"The *Syren* came in before the 'Polynesian Labourers Act' was enacted—but I would remind you that the Act does not provide against such horrible transactions being continuously carried on.

"Williamson's statement could easily have been longer in its

narration of atrocities, for the half of what took place was not told, though, perhaps, quite enough to convince any one that we are all, as Australians, being disgraced by these acts of plain out-and-out slavery."

Statement of Ishmael Williamson, cook and steward of brig *Syren*, when what he says occurred:—

"I was cook and steward on board the brig *Syren*, which sailed from Newcastle, New South Wales, with coals for New Caledonia, about the month of November, 1867. We sailed to our destination and discharged our cargo, after which the captain called the men aft and informed them that he intended to proceed to some of the other islands and take on board a cargo of islanders for Queensland. Having got four of the New Caledonian natives, we sailed away from that group, keeping them (the natives) carefully concealed until after the pilot had quitted the vessel. We then proceeded to Lefu and commenced trading with the natives, offering them pipes and tobacco, when a chief and three men were induced to come on board, under the impression that in Sydney they would receive from £2 to £3 per month. From here we proceeded to Tanna, where a chief named Brown came on board and bargained to procure men, for which the captain gave him a musket and a piece of red calico. The chief then went ashore and brought on board six men, old and young.

Six men, old and young! When flesh and bones are to be bought and sold in that way, old ones would do as well as young ones, for they all fetched so much a head. But the phantom of Southern slavery, pierced with a thousand bayonets, and bleeding at every pore, starts up before us, and tells us the end of these things is death!

"Ostensibly to shew them the ship, and when they had been placed in the hold, the captain set sail for another part of the island, taking Brown with him to try and induce the natives to come on board, but was unsuccessful, and in the night the chief took his departure, and returned to his own part of the island.

"We then sailed to an island named Mallicolo, where we put off a boat to trade with the natives, who came swimming out to meet us, bringing plenty of cocoa nuts with them upon sticks in the water; some of them came on board the boats, while others came in their canoes to see the vessel, numbering twenty-one, many of them bringing their clubs and implements of war with them. They were relieved of these on deck, and taken down to see the mysteries of the hold, when the vessel set sail, the canoes were cut adrift, and we bore away from the island. The wives of some of these men swam after the ship for more than three miles crying loudly for the restoration of their kidnapped husbands.

"We then went to Mutton Island where we got a good many natives on board, but as the vessel stopped over night to take in wood, they all made their escape during the darkness, except two. In the morning the captain called the watch and asked them why they had allowed the islanders to escape. The men declared that they had not seen one of them go away. For this neglect of duty the captain stopped their coffee for two days as he said he had lost over £100 by it.

"We then touched at Bura Bura, where the boat went ashore, and brought off nine men, who came to trade. These received jews-harps and red handkerchiefs, and were secured in the hold while the boat went ashore again, but the second time it was only fortunate enough to get one man, who jumped overboard and swam ashore before he could be brought to the vessel.

"After touching at many other islands and getting men in the same way to the number of one hundred and ten, we called at an island, the name of which I forget, where we got six men on board out of a canoe, but the chief immediately came off and demanded their liberation. The captain on seeing the canoes assembling, and the natives armed gathering on the beach, thought it best to comply with this demand. However, to chastise them for their opposition, he manned a boat carrying six muskets and four revolvers, and sent it to chase the natives, who retired to the beach and drew up some of their canoes on the shore. The boat's crew then fired into the huts which contained the women, sunk some of the canoes along the shore, and then returned to the ship.

"We afterwards called at Mare Island, but the natives here were too much civilised and could speak English, and consequently it would have been dangerous to attempt kidnapping them."

At Mare our missionary brethren Jones and Creagh were engaged in labouring, and from that island some thirteen natives were present here to-night. Yesterday he heard them sing the hymns of their island to the tune of the Old Hundredth, and to the infant school melody "Far far away."

"We then sailed for Brisbane. During the first part of our voyage the islanders suffered severely from sea-sickness; the Mallikolo men in particular touched nothing for four days; The captain tried to induce them to eat by standing over them with a thick stick, threatening to thrash them if they refused. Many of them were attacked with dysentery, and after a passage of six days we came into Moreton Bay, where we remained in quarantine for a month, and altogether losing by death about twenty-one out of the one hundred and ten natives who left the islands with us.

(Signed) "ISHMAEL WILLIAMSON.

"Witnesses to signature, WILLIAM CASTLES, DAVID GRAY."

He was afraid lest he should weary the meeting, and he would not read many more facts. He had in his hand an account of an affray with South Sea Islanders, but he would pass it over; also facts under the heading of "In quest of Kanakas," and that was a very melancholy expedition indeed. When the vessel was stranded on a coral reef, the captain left seventy-six islanders, who had been taken on board for Queensland, to perish in the surf, while he and his crew rushed to the boat and thus escaped from the rage of the men they had deserted. He should not relate at any length the story of the daughter of the chief Keki, for some of them had read the statements in the newspapers. And some of them had seen the indignant, high-minded, patriotic, generous letter of Ross Lewin, how he was willing to go back to the

island of Tanna to the farm he had there. Certain persons did go to that farm, and we had heard of them as having since been murdered on it—so great was the islanders' favour to him! And we had read afterwards in a Brisbane paper of the trial of that man for one of the most shocking and degrading violations that could be offered to female virtue. We know how that case was dismissed because the testimony of black men could not be received, or could not be interpreted—men who still averred what they saw. Here was a statement of fact:—

“The *Spunkie* came into the bay on the Queen's last birthday: the islanders remember hearing the guns.

“After the *Spunkie* left Mare they went to Tanna, where the inhabitants are uncivilised, and no missionary or European resident then resided on the island.

“Ross Lewin was on board, but not as captain, with a hired boat's crew of his own, all South Sea Islanders. There exists a kind of tribal clanship or rivalry between the Islands. The *Spunkie* went to Remorne in Tanna. Lewin armed his boat's crew with loaded guns, and went on shore without any other white man who could act as witness.

“A chief named Keki was induced to come into the boat by promises of presents; then tied in the boat—his tribe on shore was enraged, preparations were made instantly for fighting as described by two of the crew; two men kept at the oars ready to row off; one at the rope of the boat's anchor to let go at any moment—the guns produced, and the Mare men directed to watch the savages on shore closely, because the women and children would be sent away previously, and that act might be taken as a signal for attack. Meantime a man was demanded to go to Brisbane as ransom for the chief Keki—no one would go, and his daughter (Naxuyi whose mother's name is Halok) was sent, and Keki released.

“Naxuyi was dragged through the water to the boat lying off shore by the Tanna men of her father's tribe, and thrown naked into the boat and taken on board ship.

“There she cried for two days, and refused food; had her hair cut off—the sign of mourning amongst the South Sea Islanders. Apparently her thought was that now her parents had become as if dead to her. On board she was given to a married man, C. H. Didi, of Mare, for his wife, and the two now work together under one agreement.

“Didi's real wife lives in Mare, and his marriage, I hear will be found in the register of the missionary Rev. Mr. Creagh.

“Charles Habes Didi, of Mare, and John Kapua, of Toka, both sailors, accustomed to ships, and have been I believe, employed in whaling vessels, were two of the boat's crew who told this account of the capture, which they really witnessed; they both of them understand the nature of an oath, and have sufficient knowledge of Christian duty and the English language to be able to give evidence in a Court of law.

“These natives appear to be afraid of the captains, and both Didi and Kapua would prove witnesses unwilling to say more than they could help on account of their dread of Lewin.

“Many instances appear to have occurred, according to native testimony; where the ships have set sail and detained the South Sea Islanders who have come on board to visit the ship; some have thrown themselves into the sea and gained their islands again by swimming, but several others have been kept on board and brought away.

“One poor Tanna man, whose heathen state would render his evidence not admissible, said, in his imperfect English, ‘Captain steal me.’”

He had many other facts, very disgusting and very terrible, but he would not produce them on the present occasion. He believed that facts to enlighten the public mind on this subject were what was most needed at the present time. He believed that we were all sufficiently intense in our abhorrence of slavery; but this was the question: Was this deportation of islanders to Queensland likely to turn out slavery? We feared that the germs of slavery were in it, as far as it was possible for slavery to exist in the British Empire, and we therefore raised our voice against it, and entreated our Queensland friends to review their legislation on the subject, and so to amend it as to do away with these evils. Some might say, was that giving our Queensland friends credit for the good they had kindly endeavoured to do? He repudiated from his heart, all unbrotherly and bitter language towards our Queensland friends. He did not take the place of one who dogmatised, or one who would say, “Stand by, I am holier than thou.” But he took his position on this ground, that the legislation in regard to the introduction into that colony of Polynesian labourers was not good, and it ought to be remedied. He maintained that if that Act were not in existence, and the same acts that were now perpetrated under it were perpetrated then, we should have the British guns speaking to these pirates, and these Polynesians protected by the British flag. He maintained that under the apparent sanction of the Act of the Queensland Legislature, evil-minded, low, despised, gold-blinded, covetous men had gone out and kidnapped and deported our fellow-men. How was that? Let any man read the Act. He had read it himself half a dozen times; and he felt convinced that by it Queensland let loose a number of unprincipled men who were seeking gold irrespective of humanity—men who induced those poor South Sea Islanders to enter into a contract which they did not understand or comprehend. They got the signatures or marks of those men, and perhaps some of their abettors and co-workers in the evil to witness them. The South Sea Islanders were then brought over to Queensland, never imagining that they would have to serve for a term of three years, or for such a small amount of recompense as a pair of trousers, a couple of shirts, and rations from day to day. Queensland took no care that those people should be engaged in a lawful contract. They could not supervise the bringing of those men, or their passage from the islands. When those men arrived at Queensland, it was true that the Immigration Agent honestly did what he could. But the men were deported into the interior; fifty or more of them were huddled together in a shed on the plantation; and where was the eye



of justice that could reach them there? But the heaviest charge of all was this:—Queensland did not, and could not, guarantee that those men, even at the end of three years' compulsory labour, should be returned to their homes. It was true that the men would be committed to sea captains who would be supposed to take them to their homes. But would those captains take them three thousand miles, when they could drop them at the Loyalty Islands, or other islands that were nearer?—and then, dead men could tell no tales! All that Queensland was required to do was to remedy the deeply defective legislation in regard to this subject. He did not speak as to the injury done to the missionaries or their work. But he would say, if Britain sent out men at such cost, self-denial, and such risk as those missionaries underwent, it was too bad of Queensland to set loose a number of men that have all the ferocity and all the cunning and unprincipledness, and more than the power, of the tiger, to prowl round the bays and harbours of the South Sea Islands to kidnap the natives and take them away. He wished to speak kindly of Queensland, but he must speak honestly. If he were to go to Brisbane and deliver a lecture on the subject there, he should speak quite as strongly as he did here. But there were in Queensland good men and true who abhorred this traffic; and he held in his hand an account of a deputation who waited upon the Secretary for that colony, and the answer the Colonial Secretary gave to the deputation was that, under the defective state of legislation, nothing could be done on the subject. Well, it might be asked, what was to be done? He would give a suggestion, although it was not his own. Let a *dépôt* be established in some suitable place amongst the islands—Aneiteum, for instance—with the consent of the authorities of the island; let an interpreter—or interpreters—from the several groups of islands be maintained there at the cost of Queensland, who would act under a Government agent, then let the islanders be received as volunteer emigrants, and be brought to Queensland and engaged in work for fair wages—he would not say the same wages as were given to Europeans—and then let them remain in Queensland at their own option, or return to their own islands at the cost of the Government that brought them away.

The Rev. J. P. Sunderland seconded the motion. He said he would not at that late hour detain the meeting long; but he desired to say a few words in substantiation of the facts which had been published at that meeting in reference to this traffic. He had had the opportunity of visiting Queensland, and had put on record his impressions of this traffic as it came under his personal observation. He visited one of the sugar plantations in Queensland, and there he met about sixty islanders, twenty-one of whom he could converse with, as they came from the island of Maré. He found that many of them had been deceived as to the terms of their engagement. They were under the impression that they would only have to serve for twelve months; but when they got to Queensland, they found they had to serve for three years. He also met with a number of islanders who complained that they were not supplied with sufficient clothing. In reference to

statements which had been made as to the contentedness of these men, he might say that facts had lately come to light which showed that they were anything but contented. Several islanders were tried in a police court for alleged insubordination, and when they were asked whether they would go back to work or be sent to gaol, they preferred the latter alternative. He held in his hand a letter which he received the other day from a native of Maré, who was now in Queensland. In that letter he was informed that many of the islanders were short of food and clothing too. He desired to impress upon the minds of our Queensland friends the necessity of doing away with the importation of South Sea Islanders altogether. Three-fourths of the islanders did not know what they were taken to Queensland for, and were bitterly disappointed when they got there. And there was this consideration that ought to come before us, these poor natives in their ignorance could not engage themselves to do work for 2s. 6d. per week, and receive a scanty supply of clothing. Something like an engagement was entered into, but the fact was they were taken away against their will—were decoyed away. There were now 3000 islanders in Queensland, and the difficulties in regard to them would increase every day, and the best remedy would be to stop the whole thing at once. And with all due deference to our Queensland friends, if they would not listen to our respectful petition, we must then go to the British Government, and ask them to interfere. If a commission of inquiry were to be sent down to the islands facts of the most appalling kind would be brought to light—facts which would make one's blood boil with indignation. Some of the islands were being decimated by the traffic; the strong and young were taken away whilst the old ones were left behind. He had studied the Queensland Act carefully, and he was sure that it would be found to be the beginning of slavery. And if it was necessary that the islanders should be introduced in order to develop the resources of Queensland, all that he could say was that it would be better for Queensland never to be populated than that such atrocities should be practised in a professedly God-fearing Christian land.

The motion was put to the meeting, and carried with acclamation.

The Rev. Adam Thompson, in the absence of the Rev. J. B. Laughton, who had to leave the meeting early, moved the third resolution:—"That this meeting, representing the convictions of the inhabitants of the city, resolves to adopt the prayer of the petitions submitted to it, and herewith authorises the chairman to sign the same, that they may be forwarded to both chambers of the Queensland Legislature, in the hope that a patient consideration of the statements therein contained may lead to a searching inquiry into the working of the "Polynesian Labourers Act," and to its ultimate abandonment, if measures cannot be adopted to avoid the grave and growing evils of the present system." He rejoiced to hear the speakers who had addressed the meeting express themselves in such warm terms against this system of incipient slavery that was producing such enormities.

The Rev. G. Hurst, in seconding the motion, said he heartily

sympathised in the object of the meeting. Facts had been laid before the meeting, but worse facts were in existence. But they were trying to bring British justice to bear upon the abominations which were being carried on; and so far as he was concerned, it would not be his fault if British justice did not overtake the perpetrators of those abominations. They were going to expose those abominations, and by the help of God, they would never cease until they had put them down. His rev. friend Mr. Graham had thrown out a suggestion; but, in his opinion, the traffic was too bad to be regulated at all; their object should be to put it utterly down.

The motion was carried with acclamation.

The Rev. G. H. Moreton moved the chairman, out of the chair, which was thereupon taken by Dr. Moffit. He then proposed a vote of thanks to the Mayor for presiding over the meeting.

The motion was seconded by the Rev. J. Graham, put to the meeting, and carried.

The proceedings thereupon terminated.

[We have here preserved some startling information of what appears to be going forward in our distant colony of Australia. A state of affairs appears to exist in Queensland, that implicates the character of the Governor himself, who could allow these proceedings, and that the laws of the colony should be so framed that no redress could be had. However, we believe them to be but temporary as we find that orders have been sent out by our Home Government, and have no doubt that these disgraceful matters will be rectified. But how they could ever have been allowed to reach the condition under the sanction of a *British Governor*, is to us marvellous. We know not who he is, but the sooner he learns *his duty* the better; and that duty does not include the encouragement of slavery, and all its miserable consequences.—ED.]

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#### THE ARGENTINE REPUBLIC.

THIS large republic comprises a great part of the ancient Vice-Royalty of Buenos Ayres, which in the latter years of the Spanish possession represented an area of more than 150,000 square leagues. Its territories reach from the Atlantic Ocean to the foot of the Andes, on the south as far as the Strait of Magellan, and on the north to Brazil.

Its government being dependent in the early days of its colonization on the Vice-Roy of Peru gradually fell into so much confusion that the Spanish monarch deemed it expedient in 1776 to make it a separate Vice-Royalty, and from that period its capital, Buenos Ayres, began to attain greater importance.

On the 22nd of May, 1810, thirty-four years later, the first symptoms

of independence shewed themselves in the capital, and on the 25th of the same month the Vice-Roy was deposed, a council being formed to carry on the government. The cry of independence was echoed throughout South America, and the territory of La Plata remained emancipated from the Spanish yoke. This capital, or rather its council, desired that it should be acknowledged as the principal of the vice-royalty in the name of the Spanish monarch, and although the majority of the provinces approved of the proposal, there were others that resisted, and hence the wars that were waged between Spaniards and Americans, which eventually settled into a war of independence, some becoming independent and most of them forming a confederation.

Costly were the consequences and long was the strife, when in 1825 a congress formed by the fourteen provinces decreed the union of them all, conferring the executive power on Buenos Ayres, and on the 24th of December, 1826, the federal constitution was sanctioned, and a president designated. The Banda, Oriental, and Paraguay still remained exceptions. The first of these absorbed by Brazil was disputed by the confederation, and declared in August, 1828, an independent republic. Paraguay, which from the cry of independence at Buenos Ayres was seeking her own independence, on the 20th of July, 1811, declared that she would govern herself. In vain it was attempted to force her into the union. She made a most heroic resistance, and her independence being at length acknowledged, the confederation of La Plata remained reduced to the provinces of which it was itself actually formed.

So radical a change in its condition, and a transformation so sudden, brought discord from which this beautiful country is not yet released.

Among the chiefs who from its independence held the destiny of the country, Don Juan Manuel de Rosas was selected dictator, a rich proprietor who began to figure as president in 1829, and who in 1835 was again elected with extraordinary powers, which rather encumbered his position. He was a bitter federalist, and desired to incorporate with the union the recent republic of Uruguay, and to monopolize at the same time the trade of the interior provinces, a step which brought on him evils and tremendous disasters. He refused the demands of friendly nations which required the free navigation of the interior rivers; he levied a crude war on Uruguay, keeping up a siege on Monte Video for nine years, and such was his disposition and ambition, that he raised against himself the best of his generals, D. Justo J. de Urquiza, who placed himself at the head of the party who aspired to the union of those provinces, and the free navigation of the waters of the Plata.

Urquiza, supported by the Brazilian forces, raised the siege of Monte Video in 1851; marched against Rosas, and on the 3rd of February, 1852, gave him battle at Monte Caderos, when the dictator's army was routed, and he himself disappearing from the scene. Since his fall, the active progress of the confederation has been completely established.

But new disturbances suddenly threatened the country. Urquiza, who was nominated provisional dictator, called together an assembly in May, 1852, at St. Nicolas de Arrozos, at which the fourteen provinces of the Plata were represented, in order that they might form a political organization. The federal system was decided on by the assembly. But Buenos Ayres chose to deny the authority which had been conferred on Urquiza, and rose against him on the 11th of September, 1852, and hence her separation from the confederation, constituting herself an independent State, with a constitution agreed on in 1854, until by the treaty of November, 1859, she turned round and joined the confederation.

The thirteen provinces remaining united in congress at Santa Fe, and in May, 1853, adopted the federal constitution initiated at St. Nicholas, which was revised on the 5th of June, 1860, after Buenos Ayres had joined it on the 11th of November, 1859. From that date, this city has remained the capital and the residence of the executive power of the republic.

It is an undoubted fact, that the Plata territory has enriched itself in a most fabulous degree since its emancipation, and more especially from the fall of Rosas, when the navigation of the interior rivers was declared open by the treaty of the 10th of July, 1853. The actual increase of the importations and exportations of the whole confederation, compared with what they were in 1810, amounts to 1,700 per cent. This tremendous increase is due principally to the powerful accession of emigrants, as the failing of its capabilities arose from the scarcity of hands. The mean of the European contingent of emigrants registered at Buenos Ayres is estimated from eleven to twelve thousand annually. What then may not these fertile districts attain to within the interval of a few years.

In 1810, the Vice-Royalty of Buenos Ayres reckoned 2,550,000 inhabitants, and in 1861, 5,200,000 were registered in the same State.

There is perhaps not a country in the two Americas, excepting the United States, to which European commerce is more directed than that of the interior navigation of the Plata, for Europe itself has in these parts of America more than 200,000 of her people.

General Mitre, the president of the republic, in his inaugural speech on the opening of the Session of 1864, said that within a few years the province of Buenos Ayres alone could boast of two hundred miles of railway in course of construction; that very soon a government line of rail would traverse the solitary Chaco; and that the five great lines of rail being finished, some part of which are in operation and others making good progress, that the whole State would have a thousand miles of railway in working order.

He also, at the same time, gave assurance that the navigation of the Bermejo would be established, and cherished the hope that the Salido would be available.

*National Flag.*—The Argentine flag contains the same colours as that of Uruguay. It was adopted in February, 1812, and declared by

law on the 26th of February, 1818. It is composed of a white horizontal stripe in the middle, and two blue ones of the same breadth, one above and the other beneath it. That of the ships of the State has in addition a golden sun in the white stripe near the heading.

*Territory.*—The Argentine republic extends from south to north about 400 leagues, and its breadth varies from 200 to 220 leagues. Its surface may be calculated at 58,000 square leagues, without reckoning the Chaco and the Pampa which belong to it.

The limits of it are on the south of the river Negro, which descends from the Andes and falls into the sea in latitude 41°; to the east the Atlantic and the rivers Uruguay and Paraguay; to the north Brazil and Bolivia; and to the west Great Cordillera.

*Territorial Distribution.*—The following is a statement of the fourteen provinces of which the Argentine Republic was composed in 1866, from official sources.

PROVINCES.	Inhabitants of each Province.	Inhabitants of each Capital.	Approximate area in Square leagues.
Buenos Ayres .....	465,000	156,000	7,000
Catamarca .....	105,000	6,000	3,000
Cordoba .....	150,000	25,000	6,000
Corrientes.....	110,000	8,000	6,000
Entre Rios .....	115,000	16,000	5,000
Jujuy .....	40,000	6,900	3,000
Mendoza .....	62,000	10,000	6,000
La Rioja .....	42,000	3,000	4,000
Salta .....	85,000	11,300	5,000
Santa Fe .....	50,000	8,000	2,000
San Luis .....	58,000	5,000	2,000
San Juan .....	75,000	20,000	3,300
Santiago del Estero .....	115,000	6,000	3,500
Tucuman .....	98,000	11,000	2,800
	1,570,000		58,600
Chaco Argentine.....	40,000		25,000
Patagones .....	40,000		35,000
Pampa Argentina .....	6,000		9,000
	1,656,000		127,600

The city of Buenos Ayres, to which some authors assigned in 1868, 200,000 inhabitants, at the end of 1866 contained 315,500.

Among the inhabitants of the republic there are 70,000 Italians; 32,000 Spaniards; 25,000 French; 32,000 English; 5,000 Germans; Anglo-Americans and other nationalities.

European emigration continues increasing, as may be seen by the following table:

The arrivals in the republic were as follows :

In 1858 .. 4,658 Emigrants.	In 1864 .. 11,682 Emigrants.
„ 1859 .. 4,735 „	„ 1865 .. 11,167 „
„ 1860 .. 5,656 „	„ 1866 .. 13,959 „
„ 1861 .. 6,301 „	
„ 1862 .. 6,716 „	Total in 9 years 75,282
„ 1863 .. 10,408 „	

A part of these emigrants from Europe to the Argentine Republic, from the year 1862, came through Buenos Ayres, thus :—

Years.	Foreign Vessels.	Emigrants.
In 1862 .....	114	4,849
„ 1863 .....	194	7,168
„ 1864 .....	249	8,770
„ 1865 .....	271	9,268
„ 1866 .....	291	11,059
To these should be added those who landed at Monte Video during the five years, and were conveyed to Buenos Ayres .....		41,104
Thus giving a Total of .....		13,468
		54,572

These figures give as a mean annual ingress 11,114 individuals in the above five years, among which Italians and French composed as follows :—

Year.	Italians.	French.	Spanish.	English.	Germans & Swiss.	Belgium.	Portu- guese.	Other Nations
1862	3,082	1,561	919	574	431	50	25	74
1863	4,494	2,334	1,377	883	1,094	100	50	76
1864	5,435	2,736	1,586	1,015	618	100	50	141
1865	5,001	2,282	1,701	1,583	865	100	50	185
1866	6,832	2,333	1,846	1,310	1,143	182	70	243
	24,844	11,246	7,429	5,365	4,151	532	245	719

In these numbers the men may be taken at 60 per cent., the women at 20 per cent., and the children as the remaining 20 per cent.

The agriculturists are in the proportion of 70 per cent., artisans of 20 per cent., and those without occupation as 10 per cent.

This immense influx of European colonists to the Republic goes on to the present time in its colossal proportions. We are not in possession of statistical information from the year 1866, but assuming the

three first months of 1868 for a basis, the number of 9,500 individuals have entered the Republic in those months.

So great a rush of emigrants, which brought with it the seeds of the future prosperity of the country, found ample room in the several provinces of the State, from the good arrangements of the commission appointed expressly to see to the proper distribution of them among the different provinces of the country. Multitudes of families were quickly located in the vicinity of Buenos Ayres, as well as in the flourishing country of Santa Fé, and in those of Baradero, San Jose, and others which are daily increasing.

A multitude of emigrants of both sexes also found plenty of occupation in domestic service in the industrial establishments and on the railways.

As the richness of the country is of the most importance in this vast Republic we will show in continuation the amount of the animal stock which some of the provinces possessed in 1866.

PROVINCES.	HEADS OF CATTLE, ETC.						
	Oxen&Cows	Horses.	Mules.				
Buenos Ayres ...	6,800,000	1,800,000	25,000	5,000	50,000,000	5,000	115,000
Entre Rios ...	2,000,000	600,000	7,000	500	6,000,000	...	...
Corrientes ...	2,000,000	376,000	25,000	35,000	1,000,000	10,000	4,500
Catamarca ...	185,000	40,000	15,000	25,000	80,000	121,000	2,500
Mendoza ...	210,000	71,000	5,000	2,500	230,000	70,000	8,500
Salta ...	255,000	50,000	12,000	34,000	150,000	95,000	2,500
San Lucia ...	31,000	90,000	5,000	8,000	100,000	285,000	...
Tucuman ...	275,000	85,000	12,000	10,000	95,000	25,000	30,000

Taking the sum of all these we shall find the respectable amount of 74,092,600 in eight only of the fourteen provinces of the Republic.

The Government in each province takes the special charge of locating their emigrants, and that of Santa Fé assigns extensive territory for the formation of spontaneous colonization, giving to each family sufficient ground for their maintenance, and heads of cattle for rearing them, with advantages which are scarcely met with in other parts of the world. And to this is no doubt the cause of the rapid progress which this country has made.

As roads of communication form an essential part of public riches, the Government has much encouraged railways, so that by the end of 1866 there were 520 kil. completed of the 1,417 that were in the course of construction, and it is expected that during the present year, 1868, in the central part of the Republic, Rosario will be connected with Cordova. In March Villa Nueva had been reached.

Besides these railroads ordinary roads are constructing throughout the Republic, while hundreds of vessels as well as steamers carry on a communication between the interior ports, both Brazilian as well as native, always running up and down the rivers. The submarine electric telegraph established between Buenos Ayres and Monte Video completes this net of internal intercourse.

*Province of Buenos Ayres.*—This is the largest of all that form the



Confederation. It extends along the whole of the south shore of the river Plata, and follows the right bank of the Parana to near Rosario, where it runs to the south along the meridian of 56° to meet the Rio Negro about 100 miles from its mouth.

Although the territory of this province alone contains as much surface as the whole Republic of the Banda Oriental; as a check to this, a large portion of it is no more than an extensive desert, where Indians roam about, over-run by wild horses and cattle, and the fire occasionally appears, so that from its first occupation down to the present time scarcely a sixth part of it is settled.

The Pampa is one vast extent of steppe, which from the Atlantic reaches to the Cordillera, and in which lies the province we occupy, an immense plain in which the traveller can scarcely find a drop of water to wet his lips. The few rivers which it has, and some other pools are composed of salt water, and it is necessary to go a great distance before fresh water can be found. Added to this the want of trees, and one may imagine the effect on the mind of the traveller who has the misfortune to lose himself in it. Nevertheless great have been the endeavours of the Government to colonize this really useful part of it, which is so considerable and so rich in pasture, by giving it railways which traverse the territory most available for cultivation.

It has at present four lines; the Western, in course of construction in 1867, to Chivillog; the Northern one, completed as far as Las Conchas; the Southern one to Chascomus; and likewise that of Las Bocas and Barracas.

When this province separated from the Confederation in 1852, to form itself an independent State, it contained some 250,000 inhabitants, more than half of which were foreigners. In 1866 it had as we have seen 465,000, so that the European emigration which remained in this province forms an astonishing amount of its population. At the commencement of 1866 its new colonies were peopled as follows:—

Baradero, half a league from the Parana . . .	875 col.
Carmen of Patagonia . . . . .	80 „
Rio Chubut . . . . .	146 „

*The City of Buenos Ayres* was first founded in 1535 on the 2nd of February, as we have already observed, by Don Pedro de Mendoza, but its inhabitants decimated by famine and the attacks of the Indians, abandoned it for four years, seeking refuge at Ascension in Paraguay. In 1580, Juan Gazay, Lieutenant Governor of the more recent colony of Rio de la Plata, chosen by Juan de Torres, and Anazon, Governor and Captain General of the same, resuscitated this city in its place on the day of the Trinity, calling it *Santissima Trinidad*, and preserving to the port that of Santa Maria de Buenos Ayres. The ceremony of foundation was deferred to the 11th of June, when the work of distributing the ground commenced and the plans were laid out.

At the formation of the plan the streets were drawn north and south crossing others at right angles as seen at present, and the ravine as

appears on the eastern front was built over, a fortress occupying it, which now forms the custom-house.

The first plan which was made of it dated in 1608 includes 38,000 yards for the whole city from north to south, and 1,500 wide east to west. From this it may be seen how much its limits must have been extended to contain 200,000 inhabitants.

In fact its limits have increased in an almost fabulous way especially since the year 1846. Here for instance is a position of its gradual progress from data which may be depended upon:—

In 1741 it had	.	.	.	.	11,220 inhabitants
„ 1770	„	.	.	.	22,007 „
„ 1778	„	.	.	.	27,754 „
„ 1801	„	.	.	.	40,000 „
„ 1810	„	.	.	.	45,000 „
„ 1822	„	.	.	.	68,896 „
„ 1855	„	.	.	.	91,518 „
„ 1860	„	.	.	.	109,394 „
„ 1866	„	.	.	.	150,000 „

From 1866 no census as yet of the population has been published, but according to a document we have obtained it now contains from 200,000 to 210,000 inhabitants.

Of all the provinces of the Confederation the largest and most flourishing is that of Buenos Ayres, and its capital is the centre of true civilization. It may be compared in point of luxuries and riches with the largest of the maritime cities of Europe, and its commercial transactions are carried on on the largest scale. The suburban buildings up to 1865 amounted to 652.

*Port Returns.*—In 1831 the entry of vessels of all descriptions amounted to 207, while in 1859 from over sea alone there came 686, with 168,779 tons, and in the Riachuelo, 2,436 vessels arrived containing 43,883 tons.

In 1865 the entries were 906 vessels from over sea with 258,239 tons. Of these 220 were English, 136 Italians, 110 Spanish, 108 French, and the rest of other countries. The number of small craft from the interior in 1865 exceeded 4,500. This flourishing condition of the port of Buenos Ayres will be increased by the line of steamers which carry on an active trade between it and Monte Video, and between it and the principal towns on the Parana.

In 1866 the entries were 1,473 vessels from over sea measuring 267,313 tons. Of these 78 were Spanish measuring 16,448 tons, forming a sixth of the whole. The entries of steamers in the same year amounted to 437. The imports and exports of Buenos Ayres in 1866 were as follows:—

Imports	.	.	.	.	.	32,269,082 dollars
Exports	.	.	.	.	.	23,049,797 „
<b>Total</b>	.	.	.	.	.	<u>55,318,879</u>

Among the imports those of Spain occupy the fifth place, represented by 1,987,909 dollars, and in the exports she had the sixth place, taking 1,088,222 dollars.

"Emigration to the Argentine Republic.—Congress is sitting in Buenos Ayres, and occupied with measures of much importance. A Bill to aid and promote Immigration has been laid before the House. The Bill provides for the payment of the passage of 1,500 immigrant families from Europe to the Argentine Republic, and authorises the issue of two millions of National Bonds in order to raise the funds for the measure. It has yet to be discussed, but the general impression is, that, with some modification, it will be passed this session, and agents at once despatched to England and Germany to engage the immigrants."—*Buenos Ayres Standard*, May 27.

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#### INSTRUCTIONS FOR THE PORT OF VALENTIA.

*By Don Francisco Chacon y Orta, Commander of the Spanish Navy  
and Captain of the Port.*

THE pier harbour of the Grao\* de Valentia, the works of which are not yet completed, comprises a harbour for building and repairing vessels, and an outer or one exterior to it. The interior harbour is of the form of an eight-sided polygon, the greatest diameter of which is 820 yards, and the least, which is at right angles to it, 634 yards. The whole of the boundary is formed by a stone wall with a sloping space for the operations of loading and unloading, and is provided with commodious stairs for embarking and landing. The communication between the outer and inner harbours is by an opening of 100† yards wide, and is in the middle of the longest side, which lies N.E. and S.W. The outer port is formed by a quay terminated by a shoulder which advances seaward from the vertex of the S.E. angle of the port in the direction of S. 27° E. 1060 metres or about 6 cables and a tenth, and a counter pier which springs from the S.W. angle of the port in the direction of S. 65° E., which extends seaward about 580 yards. One part of this pier reckoning from its commencement for about 100 yards is direct, the rest forms a slight curve.

As will be seen by the above the convergence of the two piers which form the outer harbour gradually narrows its space leaving its entrance 350 yards wide. However as the western pier is shorter than the eastern, a sheltered space is left two cables and seven-tenths wide, a space in which, although small and partly exposed to the sea, vessels which do not require to enter the inner port may ride under the shelter of the eastern pier against winds between N. and N.E. Ac-

\* The term "Grao" applied to this place signifies the sea-shore used by pilots as a landing place, whether sand or shingle.

† By the plan it is about 60 yards wide.

ording to the soundings obtained in July last the general depth of the harbour is 23 feet.

*Instructions for entering the Harbour.*—The inner harbour, as may be seen by its form, is nearly continuous, affords complete safety from all winds to any vessels secured in it. For it presents only a narrow opening to the south, and a vessel once in it has nothing to fear from any wind or sea from this quarter. The outer port has the same advantage of shelter for the vessels in it, as those secured to the eastern pier for the same reason. We will now refer to the mode of entering the port. The winds with which it is difficult to take the port on account of its slanting eastward are those from W.N.W. to N.E. by the N., because the direction of the entering channel is north and south, and as an artificial harbour it is too narrow to work in. Of these winds those westward of north, notwithstanding they are foul for entering (as coming off the land) do not raise any sea, they are harmless, and vessels may anchor with them in the roads at rather less than over 7 cables from the lighthouse at the end of the eastern pier in 7 to 8 fathoms good holding ground. To the north of the lighthouse about  $3\frac{1}{2}$  cables there is a rock called the Barreta. But with winds eastward of north, those from N.N.E. to N.E., which are to be expected from September to March, the case is altered. They are moreover severe and bring plenty of sea with them, not only making havoc among vessels in the roads in the way of parting from anchors and cables, and occasioning wrecks, but rendering the entrance of the outer port impracticable and obliging vessels to get to sea; thus rendering it necessary for vessels to be very cautious about entering this gulf at all in winter time, and whenever they do so to select if possible fine weather, when they must be careful to follow these rules.

Every vessel bound to Valencia in the winter months, from September to March, on entering the gulf, should the wind freshen up hard from any point between N.E. and S.E., must immediately put about and keep out of the gulf entirely until the weather moderates. For it must not be forgotten that those N.E. winds in the interior of the gulf are generally from N.E. to N.N.E., and attended by a current of two or three miles an hour at the outer harbour, which current sets seaward, rendering the entrance most difficult if not impossible.

But should a vessel be already embayed in the gulf, and in sight of the harbour, with a strong wind from N.N.E. or N.E. to get out of the gulf then is a very difficult matter, because the strong current setting into it, along with the fact that the wind generally draws more to the eastward as the vessel nears the coast, tends to drift her inwards, and will occasion her loss on the flats of Denia and Cullera. It is thus that not only vessels bound to Valencia are caught, but also those which may happen to be passing the outer part of the gulf and imprudently enter it become cast away by this coalition of powerful causes on a part of the coast from whence there is no possibility of escape. In such a case as this the majority of the local pilots advise that every attempt be made to get out of the gulf, but more especially when the vessel is at the entrance—in fact before she becomes em-

bayed. But if in attempting to get out of the gulf the navigator finds that instead of gaining the outside to windward, his vessel is really losing ground and falling to leeward, he must give up the attempt, for it would assuredly end with the total loss of his vessel, and he must run for Valentia, and make his preparations as well as he can for taking an anchorage in the outer port, or in the roads according to circumstances.

Other pilots again are of a different opinion as to the mode to be adopted in this case. These think that when once a vessel becomes embayed she should not attempt to get out of the gulf, and risk her being lost, especially if she be a small vessel, or one not well found. They consider it preferable that she should find an anchorage in the waters of Valentia, where in case of her wreck there are means of saving her people. But the fact is, that from the nature of the gulf and the situation of its port, exposed as both are in bad weather, every commander of a ship knows what his craft can do as well as his crew. He will take care to avail himself of every chance in his favour, knowing also whether his position is sufficiently to windward, and whether he will have sufficient daylight to run for his anchorage.

Having determined to make for the outer harbour, he will proceed as follows, according whether the wind is free from N.E. or scant. In the first case, with the wind at N.E. and the sea not being very high he has a good chance of making the outer harbour. He must take care to get the lighthouse bearing from W. to W.S.W. of him, this lighthouse being at the end of the eastern pier, and having once attained this position he must make all possible sail on his vessel, as upon this always depends his making good her entrance. The principal sail which he cannot carry he should take care to have ready to set at any moment or take it off the vessel as may be necessary, and also to manage his braces quickly, and reduce all sail at the same moment.

Thus prepared, the course must be directed so as to pass about a quarter of a cable from the extreme end of the pier, or according as the breakers will indicate on the stones off it, and at the moment he is up with it, he must haul close up to the wind on the starboard tack, profiting by his after sails to do so in the least space possible, so as to ensure his getting in. If this manœuvre is executed promptly, and the wind does not head him, he has every chance of getting into the harbour. But he must be well prepared for the wind heading him at the entrance, as well as for vessels being in his way there at anchor, as occasionally happens. Again, in attempting the entrance of the outer harbour, if the wind has shifted, or the vessel is not prepared for hauling up, and she has got thrown to leeward by the sea or current, which in such cases she is sure to find, and she cannot get to the western pier, he has no other resource than to anchor where he is, or as near to the entrance as he can, with two anchors, and, if possible, ride out the gale.

The second case is when there is more northing in the wind, when it is from N.N.E. or N.E. by N., and then it is certainly not possible

to get into the outer port. For these winds, as they are always strong bring a heavy sea, and certainly no square rigged vessel whatever should attempt it. But as soon as the commander has decided that he will not go outside from its greater exposure, but will rather try to hold on at anchor, he must shape his vessel's course for the roads as we have already pointed out, and gain his anchorage under shelter of the pier.

It will be seen from the foregoing, that with a N.E. wind there is a chance of entering the harbour if the vessel is managed well, and there is no unforeseen obstacle in its narrow entrance, and the wind and sea should not be too severe. But in proportion as the wind becomes scant, it will be more difficult, and altogether impossible when fresh from N.N.E. with a heavy sea, for no vessel can work within six points, which would be necessary to get into this outer harbour. Besides, mercantile vessels with small crews cannot manage their sails smartly enough to prevent falling to leeward, and the cross sea and current are sufficient to prevent them from attempting it, so as to keep clear of the piers.

*Advice to Vessels at anchor.*—When a vessel is compelled to anchor in the roadstead rather than to risk damage in endeavouring to enter with a scant wind as recommended herein, or whether from not succeeding in entering she must anchor under the pier and unable to take to sea, the commander must use his utmost exertions to keep his vessel off the shore. But if he should find his anchor coming home in consequence of the strength of the gale, before it is too late, he should cut away his masts and drop his remaining anchor, should he have one, a method by which vessels have been saved in such circumstances.

If the captain will not part with his masts when he sees that the loss of the ship is certain, with his chains he will form a raft of spars, and getting sail on his ship will run her for the strand as near as he can to the harbour, so as, if possible, to profit by assistance from it.

There is a station established on the beach of portable mortars with which assistance is sent to wrecked vessels, besides a life-boat to save the crews.

*Signs of approaching gales.*—The gales from N.N.E. to N.E. which as we have already said, are only dangerous on this coast, and to which vessels are exposed from the position of the harbour, and the formation of the gulf, prevail from September to March. But in their utmost severity they do not last twenty-four hours.

They often come on suddenly, perhaps in a shower from the eastward, perhaps from the wind shifting from N.W. to N.E., without any notice whatever, the barometer remaining high, and only at the severest period of the gale showing any symptoms of falling.

Sometimes they are heralded by a sea from the eastward, which without any wind from this quarter gets up in four or five hours; in fact, they always spring from the easterly winds in the Mediterranean, arising from the configuration of the coast.

There are pilots who aver that the proximity of these gales is

announced by lightning in the eastern horizon, over the heights of Cape Cullara. Other signs are said to indicate them, such as the appearance of Cape Cullara distorted by fog, its extremity looking like an islet, and also the gossamer or the spiders' webs which are found about the rigging of the ships. The courses above mentioned for shipping are by compass.

Translated from the Anuario de la Direccion de Hidrografia. Ano vii. Madrid Deposito Hidrografico, 1869.

[It appears by a notice from the Captain of the port that a black buoy has been moored off the extremity of the eastern pier, carrying a red flag to indicate the position of the stones left by the gale of the 9th of February last, and which are exposed by the sea breaking over them.—ED.]

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### THE SUEZ CANAL.

As the time approaches for the opening of this work of navigation, an increased anxiety naturally takes place in the Maritime world concerning it. Therefore, without touching the subject of its absolute efficiency hereafter, we give place to the following notices concerning it.

The following has been addressed to the President of the Company by Mr. Lesseps.

“Monsieur le President.—I have much pleasure in handing you enclosed notice to merchants and shippers, which I shall be obliged by your bringing to the notice of merchants and shipowners of your town. I need not call your attention to the importance of the document, which fixes definitely the opening of the Suez Canal to general navigation.

“I would request you to direct the attention of merchants and shippers to the importance attaching to a prompt and easy development of commercial relations with the East.

“The length of time occupied in the voyage round the Cape, and the delays consequent on transshipment in Egypt, have restricted trade to and from the East. When once the barrier is removed, and the route to the Indies shortened by one half, it will permit of a complete interchange of European and Asiatic produce. It becomes necessary to anticipate this great commercial undertaking by providing sufficient means of transport to meet the occasion.

“I have, etc.,

“FRED. DE LESSEPS.”

“*Notice to Merchants and Shippers.*—The Suez Canal will be opened throughout to navigation the 17th of November, 1869, with the depth of water eight metres, twenty-six English feet. On the occasion of the inauguration, merchant vessels, and those belonging

to various governments, presenting themselves at the two extremities of the Canal—viz., at “Port Said” and “Suez”—on the 17th, 18th, 19th, and 20th of November, will be exempt from all dues. From November 21st, conformably with Article 17 of the Act of Concession, the rate of passage through the Canal will be fixed at ten francs a head for passengers, and per ton according to the legal tonnage measure of the respective nations. The Administration will publish, shortly, regulations for the navigation of the Canal, comprising rates of pilotage, towage, etc., etc.”

*In the House of Commons*, Mr. Gourley asked the Under Secretary of State for Foreign Affairs if any negotiations have been or are intended to be entered into with his Royal Highness the Sultan of Turkey, or with his Highness the Viceroy of Egypt, relative to the navigation of the Suez Canal by vessels of the British Naval and Mercantile Marine; if so, the terms upon which British and foreign vessels were to have the use of it. Mr. Otway said the sixth article, regulating the concession to M. Lesseps, provided for the equality of the tariff for all nations in the navigation of the Suez Canal. No negotiations had been entered into with the Sultan or the Viceroy of Egypt on the subject; but, as his hon. friend was aware, the opening of the Suez Canal was a matter of deep interest and importance to many nations, and to none more than our own. It was impossible, therefore, to say that no negotiations would occur on the subject.

*The Suez Canal.*—The Canal Company announce officially, at Paris, that the inauguration of the Canal will take place on the 17th of November; also, that vessels, whether National or Commercial, intending to take part in it must be at Port Said at the latest on the 16th; that on the 17th they will go by the Canal from Port Said to Lake Timsah; will pass the 18th before Ismaila, where the Viceroy will give them a *fete*; and on the 19th will pass through the Bitter Lakes and enter the Red Sea.

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#### ROYAL NATIONAL LIFE-BOAT INSTITUTION.

At the meeting of this Institution on the 1st of July the sum of £7 6s. was voted to pay the expenses of the life-boat *Caroline*, at North Berwick, North Britain, in saving the crew of eight men of the brig *J. C. Howitz*, of Rostock, that was wrecked on Powitt Rocks, off North Berwick harbour. The crew of the life-boat were reported to have behaved with great gallantry on this occasion. £7 17s. was also granted to the crew of the life-boat *Sheffield*, stationed at Runswick, Yorkshire, for saving four persons from the fishing coble *Mary*, of Hartlepool, which was in distress and likely to run on the Kettleless reefs during a north-easterly gale on the 16th of June. The life-boat



also assisted to save two other fishing boats which were in dangerous positions in Runswick bay. The coble *Mary* had lost all her nets and fishing gear in the gale, and was nearly full of water when the life-boat took off those on board her.

A reward was likewise given to the crew of the *Admiral Fitzroy* life-boat at Anstruther, North Britain, for going off to the assistance of the brigantine *Isabella*, of Aberdeen, which had been blown out of Aberdeen bay with loss of both anchors and masts, and with sails split, during a fresh gale from the north-east, on the 15th of June. One of the life-boat men was taken on board the vessel, which then proceeded up the Firth.

Rewards to the amount of £25 14s. 6d. were also voted to the crews of the life-boats at Scarborough, Rhyl, Brighthstone Grange, and North Berwick, for different services on the occasion of vessels being in distress during the gales of the past month; £4 10s. was granted to three warders and six convicts at the Spike Island convict establishment, county of Cork, for going off during stormy weather and saving two out of five men whose boat had been capsized near Spike Island. The men were much exhausted when they were rescued. The six convicts were granted a free pardon by the Government in consideration of their meritorious services on the occasion. Various other rewards were granted to the crews of shore boats for saving life on our coasts. Payments, amounting to upwards of £1,000, were made on various life-boat establishments.

The East and West India Dock Company had forwarded to the Institution an additional contribution of fifty guineas. A benevolent gentleman, under the initial "E.," had also sent it a Bank of England note for £50. The late Mrs. M. E. Clark, of Kensington, had left the Society £500, and the late Captain W. Julian, of Aberystwith, had bequeathed it £50. The last-named gentleman was a member of the committee of the Aberystwith branch of the Institution. The Society's instructions for the restoration of the apparently drowned continued to be circulated, and occasionally successfully used.

A new life-boat had been sent to Southend, Argyllshire, where a most efficient and commodious house had been prepared for its reception. The boat was publicly launched at its station on the 21st ult. under the superintendence of the assistant-inspector of life-boats to the Institution. Mr. Robert Ker, of Auchinraith, North Britain, and members of his family, had presented the boat to the Society along with a sum of money to endow it, in memory of Mr. Ker's eldest son, who was unhappily drowned on the coast of Argyllshire. New life-boat-houses were ordered to be erected at Mevagissey, Cornwall, and Valentia, Ireland; the Earl of Mount Edgcumbe, and the Knight of Kerry having respectively granted the sites of ground required for the houses. Reports were read from Captain Ward, R.N., the inspector, and Captain D. Robertson, R.N., the assistant-inspector of life-boats, on their recent visits to various life-boat stations.

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## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 389.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen Mls	[Remarks, etc. Bearings Magnetic.]
39. Ice Signal for	Gulf of Riga	See Note No. 39.				
40. Kintoan beacon	Yang-tse R.	China, See No. 40	...	...	...	Also on Block House shoal.
41. River Clyde	North Bank	Abreast of Newshot Is	F.	24	...	In addition to Notice No. 23. Red light.
	To the W. of	Park Key	F.	24		
Stornoway	Arc lighted to	be extended	...	...	...	About 1st September, 1869.
„ Harbour	On Sied Rk.	A beacon	...	33	...	Is now placed.
42. Filsand	Gulf of Riga	To be im- proved	...	...	...	During alterations a temporary fixed light.
43. St. Tropez	France, S. Coast	Now placed in a tower				
Bougaroni C.	Algeria	37° 5' N. 6° 30' E.	F.	564	31	Est. 1st July, 1869.
44. Schultz Ground	Kattegat Floating	56° 9' 3" N. 11° 11' 5" E.	F.	...	16	Est. October, 1869. Two lights intended.
Romsoe	Great Belt	55° 30' 7" N. 10° 48' E.	F.	51	7	Est. October, 1869. Red light intended.
45. Ushenish	Extension of limits of light	... ..	F.	red	...	Est. October, 1869. Arc to be lighted from N.N.E. to S.W. $\frac{1}{4}$ S.
Humber	Rosse Spit buoy	Colour changed	...	...	...	From red to black and white in vertical stripes.

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

A letter from Port Said states that the dredging of the entrance to the Port is being pushed forward actively. The pedestal is also being erected for the new lighthouse, which, it is said, will be visible for a distance of thirty miles. The present light will be placed on the jetty, and will be provided with an electric apparatus like that of La Hève, near Havre. It is certain that, with the two lights in course of construction at Damietta Point and at Cape Burlos, the coast between Port Said and Alexandria will be well lighted. Those two signals are expected to be lighted about the month of October.

No. 39.—BALTIC SEA.—*Ice Signal in the Gulf of Riga.*—The Russian Government has given Notice, that during the time there is compact ice in the Gulf of Riga, the following signals will be made from the Lyser Ort lighthouse.

By day—A black ball will be hoisted on the flagstaff on the Gallery.

By night—In place of the fixed white light a red light will be exhibited.

No. 40.—CHINA—YANG-TSE RIVER.—*Alteration of Kintoan Beacon Light.*—Information has been received that the following alteration has been made in the Kintoan beacon light, Yang-tse River.

The light is now a *flashing* light of the fifth order.

*Directions.*—Vessels standing in towards the south shore will lose sight of the light on a N.W.  $\frac{3}{4}$  W. bearing: this is a warning to tack or keep more to the Northward.

*Red and White Light of Kintoan Small Beacon.*—The Harbour Master at Shanghai has given Notice, that a light has been established in a small beacon tower on the south bank of the Yang-tse, five miles to the N.W. of Kintoan lighthouse.

The light is a fixed *red* and *white* light, red between the bearings S. by W.  $\frac{1}{2}$  W. to W. by N.  $\frac{1}{4}$  N., and white between the latter bearing and the south bank of the river. The red light should be seen in clear weather from a distance of about four miles, and the white light six miles.

The red light is seen towards the Block House shoal.

*Beacon on Block House Shoal.*—Also, that the screw pile beacon has been replaced on the Block House shoal with the following bearings:—

Kintoan lighthouse	.. ..	S. by W.
Small lighthouse	.. ..	W. by N. $\frac{1}{4}$ N.

The beacon is in six feet water at low water springs, and the upper part of the basket is fourteen feet above high water.

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## A TALE OF MODERN TIMES.

ONCE upon a time there was a certain monarch, whose courtiers tried to make him believe that his power was so great, that even the waves of the sea would obey him. But he was a wise man and laughed at his courtiers, and soon convinced them how mistaken they were, by placing himself on the sea shore, when he showed them that the waves heeded not his presence; but flowed on as they were wont to do.

And the land he reigned over is known by some to this day, as the land of justice.

And for many years afterward there was a certain evil element which had the habit, as before, of committing great destruction wherever it roamed; so that many persons were killed by it, and nothing could resist its fury on the face of that land, or on the surface of the sea.

And there was a certain man who dwelt on this land, and was

celebrated for his knowledge of that evil element. And he said unto the ruling authorities of that land, although I cannot dictate limits to the sea, or say to it, thus far shalt thou go and no further; yet if thou wilt command to be done that which I shall bid thee, I will curb the fury of that evil element, and I will turn his mighty darts, so that they shall pass harmlessly through all those places, where they have hitherto killed so many subjects of this land, and destroyed so much of their property. And the ruling authorities answered him, we will do so.

Then were the plans of the man of science so cheerfully carried out by those ruling authorities, that the fiery darts of that evil element were averted, and no more lives were lost, nor was there any more destruction of property, and its fury on the face of that land, or on the surface of the sea ever afterwards passed harmlessly away; nor has any such destruction, as was caused in former days by that evil element, been known to happen wherever the plans of the man of science were carried out.

And the man of science sought for reward from those ruling authorities for all the good he had done, the like of which no man had ever before achieved. And he did not receive unto the day on which he died, a reward proportionate to the good he had done, from those authorities, in saving the destruction of many lives of his fellow subjects, and the property of his country.

And it came to pass some years after the man of science had died, that the widow of that man was awarded a certain amount of money from the authorities of that land. And behold it was equally the same as those authorities had awarded in the name of the Queen of that land to persons who had written books called "NOVELS."

Then every one said was not the scientific man who saved many lives and much property while he lived, and secured their safety in perpetuity for the future after his death, was not that man a real benefactor of his fellow men, and entitled to a higher reward than the writer of novels? and every one answered he was!

And every one marvelled that the man of science had not been duly rewarded while he lived for the good that he had done, and that his widow had not been presented with a worthier reward long after he was dead, than was bestowed on the writers of novels, for the ruling authorities of that land had been always considered as upright men, and the land they lived in was supposed to be a land of justice!

The man of science, here alluded to, was the late neglected Sir William Snow Harris; the neglect of whom seems to have been the inheritance of his widow, and his case is stated more in detail in our number for January last, where it is shown that his conductors saved H.M.S. *Ocean* at Japan last year, from the same calamity which has so often happened to the ships of the State. Could these statements reach the Queen of this realm in whose name such *rewards* are made, that name of justice would not be so often used in parody as it is!

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### PRESERVATION OF LIFE BY MEANS OF LIFE-BUOYS.

EARLY one morning last week the fleet at Portsmouth was signalled by the Commander-in-Chief to the effect that "Experiments with life-buoys would take place at 1.30 p.m. in the Steam-basin;" and accordingly at that hour a numerous concourse of naval men and dockyard officials assembled to witness the trials.

The life-buoys tried were five in number, one being that at present in use in the Royal Navy, which consists of two rods of metal, arranged in the form of a cross, with a copper sphere at the extremity of each of the shorter arms. Another, the cork ring buoy, as it is called, but too often found, alas! to consist of nothing but straw and shavings, notwithstanding which it is extensively used in the merchant service on account of its comparative cheapness. The remaining three were buoys of a new pattern, invented by Messrs. Welch and Bourchier.

Seven men took to the water for the purpose of testing the relative capabilities of these life-preservers, and on one of them endeavouring to cling to the present "service" buoy it capsized, and it was only with great difficulty that a hold of it could be had, although the water was perfectly smooth. The cork ring buoy also supported one man, but this was the utmost that it could do.

It was found, however, that one of the new buoys was capable of sustaining the whole of the seven men without difficulty, and two more might even have been added to this number. Before going further, it may be as well to give a brief description of this new buoy, as the value of the experiments will then be better appreciated. It consists of an airtight metal casing, with the central portion open from top to bottom for the reception of the person or valuables to be saved. The interior of the casing is divided into two parts by a metal partition, the upper division being intended as a reservoir of fresh water for the use of the person saved from drowning. Below the central open space is fitted a grating, on which the man stands, and as it is some three feet from the top of the buoy, it keeps his vital organs out of the water, a point of the utmost importance; while an open framework of iron or steel protects his legs from the attacks of sharks, to which he is exposed when clinging to the buoys now in use. The apparatus is further provided with two stationary hollow tubes, or sockets, each containing a signal-staff for the purpose of indicating the position of the buoy to the man in the water, and to facilitate its recovery by the ship to which it belongs. These signal staffs are telescopic, and have attached to them fuses or port-fires to serve as signal lights—one being ignited by the operation of "letting-go," while the other is at the service of the man in the buoy to indicate his position on a dark night. Corks or other floats are attached to the iron framework of the buoy by cords of sufficient length to go round a man's body, so as to afford a means of support in the water for several persons at a time.

As already stated, the whole seven men were sustained by a buoy of this description, one being supported on the grating inside, and the

remaining six hanging on outside, all with their vital and respiratory organs out of the water. Nothing could be more satisfactory than the behaviour of these new buoys, and it was quite possible for a man to sit on one of them with head, chest, and legs out of the water, while the ease and celerity with which the seamen got in and out of them was something marvellous. The experiments which have hitherto been made with them have been so satisfactory that the Peninsular and Oriental Company have ordered them to be fitted to certain of their ships for further trial, and it is worthy of remark that while the Admiralty authorities seem to be undecided as to their general adoption, the Egyptian navy is likely to be fully provided with them.

Every one who has heard that agonising cry of "Man overboard!" is well aware how seldom it is under the present system that life is saved, and we require no better proof of this than the recent circular issued by the Board of Admiralty with reference to swimming being made to occupy a more prominent part in a sailor's education. But although a knowledge of swimming is most important, it is all but useless if we do not give a man a good means of support when he has reached the life-preserving apparatus.

A life-buoy can only be theoretically perfect when on arriving at it a man is relieved from further physical exertion in retaining his hold, as in Messrs. Welch and Bouchier's apparatus, and this is a quality in which the present buoy is utterly deficient. The fresh water provided, too, is a great boon, and at a pinch would prolong life for several days. Captain Watson, of Her Majesty's ship *Crocodile*, states that when he had one of these buoys fitted to his vessel, he could see it at least two miles off, while the "service" buoy was scarcely perceptible at the distance of half a mile. In fact, the experiments made with it from the *Crocodile* when at sea were so successful that the new frigate, *Inconstant*, and the *Serapis* one of the Indian troopships, are both to be fitted with them, and it is to be hoped that this is only a prelude to their being supplied to every vessel in the navy.

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#### CROSSING THE CHANNEL.

CAPTAIN TYLER's Report of Trade on the improvement of the means of communication between England and France appears at the most opportune moment in the year. Of the 310,000 travellers who cross the Straits in the year, not less than 46,000 perform the passage in August, while in January and February the numbers range from 13,000 to 14,000. Without affirming that the horrors of this middle passage keep many people at home who would go abroad if their stomachs were a little prouder, or pretending to regard either their detention on this side of the Channel, or the temporary expatriation of a few thousands more or less of British tourists as an unmixed calamity to those they leave behind, it may be assumed that the

question of rendering more tolerable, if not more pleasant, the passage from one shore to the other, is one that concerns much larger interests than those of any number of seasick "trippers," as our contemporary the *Owl* would call them.

It is calculated that out of the 365 days of the year, there are 90 of calm weather, when only people whose souls sicken at the sight of a steamer can possibly be ill. The 102 days of "good round sea and breezes," and the 144 days of "moderate weather and sea," are scarcely distinguishable from the "29 days of gales and storms with heavy seas" in their effects upon the majority of livers and diaphragms. Is it possible, then, to improve this frightful state of things? "It may be safely asserted," writes Captain Tyler, "that there is nowhere any sea service of equal importance which is so much in need of improvement." Travellers who have traversed the Atlantic and doubled the Cape more than once complain of the short lop of a cross sea in the Straits of Dover; but they complain much more of the miserable accommodation on board the crank and shallow boats which, it is assumed, cannot be changed for the better until either Calais or Boulogne Harbour is made accessible at all times of tide, and in all weathers, to vessels of greater length than about 200 to 240 feet, and drawing more than seven to eight feet of water. This is an assumption, however, in which many will not be prepared to acquiesce. That even under existing conditions the boats might be more wholesome and more comfortable than they are, is a belief pretty deeply rooted in the minds and memories of most passengers.

Captain Tyler, in his careful and comprehensive Report, has addressed himself to all sides of the question, and to all the conditions of the case. He examines the only three alternatives which it is necessary as regards the French coast seriously to discuss. These are—the improvement of Calais Harbour; the construction of a harbour a few miles south of Cape Grisnez; and the improvement of Boulogne Harbour. Not forgetting that "Calais has (while Boulogne forms the nearer route from London to Paris) the advantage of being a great centre of communication, via Brussels and Cologne, for Strasbourg, the Rhine, the North of Europe, and North and South Germany," he is forced to the conclusion that, "as far as an improved service with England is concerned, Calais does not appear to be the harbour to which attention should be directed." The scheme of a harbour south of Cape Grisnez, at Audrecelles, belongs to Mr. Fowler, who gives up Calais and Boulogne Harbours as both, in a greater or less degree, liable to sand accumulations, and therefore ill-adapted to the reception, under all circumstances of tide and weather, of the class of vessels which he contemplates. These would be 450 feet long, 57 feet beam, 80 feet across the paddle-boxes, propelled by disconnected engines of 1,500 horse-power, performing the voyage in one hour, and with comparatively little pitching or rolling in any state of the weather. "Comparatively" is an elastic word, but a very necessary one in estimating the probability of exemption from those infirmities which no vessel that has ever yet been constructed, from the *Great Eastern*

to a cockboat, has altogether escaped. Mr. Fowler proposes to ferry the railway carriages as well as the passengers across from London to Paris. Captain Tyler doubts whether this would be worth while, and we fancy passengers would be perfectly content to be able to step, as they easily might do, from the railway carriage to the vessel, and from the vessel to the railway carriage. Captain Tyler, however, approves Mr. Fowler's project of an improved harbour at Dover, and a new harbour at Audrecelles, subject to modifications in detail, and to the previous question of cost—a question which we must do the noble profession of Engineers the justice to remark enters into these magnificent calculations as seldom as the fate of sanguine shareholders.

But the precise object of Captain Tyler's recent investigations was to determine what, under the joint action of the Governments of France and England, might be effected without loss of time and at moderate cost. The present Admiralty pier at Dover, he observes, is already available for the approach and accommodation of the largest military transports, such as the *Himalaya* and the *Serapis*. By improvements, the cost of which is estimated at £100,000 for the pier of Dover, and £500,000 for the harbour of Boulogne, the immediate object of an improved fixed service of eight hours between London and Paris, by day and night, at all times of the tide, per steamers of larger dimensions, may be secured. The more comprehensive project of a new and special harbour on either coast, to be constructed at the cost of £2,000,000 (inclusive of the cost of the new ferry steamers), can afford to wait a little longer, without prejudice to those bolder schemes for bridging or tunnelling the shores which during the present lull in speculative enterprise, and on the eve of the opening of a few "designing" men (we use the epithet in its best and primary sense), and to qualify their names for an inheritance of unqualified renown. To predict that the Straits of Dover will never be bridged or tunnelled (Captain Tyler has more faith in the latter operation) would be to forget the assurance of a celebrated projector that in engineering there will be no impossibility until the race of shareholders—those modern Curtii—is extinct. Captain Tyler recommends that the whole matter should be referred to an international commission, in which, no doubt, the French Government will concur as readily as our own.—*Daily News*.

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#### ANTI-FOULING COMPOSITIONS AND HER MAJESTY'S SHIPS.

WE have frequently alluded to the great superiority of Peacock's anti-fouling composition for our iron ships, but we have seldom recorded a more complete proof of its superior powers, than that given in a Plymouth paper:—the result of a year's test nearly in all parts of the world.



We have frequently had to record the extraordinary performances of Her Majesty's troopship *Himalaya* in all parts of the world, and believe that her successful career may, in a great measure, be attributed to her having a clean bottom, as we understand that she has ever since she was built (some sixteen years ago) used the "anti-fouling" preparation of Peacock and Buchan, thereby saving a large sum annually to the Crown in the shape of coals in comparison with ships using other compositions of an inferior, though more expensive, nature. The *Himalaya* is the only iron ship of war that has ever made a voyage to and from India and China without docking in the country. She is now at Keyham, re-coating with the same anti-fouling preparation, after eleven months service out of dock, and we learn that her bottom, on examination, was pronounced to be "remarkably clean." Her Majesty's troopship *Tamar*, sister ship, is fitting out also in Keyham basin, after having been re-coated with Peacock and Buchan's composition. This ship preceded the *Himalaya* on a trooping voyage to India and China, and on her arrival at Singapore was so foul with Hay's composition (oxide of copper) that divers had to be employed to scrape off the coral and barnacles afloat; shortly after which she had to be docked at Hong Kong, Hay's composition scraped off, and Peacock's applied, purchased in the colony, with which she returned to England perfectly clean. The above facts require no comment, and we are glad to see that the Admiralty are now alive to the importance of appreciating real economy by adopting the best and cheapest material for preserving and keeping clean the bottoms of our iron ships of war. The cost of coating the *Himalaya* (3,453 tons) is, we understand, about £90 (three coats), whilst the composition applied to her Majesty's ship *Valiant*, only a trifle larger, a few years since (and foul in less than six months) cost £1,000, and a composition (Simm's) applied to the bottom of Her Majesty's ship *Monarch* a short time since cost £1,100; but we learn it is not to be paid for if not satisfactory in six months.

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#### THE FRENCH ATLANTIC CABLE.

IN our next number we hope to preserve the journal of the proceedings in laying down the French cable between Brest, Newfoundland, and the United States, alluded to thus by the *Daily News*.

The laying of the French Atlantic Cable has been one of the most successful of the great works of modern times. The Diary of our correspondent on board the *Great Eastern*, which we publish to-day, gives a vivid account of its daily progress, and in doing so illustrates the remarkable perfection which the art of laying deep-sea cables has attained. Those of our readers who followed the expedition from day to day in the brief telegraphic despatches, will recognise the one or two periods of temporary suspense in the detailed account now given

them of the detection and removal of faults in the cable. The immediate discovery of these minute injuries, and the remarkable facility with which the cable was drawn back into the ship and the injured part cut out, suggest that our electricians and engineers have reduced the risk of loss or even injury to a deep-sea cable almost to the vanishing point. The French Company have profited by the costly experience of our own Atlantic Company; and English engineers and an English ship have successfully laid for them the longest cable in the world. To-day our readers will follow with intense interest the records of their daily progress—by no means an unchequered one—with their task. The breaking of the cable on the last day of June, and the rush of the broken end to lose itself in the sea only prevented, by the pluck and readiness of the men in charge; the behaviour of the great ship under the stress of a storm; the mingled good luck and good seamanship which steered her in the very midst of an impenetrable fog into the desired haven, the loss of cable and the necessity of grappling for it at the very close of the expedition, make up a story of the chivalry and adventure of modern enterprise. It is quite clear that no vessel but the *Great Eastern* could have accomplished the task, and no people would ever have attempted it but those who built her.

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#### THAMES MARINE OFFICERS' TRAINING SHIP WORCESTER.

THE annual distribution of prizes to the successful Cadets on board the Thames Marine Officers' Training Ship *Worcester*, lying off Southend, took place on Wednesday.

The committee and a select company went down by train from London, and on proceeding on board the *Worcester* the Cadets manned the yards, the band playing an appropriate air. The frigate was dressed out with flags in honour of the occasion. On the head of the very long pier of this now favourite watering place was hoisted a profusion of colours, and every arrangement was made to give the visitors a suitable welcome. The *Worcester* lies nearly abreast of the pier, scarcely half a mile off, and the committee and the friends of the students have reason to congratulate themselves upon the change of the position of the ship. The view from the main deck was one of the most charming description, and the happy and healthy appearance of the boys indicated that they had benefitted by the "sea" berth of the frigate. The company having gone through the vessel and inspected between decks, the library, and band-rooms, all of which showed the care that had been taken to provide for the instruction and comfort of the lads, the visitors were invited to partake of an excellent repast.

The ceremony of the day took place on the main deck, which was covered by an awning, the Cadets being drawn up in a body in front of the platform. Henry Green, Esq., the chairman of the committee,

presided, and among those present were Captain Toller, Captain J. F. Trivett, Captain T. A. Carr, Mr. De St. Croix, Captain J. H. Smith, commander of the *Worcester*, Mr. E. W. Snell, Mr. Gray, Mr. Paddle, and others.

The chairman having alluded to the circumstances which had induced the committee to bring the ship lower down the river, trusted that the change would prove beneficial to the lads. He thought it was an admirable position for the ship. They could study in quiet and in rather open water, and there was one thing which they would accomplish on board the vessel, which was a very material one to the young sailor, they would get over their sea sickness.

Mr. W. M. Bullivant, the honorary secretary, then read the several reports connected with the school.

Referring to these reports, considering the opportunity we have had for work, they will not be found below the average. I believe that had we been enabled to continue during this half-year uninterruptedly, the school would have stood higher than at last Midsummer, but through the absence of some of the boys from illness our work has been considerably interfered with. I think the removal of the ship to Southend attended with advantages which will be more manifest as time advances. We have now the opportunity of practising altitudes with the sea horizon, which will prove very useful to the boys, in addition to their knowledge of the artificial horizon. The conduct of the boys when at their studies has been, with some exceptions, satisfactory. I should like to be able to report the same of their general application, but possibly the interruptions they have met with may have had much to do in diverting their thoughts from regular work. We trust that those boys who are leaving the ship with Worcester certificates, having completed their course on board, will prove useful in their future profession. The diligence and attention to duty which some of them, especially, have manifested while here, have been very commendable. I remain, Sir, yours obediently,

W. T. READ.

The Chairman then proceeded with the presentation of the prizes, and the cadet, Baron Beaumont, was called on the platform to receive the Queen's gold medal.

Mr. Bullivant read the following letter, which he had received that morning :—

“ Windsor Castle, July 13th, 1869.

“ Sir,—I had the honour to receive your letter of the 5th instant, informing me, by direction of the Thames Marine Officers' Training Ship *Worcester*, that the pupil Baron Beaumont had been selected this year to receive the medal granted annually by her Majesty as a prize to the boys of H.M.S. *Worcester*. I have now received the Queen's commands to signify her Majesty's approval of this award, and I have the pleasure of transmitting the medal to you forthwith.

“ I have the honour to be, Sir, your most obedient servant,

“ T. M. BIDDULPH.

“ W. M. Bullivant, Esq., Hon. Sec. Thames Marine Officers' Training Ship *Worcester*.”

The Chairman said it was her Majesty's wish, in the establishment of this prize, to encourage the boys to acquire and maintain the qualities which would make the finest sailor. Those consisted of cheerful submission to superiors, self-respect and independence of character, kindness and protection to the weak, readiness to forgive offence, desire to conciliate the differences of others, and, above all, fearless devotion to duty, and unflinching truthfulness. He then handed the gold medal to the lad, and trusted that he would long be able to wear that valuable prize. Mrs. Smith, the wife of the Commander of the *Worcester*, pinned the blue ribbon of the medal to the lad's jacket, and he retired amidst general cheering.

The band then played the National Anthem, and the Cadets gave three hearty cheers for the Queen.

The Chairman then distributed the prizes, for which at present we have not space. Most of the boys as they came up were loudly cheered by their fellow Cadets and by the company.

MEMORIAL TO THE LATE SIR JAMES ROSS.—A project is afloat for providing a memorial to the late Sir James Ross who had the good fortune to serve in every Arctic Expedition under Sir Edward Parry and his uncle, Sir John Ross; he passed nine winters and sixteen summers in the Arctic Regions. Among his great achievements he planted the British flag over the position of the North Magnetic Pole, whilst serving with Sir John Ross in the Expedition to Felix Boothia; and it was his glory to attain the highest latitude in both hemispheres ever reached by man—in the North when he served with Parry, and in the South when he commanded the Antarctic Expedition. The Committee who are conducting the proposal invite the support of any who desire to join in this tribute of honour to the memory of so renowned a navigator; and appeal not only to the naval service but to the country at large.

#### NEW BOOKS.

**AZIMUTH AND HOUR ANGLE**, for *Latitude and Declination*;—*or Tables for finding Azimuth at Sea by means of the Hour Angle, etc., etc.; with a great Circle Sailing Table to tenths with arguments to every 2°.* By Major-General R. Shortrede, F.R.A.S. London: Strahan and Co., 56, Ludgate Hill. Supplied by John Lilly and Son, etc.

THE navigator, be he English or French, has here a handy book before him with a somewhat odd arrangement, for it commences with

a preface and ends with an introduction, the former giving examples of the use of the main body of the tables, and the latter referring to Globular Sailing. But we might say concisely, that the work is formed by an elaborate set of tables, designed, as we are informed by the author in his preface, "to facilitate the finding of Azimuth at Sea by means of the Hour Angle, in all latitudes up to  $80^{\circ}$ , and Declinations up to  $30^{\circ}$ ."

Doubtless, since the compass has been so much interfered with by the free use of iron every where in the ship, even to that material being adopted in the construction of the ship herself, the above expressed object of facilitating the finding of the Azimuth is very much to be commended, seeing that the navigator is unhappily forsaken by his old and valued friend the compass.

Now, with such an object in view, and the well known elements at hand necessary for the purpose, we expected to have found the author of the work before us, using as his arguments latitude, declination, and hour angle in the legitimate manner; applying them marginally, and taking out simply by inspection what he has sought for at once, and to his satisfaction. But let not the seaman lay this to heart! he who would use these tables, let him not flatter himself that he has so readily found the end of his labours. He is not to have what he wants by inspection even with these tables; for in a few lines further on in the preface to his work, the author tells him that:—

"By giving Azimuth as an argument and Hour Angle in the body of the table, the arrangement becomes compact and systematical throughout, as well as convenient for use, and each latitude is complete at one opening."

Now we are quite willing to concede "compactness and symmetry" as essential in a work of this kind, but to us this arrangement appears anything but convenient. To arrive at the Azimuth is thus a tedious operation when it should not be so. We are quite agreed that the true Azimuth is the important element to find, but this is made a secondary affair by the arrangement adopted by the author. The hour angle is tediously spread out in the body of the tables, and the navigator has to find by proportions what should really have occupied its place. Although "the hour angle is given to the nearest minute of time, and the declination to every two degrees," the Azimuth which is the thing required is mostly only given to every  $5^{\circ}$  and thence interpolation, etc., becomes necessary.

It is not very long since we announced the appearance of a work that really fulfils the object proposed by our author, wherein arguments are made subservient as they should be to find the true Azimuth, which element forming as it should the matter filling the main body of the work, is found readily by inspection to *minutes*, a very convenient arrangement setting aside all calculations and reducing an important and in these days an indispensable operation to one of mere inspection. We could not assure the seaman that he would be satisfied with the above process as necessary for this purpose in the work before us, or by commending it to his attention, leave him

to discover very inconvenient arrangements adopted by the author when that of Staff-Commander Burdwood, to which we have just alluded, must be already in his hand fulfilling what it proposes.

At the same time we do not by any means detract from the merits of the work before us in point of science. But in treating the scientific elements on which depend the finding of the Azimuth, we consider that the author has devoted the large body of his space to a secondary or less worthy object, and left the principal to be found by calculation, instead of eliminating this at large through that space so as to be readily arrived at by inspection. In fact as a practical work we do not think it will meet the views of seamen, nor would we recommend the Old Great Circle problem to be abandoned for the table of the author, although in justice we must add that he has endeavoured to make the whole extensively useful by adapting a French translation to it for such navigators.

**THE THEORY OF NAVIGATION AND NAUTICAL ASTRONOMY, together with Plane and Spherical Trigonometry with Examples for the use of Marine Cadets.** By *W. T. Read, M.A., etc.* London: *Bell and Daldy*, 1869.

Assuredly navigation always has been and always must be founded on the precepts of Nautical Astronomy. But the Marine Cadets in *H.M.S. Worcester*, with their heads full of all the knowledge they can obtain from that science, and the elements of plane and spherical trigonometry which they will find in the work before us, will yet have to look for further information which might have been expected in a "theory of navigation." They must be prepared with a knowledge of the principles on which the log-line and its glass are constructed, the compass and its evils, the construction of the chart they will have to use, the day's work, departure, etc., none of which matters do we find in the work before us, but which might have been contained in a very brief space. And certainly as there are now abundance of works afloat on navigation for choice, the absence of the above simple elements in such a work can form no recommendation to it. Still as such information is easily supplemented from other works, let every one have his own book. But we are inclined to believe that the attractions of the sea were never found in the trigonometrical canon, and that a surfeit of such things will never make seamen of the materials in the training ship *Worcester*.

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A Feejee Island correspondent of the *Honolulu Gazette* says there are at Libruka, on the Island of Ovalan, about thirty foreigners, all sailors, most of whom have run away from ships and turned Feejeeans. The principal man among them, and the one who has most influence

with the chiefs—and, in fact, is a very respectable and steady man—is David Whiffey, who thirty years ago, left a Nantucket whaler, and making friends with the chiefs of Libruka, settled there. He has a number of wives and a large family.

## REWARDS FOR SAVING LIFE AT SEA.

“RENDEZ TO ALL THEIR DUE. \* \* HONOUR TO WHOM HONOUR.”

Captain.	Ship.	Reward.	Particulars of Services.
Stefano Trifilete <i>a</i>	<i>Anita Tagliavia</i>	Gold Watch and Chain	For saving crew and passengers of the <i>Omar Pacha</i> (98 souls), burnt at sea 22nd April.
R. Niemeyer <i>a</i>	<i>Pymont of Hamburg</i>	Gold Watch and Chain	For saving crew and passengers of the <i>Blue Jacket</i> (10), burnt at sea 16th March.
Loftus Master <i>a</i>	<i>Peveril of the Peak</i>	Telescope	For saving crew of the <i>Gasina Margareta</i> in September last.
William Hogg <i>a</i>	<i>Pequot</i>	An elegant Chronometer, mounted	His ship disabled by loss of her rudder, himself rigged a temporary one at great risk of life, but saved his ship. Donors, Consignees and Insurers of cargo.
Holher <i>b</i>	<i>J. H. Rae of Windsor (N.S)</i>	Gold Medal of 1st class	Humane service to crew of French ship <i>Nautonnier</i> .
James Herbert <i>c</i>	<i>T. &amp; R. Walsh of Queens-town</i>	Gold Medals	Services to crew of Dutch brig <i>Energia</i> , on 18 March, 1869.
John Cranford <i>c</i>	<i>India of Glasgow</i>	Large Silver Medal	Services to crew of the <i>Hollands Trouw</i> , on 20th July, 1868.
A. Barghorn <i>a</i>	<i>Mathilda of Brake</i>	Telescope	For saving crew of <i>Dr. W. Ridley</i> , sinking on 4th Jan., 1868.
John Woodcock <i>b</i>	<i>Tanjore</i>	Silver Medal of 2nd class and Diploma	For rescuing a child fallen into Marseilles harbour, on 30th August, 1868.
Corsen <i>a</i>	<i>Freya of Oldenburgh</i>	Telescope	For saving crew of the <i>Jamaica</i> of S. Shields, on 19th April, 1868, when sinking.
Peter de la Mare <i>b</i>	} <i>St. Heliers Jersey</i> }	Gold Medal, 2nd class,	For services to the survivors of the crew of the French lugger <i>Villa Franca</i> of Dinan, in January last.
John de la Mare <i>b</i>		Silver Medal	
Phillippe de Richeb <i>b</i>		Silver Medal both 1st class	
G. D. Taylor, and 1st & 2nd Mates <i>d</i>	<i>Flying Fish of London</i>	Telescope Gratuities	For saving crew of the <i>Maria</i> a Papenberg ship.

*a* Presented by the British Government. *b* By the Emperor of the French. *c* By the South Holland Institution. *d* By H.M. the King of Prussia.

THE  
NAUTICAL MAGAZINE

AND

NAVAL CHRONICLE.

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SEPTEMBER, 1869.

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A FEW WORDS ON TAKING CARE OF RUDDERS.\*

It is a somewhat curious and interesting fact, that in the many articles on rudders, and schemes to make temporary substitutes for them, that are to be found in the *Nautical* and elsewhere, no one has told us anything (as far as I have observed) about taking care of them. To me, this has always appeared much more necessary information than how to make a temporary rudder: because I am of opinion that nine-tenths of the rudders that are lost might have been saved by such means as I am about to suggest in this short paper: always premising that the rudder is good; for we know that not unfrequently ships are sent to sea with a decidedly bad one, which no possible care or skill will prevent from being lost.

As a seaman I would express my sympathy with the unfortunate commander who has to take charge of such a ship. But my remarks have reference to good, sound rudders, and in the present age of iron ships, we might assume that *they* at least have good ones; and yet the percentage of rudders lost annually is still large, even in iron ships, not excepting the *Great Eastern*,† which may be cited as the perfection of strength.

I have given some time and attention to get at the details of how rudders are lost. In very many cases,—indeed I venture to say again

[\* We commend this important communication to the attention of our mercantile commanders: and we trust that the modest style in which the author refers his views for the consideration of "Lloyd's," and ship-builders generally, will also meet with the attention which should be accorded to one whose object is to reduce the losses to which owners are subject by a glaring and yet uncorrected evil.—Ed. *N.M.*]

† So strong that her rudder once took command of the ship, and was not mastered without a host of hands, and then with much difficulty. Her disastrous run down Channel, we believe, was the occasion.



nine-tenths,—the loss may be described thus:—You meet **Brown** in the street, who has just put back with loss of rudder. You express your sympathy first, and, being anxious for information, ask him how it occurred? “Why, the pintles were carried away, of course,” he replies, and looks rather hard at you, suspecting you are somewhat of a “muff” for asking the question. You possibly in turn, may smile, and reply, “Yes, I had some idea the pintles would break before you lost it, but tell us how it came about, for surely the pintles did not give way by putting the helm hard up or down, or in carrying the rudder fore and aft? Was there not something went wrong immediately previous to the rudder going?” **Brown** steadies at this, and guesses you want to know too much, but proceeds to tell you.

“Well, you know, we were head-reaching under three close reefed topsails in a horribly nasty sea. *She* took a deuce of a plunge, spun the fellow over the wheel, and nearly overboard; the tiller took charge, and bang it went from side to side for a minute or two. The pintles then went, and finally the rudder snapped under the counter, and there’s the whole story.” Such is usually the history of the loss of a rudder. There are other cases such as going rapidly astern, and losing it whilst it is in the act of being shifted from side to side. This accident happened to a fine new Blackwall ship, a few years ago, that was outward bound, and beating down Channel in charge of the pilot. On one occasion, whilst in stays, she acquired rapid sternway. The helm was shifted, and when it passed the fore and aft line, it spun the wheel out of the man’s hands, and flew over with violence, snapping the pintles like carrots, and the ship was obliged to put back to Blackwall. I think the rudder was *not* lost in this instance, but I write from memory.

Now, surely these and all similar accidents are preventible. The rudder of a ship is somewhat analogous to the lid of a chest. Allow the lid to fall back and no amount of strength in the hinges will prevent it from being torn away from the chest. Just fancy where you would find the lids of the midshipmen’s chests, were it not for the iron break usually placed at the side. It would surprise anyone who thought on the subject, that some similar means have not been provided in all ships to prevent the loss of a rudder under any and all circumstances, except in the case of some rotten old wooden craft, which ought never to have left the dock. It is true, that in a good many iron vessels, certain short projections would be found sticking out from the sternpost to prevent the rudder from going over to a greater angle than safety requires; but these I contend would be snapped off like carrots, should the tiller take charge. Better, far, is the plan adopted in not a few of our first class steamers, of friction brakes surrounding the rudder-head, by which means the rudder is held in complete control. This is an excellent invention, and ought to be found in all ships, whether of sail or steam. However, as I doubt that such a thing would be found in a single sailing ship out of the kingdom of Great Britain, I will describe my method, which is simple and commends itself as *being within the resources of every*

commander. I call it *MY* method; still it may be in use by many men who never heard of *me*, or such an arrangement. I may only claim to be the first to publish it, and it is this:—

On the after end of the tiller I have two ten-inch rope pendants, one passing to each side of the ship, then leading round a strong bollard or timber-head on the quarters, just as the ship may be so fitted, and the ends of these pendants then led fore and aft the deck. Then a purchase of six parts of a four inch rope is hooked, or lashed on to them, and belayed with so much slack on the pendants as to allow the tiller to go over to  $40^\circ$  from the fore and aft line. This slack in no way impedes the free steering of the ship at all times. Any little chafe on the rope, caused by friction on the deck, may be obviated by a little parcelling or service. I carry these pendants on the tiller *always* in temperate latitudes and hurricane localities. Should the wheel spin, and the rudder attempt to take charge, the tiller is thus prevented from going over to a dangerous angle; and in half a minute we have the tiller fast fore and aft by hauling the purchases taut, and all danger is averted. In head-reaching or lying-to they are usually hauled taut and belayed. Of course this will depend much on the behaviour of the ship, and nature of the sea.

It is usual in all ships to carry what are termed relieving tackles, fitted with hooks. Such tackles are almost useless for three reasons:—the ship *cannot* be steered with them *always* on.\* When an accident occurs, and the tiller takes charge, they *cannot* be put on. And lastly, the hooks, as usually fitted in the majority of ships, are quite unfit to stand the jerk of a ton weight, and I know from experience that our tiller has gone over with a jerk exceeding six tons. The proof:—In my earlier experience I considered a six inch rope sufficiently strong: now, according to Tinmouth, the mean strength of a six inch rope is 6·3 tons, and its maximum seven tons. On one occasion I had a new pendant of that size on, when the wheel spun, and over went the tiller with violence, breaking our new six inch rope, and tearing up the standard of the side tiller blocks, bringing with it three deck planks: fortunately we were able to secure the tiller with the lee pendant and weather wheel chains, which remained good. Now, although this may be negative evidence, still *I* have not the slightest doubt we should have lost our rudder, had it not been for the pendants, even although one *did* break. But before doing so it had decreased the violent momentum by at least six tons, which most assuredly saved it. Since that occasion I have carried ten inch ropes.

I will give another instance in which, I believe, the rudder was saved by pendants. We were in the act of rounding to in a severe typhoon in the China Sea, and every precaution had been taken with the helm. The two men at the wheel held on so well (at a desperate plunge), just after coming to the wind, that the spokes broke off in their hands, and simultaneously the starboard standard of the tiller

\* In ships of war, we believe, this is done, at least we have known it in a line of battle ship long ago.—ED.

blocks went *down* through the deck. But our tiller pendants held on like "bull dogs," and the tiller was fast, fore and aft, in half a minute. Again it may be remarked, this is only negative evidence, because I cannot say positively the rudder would have gone in either case. True, it is so, but I think most sailors will concede the probabilities it would have done so were extremely great. So convinced am I of their utility, that I do not consider the rudder safe without them in the absence of a permanent break. And I unhesitatingly affirm that no rudder would be lost, if such means as I have detailed and described (somewhat imperfectly) were adopted for its security. The tiller must break or the rudder head be wrenched off first, and such objections have been urged against this method. Still a little reflection on the matter will convince anyone that such a contingency is very remote: because it will take three times the force, which would snap the pintles, to carry away a good hammer-wrought iron tiller, or destroy a sound hard wood rudder-head.

Let us take for example a wooden rudder, say sixteen inches thick, by three feet six inches broad, and suppose a lateral force of six tons to be exerted so as to jam it hard over on the sternpost. It is required to find the strain on the pintles. We may arrive at a very close approximation by considering the rudder as simply a lever, and the outer edge of the sternpost the fulcrum eight inches from centre of the pintles. Hence twenty-one inches (half the breadth of the rudder) divided by eight inches =  $2.625 \times 6$  tons = 15.75 tons, which product divided by four (the usual number of pintles on a rudder of this size) will give 3.937 tons as the lateral force on each pintle. I am of opinion that no yellow metal pintles of the size under consideration will bear any such strain. Moreover this is the result theoretically, practically it will be found that the fulcrum is more likely to be within four inches of the pintles, instead of eight inches, on account of the shipwrights rounding off the edge of the sternpost. And the evil is aggravated if the ship should have been in dock frequently to re-copper. With a fulcrum of only four inches, the strain would be doubled.

I think sufficient has been said here to prove the utility of this simple method of taking care of our rudders; indeed they are absolutely safe by these means, and the material for it is always at hand.

To owners, shipbuilders, and to "Lloyd's," if the writer might take such a liberty,—he would recommend a large chock faced with India rubber four inches thick, and a half-inch board to be bolted on the upper deck over that, against which the tiller would strike should it take charge; the chocks to be so placed as to allow the helm to go over forty degrees. The expense is absolutely nothing considered with reference to the safety of the rudder. If a little additional expense were allowable, I have a plan for screwing the tiller safe amidships, should the whole of the steering gear be carried away, and curiously enough this accident happened to a ship in which I was present many years ago; where of course the rudder took charge, the pintles soon broke, but still it held together, although knocking about with fearful violence, so that we were apprehensive of its breaking up

the counter. This rudder was on Lihou's patent, where the centre of the head is perpendicular to the pintles, and the method may be thus described.

The tiller was secured to the head of the rudder by a through bolt and clenched. On the poop deck, for the rudder hole, was fitted a strong iron plate which acted as an upper pintle. Then, when the lower pintles were all broken the rudder fell until brought up by the tiller on this iron plate, and there, of course, it continued to play about, with great violence close on the surface of the deck. Our desire was to get rid of the rudder, and we were obliged to smash the head, with the points of mauls, until the through bolt was reached, when the rudder took its departure much to our relief.

The more I reflect on the general insecurity of rudders, and the number of ships yearly abandoned from this cause, the more incredible does it appear to me that no means have yet been devised and insisted upon being fitted, to prevent their loss under ANY circumstances whatever.

It really is ludicrous to see a surveyor go poking about to find a decayed timber or plank, when the fact is that fifty rotten timbers would not render a ship as unsafe as many other things which pass unnoticed: in fact, entirely unheeded. I have here drawn attention to one of them, and I assert advisedly that there is not perhaps a single sailing ship belonging to Great Britain with a scientifically secured rudder. I repeat, rudders ought not to be lost,—and insignificant and unknown as the author of these lines may be, he maintains that it is simple engineering business to secure them permanently. There is no structure built or erected by man that possesses so little strength, and is so unscientifically put together with a given quantity of material, as a ship.

But I forget,—this is not the subject of the present paper. Perhaps a future one may contain some of my views on the art of ship building. Meanwhile, until the owners of ships secure their rudders, as I have pointed out, I hope my professional brethren will give this simple method a trial. And if they do so I am positive that the losses of rudders would be reduced by a large percentage.

QUOD VERUM TUTUM.

3rd July, 1869.

At Sea, lat. 17° S., long. 4° W.

TO THE EDITOR OF THE *Nautical Magazine*.

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#### LAYING OF THE FRENCH ATLANTIC CABLE.

*Diary of the Great Eastern, by the reporter of the Daily News.*

THE laying of an electric cable across the Atlantic is an event of so much interest and such rare occurrence, that we are glad to avail ourselves of the highly interesting account given in the *Daily News*, as our pages contain a full account of the troubles and difficulties

which mark the history of this subject in regard to ourselves. Doubtless the experience obtained by our own people, has laid the foundation for the off-hand success which has attended the present cable, and we heartily congratulate the gentlemen concerned at so complete and satisfactory a termination of their trying duties. The whole transaction has been a complete success: the recovery of the parts where the faults were discovered, the remedy to these, the buoying of the cable on parting with it in a gale, the recovery of the buoy with the end, and not excepting the dragging for it afterwards, all were successful and every arrangement from ship to officer and man was just what it should be. Here science and seamanship have worked together, and the result is a third Atlantic cable; in fact, a marvellous event in a marvellous short space of time, and we may say of a satisfactory termination *finis coronat opus*.

On Saturday, June 19th, with as little fuss as if she had been a twenty-ton pleasure yacht, and with far less noise than the screw colliers which had sailed a few minutes previously, the *Great Eastern* left her anchorage at Portland, and steamed towards Brest, her object being to splice the eight miles of massive shore end which had already been laid from that port by the Telegraph Construction Company's ship *Chiltern*, to the two thousand and odd miles of cable stowed away in her own tanks—and this completed, to steam with all prudent speed to St. Pierre, and connect for the third time the Old and New Worlds with an electric wire. About noon to-day the lighthouse at Ushant was distinctly made upon our port bow, and five hours later the big ship was safely and quietly brought to an anchor in Brest Roads. The weather was lovely, and as a matter of course we were soon surrounded by a dozen or more French steamers filled with excursionists, who had come (some of them from Paris) to have a look at us. As far as looking at the outward appearance of the ship was concerned they must have been fully satisfied, for they circled round us again and again, indulging as they did so in an occasional imitation of an English cheer, "Heep, heep, heep-hurrè!" As our sojourn at Brest was only intended to last for a few hours, we were reluctantly forced to refuse admission to the ship to all. Courtesies had to give way to the solid business of making the splice, which was begun forthwith on board the *Chiltern*, the end of the cable being passed over the stern of the *Great Eastern* for that purpose.

June 21st, three p.m.—At 2.30 a.m. the sky without a cloud, and the moon nearly at the full, the *Great Eastern* began slowly to steam towards America, the firing of two guns announcing to the inhabitants of Brest that the splice had been completed, and that the laying of the Franco-American cable had begun in earnest. Up to the present time some fifty miles have been paid out, all going smoothly, the machinery working with that ease and regularity which were so charmingly remarkable in 1866.

June 22nd.—No event worth chronicling. The cable has been running smoothly and well, and fully satisfying all connected with it.

At midnight a change was made from the main tank (from which the cable had been heretofore paid) to the fore tank. The operation seemed a "ticklish" one, but nevertheless the bight was transferred in a quiet, business-like manner, wholly without that fuss and hubbub which so often accompanies such proceedings. The engines were slowed, a few words of conversation passed between the chiefs and their satellites, and before we outsiders were well aware of the fact the deed was accomplished. It is not to be supposed that we have exhausted the main tank of cable—far from it. Only some 250 miles have been taken from it; but it has been thought desirable (in order not to interfere with the "trim" of the ship) to commence paying from the fore tank before the main is emptied.

June 23rd.—Weather lovely, sea without ripple, and the big ship almost as steady on the water as a rock. All going well, as well as possible—so well, in fact, that the greater part of the "consulting" staff on board have been forced to take refuge in "deck billiards" by way of amusement. We have passed out of shoal water, and before to-morrow we shall be in 2,000 fathoms.

June 24th.—The monotony of well-doing is seldom continuous for long. This morning at 2.30 we were roused from our beds by the clanging of the alarm gong which hangs outside the testing-room, and the noise of people running about on deck. The engines of the ship were reversed at full speed, and in little more than a minute her way was stopped. Paying out of course ceased instantly, and powerful "stoppers" made of plaited hemp were placed on the cable. Then came a pause, during which the electricians set themselves to work to define accurately what was the matter. Their verdict soon followed. A fault was pronounced to have passed out of the ship and to be about a mile behind us. Picking up commenced almost immediately. The large grappling drums in the bow of the ship (worked by a sturdy and wondrously powerful trunk engine) were made to exert their strength upon the cable, and to pull it on board over the stern; the movement of the paying out machinery being simply reversed during the process. In two hours' time, when about 460 fathoms had been pulled in, orders were given to stop, and the recovered portion was cut out, and with it, as Mr. Willoughby Smith soon informed us, the hateful fault. Splicing was commenced forthwith, and by 9.30, ship's time, we were once more "paying out" again; the delay having been exactly seven hours.

There is a silver lining, it is said, to every cloud, and the bright side to this disagreeable contretemps was undoubtedly the magnificent manner in which the picking-up machinery did its work. The cable came on board slowly and regularly, without jerks or starts, and at no time did the strain (although we were in 2,000 fathoms of water) exceed 78 cwts., not half the breaking strain of the cable. A further source of congratulation was the small distance which the fault was allowed to go overboard, and these two facts contrasted most favourably with the similar accidents of 1865, when the fault on one occasion was allowed to get thirteen miles astern of the ship, and the picking

up machinery, when called upon to do its work, was not only most obstinate and irregular in the performance of it, but was ultimately the indirect cause of the breaking of the cable.

There is one more fact deserving of record, and that is the quiet, methodical, and businesslike manner in which the mishap was encountered by all whom it mainly concerned. Sir Samuel Canning and Captain Halpin were at their posts in an instant, the one superintending the picking up machinery, the other keeping the ship in admirable position with regard to the cable, and both encouraging those working under them by their wonderful cheerfulness of demeanour. From the time the gong sounded till the paying out recommenced, no unseemly noise, no bawling, or nautical yelling was once audible. In the afternoon Mr. Willoughby Smith and Mr. Laws made the post-mortem examination of the faulty and deceased piece of cable. The cause of death was found to be a minute perforation of the gutta percha covering of the conductor. The perforation was pronounced on all sides to be old and not recent, since the edges of it were discoloured and the cavity filled with fine granular matter. It had probably originated during manufacture, but had not become manifest until the cable was subjected to the strain and pressure of the paying-out machinery. It is a curious fact that this was the first time that it had been found necessary to cut out a single piece of the cable since its manufacture had commenced at Greenwich eight or nine months ago.

June 25th.—Weather continues to be all that can be desired. We have passed a great number of homeward-bound vessels. At one time as many as fourteen were visible. Two of them, the *Illoro*, of Aberdeen, and another, passed so close to our bows as to compel us to alter our course for a few minutes. We have paid out 530 miles of cable, the ship being some 2,200 tons lighter than when we started. As the fore-tank is gradually emptied, we are getting considerably "down by the stern."

June 26th.—The sounds of the eight o'clock breakfast bell had scarcely died away, and we were beginning to assemble for the morning meal, when our ears were assailed by the discordant clanging of the alarm gong. Another fault; stop the ship, hard astern, and so on as before. Picking up had fairly commenced by 8h. 45m., and when 360 fathoms had come in-board, the electricians decided that the fault had been reached. This portion of the cable was accordingly cut out, and by eleven o'clock paying out had again commenced. The delay occasioned by this second mishap amounted to only three hours. The picking up machinery again acted faultlessly, and the cable went out with a steadiness and regularity that caused its praises to be upon every lip. Although we were in 2,500 fathoms of water, at no time did the strain on the cable exceed 64 cwts. When the fault was reported 630 miles had been paid out. The fault was somewhat similar to the last. It was a puncture extending exactly to the conductor. It had the appearance of having been made with some semi-sharp instrument, as a nail, or piece of sharpened wire. It was rough inside, and the general opinion seemed to be that it was recent.

We have been greatly favoured in the matter of weather. The sky is clear and the sea calm, with a slight easterly breeze.

June 29th.—“No news is good news,” says the old adage, and so no entry in a diary means that all has been going so well that there is positively no profitable topic for the recorder’s pen. For the last two days we have had clear sky and smooth sea, and the cable has been running continuously and without hitches of any kind. Last night at ten o’clock (ship’s time) the fore tank was emptied, and a change was made to the after tank. To the uninitiated this seemed a task replete with difficulties and dangers, but in the hands of Sir Samuel Canning and his experienced staff these were reduced to a minimum; and the long bight of cable (nearly 500 feet) was conducted from one tank to the other with the greatest ease, and with that quiet, business-like assurance which up to the present time has characterized all the operations of this expedition. Some 1,050 miles of cable have been paid out, and the fact that we have got successfully into four figures, and that we are fast “breaking the neck” of our gigantic task, seems to exert a cheerful influence over all on board. The resistance of the cable has increased very much during the last few days, and is nearly two and a half times as great as when we left Brest.

July 1st.—The weather was so bad yesterday that it was impossible to sit down quietly and record the events of the day, notwithstanding that they were numerous, and, as will be seen, deeply interesting. On the afternoon of the 29th the weather began to change; the sky was overcast, and a breeze sprang from the south. This continued to increase, till ten or eleven o’clock (when most of us “turn in”) it was blowing half a gale of wind. Although one could not help thinking that if any fault occurred during the continuance of the high wind all might not go so well with the cable. Still those whose duties did not oblige them to keep a night watch managed to forget the many perils that do environ an Atlantic telegraph till the gong aroused them from their slumbers at five o’clock on the morning of the 30th. The ship was stopped, and picking up commenced as quickly and as easily as on any other occasion, but the movement of the ship was several times greater than it had been at former times when picking up had become necessary. The wind had increased in the night, and now it was blowing a gale, and in order to keep the stern of the ship directly over the line of the cable it was necessary to back her almost at full speed directly against wind and waves. This, of course, made her kick and heave now and again tremendously, and three or four times she shipped green seas over her stern, fairly drenching those on duty there, and breaking the little gallery around the stern V wheel, which certainly is not less than thirty feet above the level of the water. Orders were given to be in readiness to buoy the cable if necessary; but, as the fault was pronounced to be close at hand, the process of picking up was continued—and most successfully and uninterruptedly continued—till about five miles had come on board, when, a heavier sea than usual striking the ship, she gave a kick so sudden and severe



that the cable was unable to bear the extra strain thrown upon it, and it parted on board, some 200 feet beyond the drum.

All check being thus suddenly removed from the cable, the drum began to revolve with great rapidity, and the broken end to make frightfully rapid progress towards the stern of the ship, over which it would have disappeared in a very few seconds had not the stout fellows on duty with the stoppers put forth their utmost strength, and so managed to save the French Atlantic Cable literally by a few inches. The buoy was in readiness, and in an incredibly short space of time the buoy-rope was made fast to the end of the cable, and the buoy itself cast adrift. Two other buoys were then let go—one by the *Great Eastern*, and another by the *Scanderia*—to serve as mark-buoys should any accident befall the buoy which held the end of the cable and grappling become necessary.

A gale here follows which our space does not admit.

July 2nd.—By six o'clock this morning "the tempest had dwindled to a calm," and all being prepared, a boat was lowered with a few experienced "hands" in her, who soon managed to attach the chain of the buoy to a stout rope conveyed from the ship. The latter was then cast adrift, and once more the cable, banished for a time, was hanging from the *Great Eastern*. Picking up then commenced, and by half-past seven the end of the cable had come over the stern of the ship, and an hour later the electricians pronounced the fault to be on board. Splicing commenced forthwith, and by 10.30 to the unspeakable delight of every one, we were again "paying out" and making our way westward. This was the first time in the history of submarine telegraphy that a cable had been cut, buoyed, and picked up again in such deep water during the process of laying. Although as an engineering feat it is not to be named with the famous grappling of 1866, still as an accomplished fact it is scarcely less important. We had already seen that in calm weather, with the necessary machinery, there was no real difficulty in picking up a cable in 2,500 fathoms, and now Sir Samuel Canning had shown us that should the weather be unfavourable for immediate recovery, it was comparatively easy, in skilful hands, to buoy the cable in a gale of wind, and then when the storm abated to pick up the buoy and resume operations. The fault has been cut out and examined. It differs in no essential matter from the two previously described. Their mode of occurrence puzzles everybody, and although many ingenious theories have been broached, none of them will "hold water." One of the officers of the ship is now always on duty in the tank.

July 4th.—The anniversary of American independence has been allowed to pass as quietly as any other day, since, strange as it may seem, we have no American citizen on board. All has been going well, and since the last report we have been free from the sound of the gong. By this evening we shall have paid out 1,500 miles of cable. We are just entering the deepest water, and shall soon be in 2,700 fathoms, or rather more than three English miles—a very tolerable submarine valley, the depth of which may perhaps be better

brought to mind by considering that were Mont Blanc lowered into it there would still be more than 1,000 feet to spare between the summit of the mountain and the keel of the *Great Eastern*. During the last few days Mr. Willoughby Smith has occasionally favoured us by publishing a few budgets of news received through the cable.

July 8th.—I have made no entry in my diary for three days; and for this omission I offer two good excuses. First, there has been nothing of an unusual nature to record; and secondly, the ship has been rolling so heavily that it has not been by any means an easy matter to put one's thoughts on paper. It is a great pleasure to be able to put forward the first excuse. It is now more than a week since we have heard the gong. There is no part of the journey during which a fault would have been so serious as that which has been accomplished during the past three or four days, the minimum depth of water in that period having been 2,200 fathoms. We have now begun as it were to ascend the western hill of the Atlantic, and from this time till we reach the island of St. Pierre the water will be getting hourly more shallow. We have paid out nearly 2,000 miles of cable, and have already exceeded by 100 miles the length of any submarine cable hitherto submerged. Last night, at ten o'clock, the after-tank was emptied, and for the third time the process of transferring the bight (this time from the after to the main tank) was performed successfully. I have said the ship has been rolling. On the 6th we had a moderate gale from the north-west, and yesterday, although the wind had much decreased, there was a very heavy swell, and the ship, having lost the greater part of her top weight, rolled considerably, once or twice as much as  $25^{\circ}$ . This motion exerted wonderfully little influence over the paying-out machinery, and the strain on the cable never varied more than 2 cwt. (from 14 to 16). The only inconvenience experienced was in the tanks, where the men on duty ran some risk of falling foul of the cable.

July 9th.—To-day we have changed our course, and it therefore becomes necessary to say why we have done so. In laying a cable it is, above all things, absolutely indispensable to avoid waters frequented by fishermen, lest your cable be fished up and destroyed. The Franco-American Company were naturally desirous of avoiding the Great Bank of Newfoundland. They accordingly decided that their cable should be laid directly across from Brest to the most southerly point of the Newfoundland Bank. This point in the official programme is designated as Point A. At one to-day the *Great Eastern* was pronounced to have reached Point A. From this point she is to sail in a north-westerly direction to St. Pierre, adhering as closely as possible to a previously arranged course, so that she will be kept in moderately deep water all the way, and avoid the various fishing shallows of this neighbourhood. From Point A to St. Pierre is about 400 miles. We have left the deep water behind us, and at present we are in about 800 fathoms. This is a great relief to all; but although we have got rid of perhaps the greatest cause of anxiety to a cable layer, yet we have two great possible sources of evil to encounter—fog and ice;

and news of both arrives daily, viâ Heart's Content, Valentia, and Brest. As yet we have been very lucky indeed, and have been favoured with most beautiful, fine, and clear weather; and although the temperature has been very low for some hours past, we have not seen any ice.

July 10th.—All serene, actually and literally—sea, sky, cable, electricians, engineers, sailors, and directors; 2,250 miles of cable paid out. Very little fog. No ice.

July 11th.—This morning early, when the hours were very small, about 1 a.m., we had a slight experience of another of those dangers which beset a cable. A kink occurred in the coil as it was passing out; the engines were reversed in an instant (obeying a signal transmitted from the tank), but luckily the kink straightened itself before reaching the jockey wheels of the paying-out gear, so that but for the stopping of the ship we should have known nothing of this little accident. Those who were called on deck became acquainted with one of the peculiarities of this foggy climate—the immense rainfall which occasionally occurs. The *Great Eastern* is very badly provided with scuppers, so that water runs off her decks very slowly; and last night the amount of rain on her decks was estimated at from four to six inches. The water came down in a manner wholly tropical, in torrents, in pailfuls, or in any other strong-worded manner you choose to select. After the rain came the fog, thick and all pervading, surrounding the ship with a dense white curtain, and rendering the use of the fog whistles and fog horns constantly necessary. This was annoying (although nothing more than was to be expected), because we had just reached that spot where the *William Cory* (which had preceded us to St. Pierre to lay the shore end there) was to meet us, and we of course feared that the two ships would miss each other. The fog continued as dense as ever all the morning, and whistles and answering whistles continued every few minutes lamentably to destroy the repose of the ship. Had it been fine we ought to have sighted the *Cory* at about two p.m. At a quarter to two the sun began to make some way through the mist, and by a few minutes past that hour the fog showed signs of rising, and when it did rise, judge of our delight when we saw the *William Cory* and the government surveying vessel, the *Gulnare*, some two miles ahead of us, and about half a mile away on our starboard quarter one of the buoys which had been previously placed to mark the channel up which the big ship was to pass. To have navigated the ship in a fog so exactly to her proper position was certainly a most wonderful testimony to Captain Halpin's judgment and skill, although a considerable amount of luck must also be allowed.

July 12th.—This day should certainly be marked with white. We have practically completed the third serviceable Atlantic cable. What remains to be done is so trifling that one may look upon the work as finished, although as yet, owing to the incompleteness of one link of the chain, and that link a very small one, St. Pierre and Brest have no direct telegraphic communication. Since daybreak this morning, or, perhaps, one should rather say since three a.m., for it was quite

impossible for any day fairly to break through so thick a fog, we have not been able to see ten yards away from the ship. The dense mist hemmed us in completely; it whirled up and down the decks in thick white rouleaux, and enveloped the yards and masts in dim obscurity, condensing on the rigging, and falling like a thick rain upon the deck. The fog whistles have kept up a constant discord, and our companion vessels have answered us now and again through the clouds of vapour. All our consort ships have repeatedly made their numbers during the day, with the exception of the *Chiltern*, who parted from us in the fog early yesterday morning, and has not been seen or heard since. At nine this morning we had reached, it was thought, that spot to which the *William Cory* had brought the shore end from St. Pierre; but it was, of course, impossible to discover the buoy which held the end. As there was no probability of the fog clearing off for some hours (the wind being in the south), it was deemed advisable to pay out a good amount of slack, and buoy the cable, and then when the fog cleared it would be a simple matter to pick up both buoys, splice the two ends of cable together, and so complete the line. This idea was carried out, and at nine this morning the *Great Eastern* finished her share in the laying of the Atlantic cable. Since then we have been simply steaming slowly in the fog, and whistling hideously. Those who have been overworked for the last three weeks have gone to sleep till the fog clears, and those who have not been overworked, or those whose natures never tire, have taken to various amusements. As I write (ten p.m.), the noise of fiddles and wry-necked fifes salutes my ear at intervals, and from the depths below there arises a chorus in which the virtues of one John Barleycorn are much extolled.

July 13th.—“What remains to be done is so trifling that one may look upon the work as finished,” said the chronicler of yesterday’s events. We shall now detail what this incomplete ‘trifle’ turned out to be. Last night about eleven the fog cleared off, and the moon and stars appeared clear and beautiful, and to-day the sun arose on as bright a morn as one can well imagine. By seven a.m. both the buoys were sighted, the one placed by ourselves and the one which held the shore end, and although the latter was let go in a fog, the two were not more than one mile apart. The buoy which held the shore-end was first picked up with perfect success by the *Chiltern*, and a splice made with an end of cable passed from the *Great Eastern*. The *William Cory* then proceeded to pick up the buoy which held the Atlantic end, intending to make a splice also with an end of cable passed from the big ship, and so make the first section of the Franco-American cable, 2,550 miles in length, complete. The *Great Eastern* had steamed slowly towards her, and was preparing to pass the end to her, when she signalled that in picking up the buoy the pin of one of the shackles of the buoy rope had broken, and she had lost the cable. It seemed that we were destined during this voyage to see every phase of cable laying. We had had faults and kinks and storms, and now with our goal in sight grappling had become necessary. We could not say how soon fogs might arise again; no time was to be lost; so,

with less than an hour's delay, Sir Samuel Canning and staff were safely on board the *Cory*, and grappling commenced about eleven a.m., the ship going to windward of the line of cable, and drifting slowly across it. By half-past four p.m., after three or four fruitless attempts, she signalled that she had the cable at her bows. Considering that the depth here was eighty fathoms, this certainly was a most rapid piece of grappling. By eleven p.m. the recovered end had been spliced to the shore end, and Brest and St. Pierre were placed in electric communication.

July 14th.—Very little remains to be said. The *Great Eastern* anchored last night between the Islands of St. Pierre and Miquelon, and this morning there was a general clearing out of all those who are engaged in laying the next section of the cable, from St. Pierre to Boston. The section completed has been tested, and found far better than the terms of the contract would oblige it to be; congratulations have been sent to and received from the Emperor; the inhabitants of St. Pierre, including the Governor, have been off to see the ship; and everybody connected with the enterprise is in the best of tempers.

July 15th.—To-day at seven p.m. the *Great Eastern* sailed for England, and the *William Cory* began to lay the shore-end of the cable from St. Pierre to Boston.

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## THE ARGENTINE REPUBLIC.

(Continued from page 428.)

### PROVINCES OF ENTRE RIOS, CORRIENTES, AND SANTA FE.

THESE provinces may be considered as maritime for they are surrounded by water and approachable by vessels from over sea.

Next to Buenos Ayres, the most flourishing province arising from its richness of soil was that of Entre Rios. It is bounded by the two great arteries of the cuenca of the Plata—the Parana and Uruguay. So that it possesses the utmost facilities for the exportation of its riches, as well as for the importation of all that it requires.

Corrientes, which is figuratively called its flower, is formed of a more marshy soil, is furrowed by cracks, and is fertile of pasture, and therefore favourable to rearing cattle. Like the former it is nearly bounded on all sides by the same powerful rivers. The two provinces united by the ancient missions constitute one vast peninsula, the superficial extent of which is not less than 15,000 leagues, and yet it scarcely contains 250,000 inhabitants, although capable of maintaining some millions. It is true that its population increases in a wonderful manner from incessant European emigration, and it is confidently asserted that that of Entre Rios, which is more contiguous to Buenos Ayres, has doubled its population in the course of two generations.

The province of Santa Fe is no less productive. Much of the same character as that of Entre Rios opposite to it. She is engaged in the same pursuits of industry, which is rearing of cattle. She is also the most frequented of the confederation, because the Parana places her in communication with vessels from over sea as well as having by old as well as new routes complete intercourse with the interior.

Rosario is one of the most important towns of Santa Fe in consequence of its capacious port, and at present has eight to ten thousand inhabitants. Seated on the right bank of the Parana, and accessible to all vessels that can pass Martin Garcia island, she was frequently, indeed, crowded by vessels from all countries during the absence of Buenos Ayres from the confederation, so much so that in 1854, when her custom house was first established, vessels brought to it merchandize from Europe. The mercantile imports of 1862 were represented by 5,200,000 dollars, her exports surpassing this sum by 200,000 dollars.

The great progress of these three provinces is dated from the fall of the Dictator Rosas in 1852; or perhaps from the proclamation of the free navigation of the tributaries of the Plata by General Urquiza, the then chief of the confederation, who opened these great rivers to all countries, and whose international treaties were signed on the 10th of July, by England and France.

The first State whose representative signed was the republic of Paraguay in 1853 (March), as the most interested in the river navigation. The Argentine provinces soon followed, if we except Buenos Ayres, who protested against these contracts in September of the same year, no doubt because she had seen the monopoly of the interior commerce of the country slip away from her. And in fact, this took place while she remained out of the confederation, for the business of the port was entirely transferred to Rosario, which received over sea vessels of all countries discharging their cargoes to smaller craft which conveyed them to the interior provinces, but which commerce decreased from the time that Buenos Ayres was at length incorporated with the confederation.

European emigration resorted much to these provinces, and especially to Santa Fe, where the colonists were well received and protected. This province, in 1865, had eleven colonies established with which to carry on government: La Esperanza with 1,627 individuals, San Jerónimo with 800, San Carlos with 735, and Helvetia with 167.

The province of Entre Rios at the same time had the colony of San Jose with 2,280 individuals, and that of Villa Urquiza with 355.

Lines of steamers which start from Buenos Ayres on certain days make the tour of all the principal towns of Entre Rios and Corrientes, the ports of which are on the Parana as well as those on the Uruguay.

#### THE REPUBLIC OF PARAGUAY,

Although much separated from the ocean, and almost lost in the middle of South America, still deserves a consideration, for her rivers

are navigable, and her history is worthy of note, for she has been the cradle of the Spanish American population in the cuenca of La Plata.

*Limits.*—Paraguay is bounded on the south and east by the Parana; on the west by the poetical Paraguay, and on the north by the Brazilian territory, so that she is made into a Peninsula with an area of some 11,113 leagues of surface. Again, by adding to this the territory of the missions of the Gran Chaco, which for some time has been throwing the apple of discord between Argentines, Paraguayans, and Brazilians, its superficial extent might be estimated at more than 29,000 square leagues.

The surface of the country is of an undulating nature, so that accidental heights are very rare, the principal of these not being more than 590 feet high. The nature of the rock in this country is sandstone, and the soil is mostly composed of sand and marl. Being intersected by numerous rivers and other streams, this land is generally well watered, and some land is also under water owing to the want of slopes and sudden changes of level that would admit of the water running off to join the various rivers.

The soil is most productive, and many European fruits are produced without any labour. With a prolific supply of green food the rearing of flocks and all kinds of cattle becomes easy, and garden stuffs as well as fruit are abundant. Cotton and tobacco, as well as all intertropical fruits, are also produced. But the most common article of commerce among these is the herb called the Paraguay tea, which is a spontaneous production of the soil, the use of which has been established by the Spaniards among the Indians.

*History.\**—The first European who trod the ground of Paraguay was Sebastian Cabot, who after exploring part of the Uruguay, built a fortress on its left bank, then proceeded up the Parana and built another fort, and following the river upwards, entered by it into Paraguay, arriving according to Senor de Azara in lat.  $25\frac{1}{2}^{\circ}$ , or rather close to Villeta, where he anchored. Here he encountered the Paraguay natives, and then left the place in 1527, returning to his establishments to await the assistance for which he had asked of Spain, so that he might extend the conquest.

During this interval in the beginning of 1527, the Portuguese pilot, Diego Garcia, had arrived at the river of Solis, near to Moguer, who had started from Finisterre on the 15th of August, 1526, with an expedition destined for the conquest of this territory.† He delivered

\* We have before us the History of Paraguay in MS. by Captain Don F. de Azara, who resided above nine years in the country, and wrote it for the Cabildo of Ascension in 1793. We have also consulted the posthumous work of the same author, printed at Madrid in 1827, and that published in Paris, by Alfred Demersay and Alfred de Brossard.

† This expedition, according to Herrera, consisted of three ships besides a small craft in pieces. They anchored in the port of Palomas at Cape Santa Maria (probably the present port of Paloma), and all having arrived, a vessel which awaited them started for the Piedras islands, sixty leagues from Cape Santa

his credentials to Cabot; but Cabot, who reckoned on a larger force, did not respect him, and at length Garcia was added to his force with his men, and Cabot, tired of waiting for the assistance he had demanded, returned to Spain in 1530.

To this first attempt at colonization followed the expedition of Mendoza, which, although fatal to him, had better success than the former, since the persons forming it settled eventually in Paraguay, forming the city of Ascension, and fixing the foundations of the great colony, which had to be changed in his time in the public acts which settled the limits of the cuenca of the Plata.

Ayolas the second, of Mendoza, began in 1535 to lay out the foundations. He constructed the fort of Corpus Christi near Caracanal. He proceeded up as far as Angostura, where he encountered the Indians, who endeavoured to stop him with his canoes: and afterwards on the 15th of August, 1536, he had a pitched battle with the riverine population near Villeta, whom he defeated, and proceeded to establish himself higher up in a fortress, which he named Ascension, in celebration of his victory. He continued afterwards exploring Paraguay, and landed at a place which he called the port of Candelaria, near a height which he named San Fernando. From here he had the temerity to cross the Gran Chaco, attended by a handful of daring fellows and some Indians, and arrived at the foot of the Andes. But on his return to Candelaria, where he expected to find his vessels which he had left under the command of D. M. de Irala for its protection, he found that his chief with his party had been slain by the Indians, and one person only left from whom he learnt the fact.

The colony chose Irala for chief, a man specially gifted for the peculiar circumstances in which he was placed. Enlarging the town of Ascension, he divided it into districts, proclaimed his ordinances, and preserved order among the colonists, obtaining at the same time the friendship of many neighbouring tribes, particularly that named Guaranía.

María (no doubt those of San Gabriel, Lopez, and Farallon). They then made for an islet distinguished by three hills (that of Flores), where they found abundance of seals. They anchored at these Piedras isles and put together a brigantine which they had in pieces, in which vessel they proceeded up the river until they met with the vessels of Gaboto. They continued on with the two brigantines and sixty men for the Parana, until they found a fort, that of Gaboto, distant eighty leagues from where they had put the brigantine together. Diego Garcia was for disputing possession of the country with Gaboto, but at length joined him. Herrera Decado.

It is very probable that these Piedras islands were named thus by Solís, and where he left his two largest vessels, continuing up the river in the smallest. Garcia on making for these islands from Cape St. Mary seems to have already known them, and their name, and ignorant that Cabot had named the larger one San Gabriel. Therefore this proves that Solís on exploring the river of his name, anchored off these isles as the Piedras isles, that he left two of his caravels there, and with the other went up the river to Martin Garcia, meeting his death on the coast off them perhaps close to the Limetas or Tigres Stream.

García would perhaps have on board some seamen, or perhaps a pilot, who had been with Solís in discovering the river of which we are treating.



We shall not continue our narrative of the proceedings which followed the enlargement of the colony as it belongs to history, and we content ourselves with stating that the real colonizer of Paraguay was Irala, and that he as well as Cabot and Garay, are the three persons who figure most conspicuously in the picture of events in the cuenca of the Plata.

In modern times, or perhaps from the formation in 1810, of the provinces into a vice-royalty, Paraguay alone remained excluded: but far from joining the rest she formed herself into an independent State, and repelled the attacks of Buenos Ayres, which desired to bring her into the union by force of arms, and obliged the latter to recognize her independence on the 12th of October, 1811. She governed herself by Council, the soul of which was the sagacious Dr. Don J. G. de Francia, a creole and illustrious man, who formed the republic on the 1st of October, 1813. He also continued to govern the State indirectly, and on the 3rd of May, 1814, in the assembly as Supreme Chief, and on the 3rd of May, 1817, as perpetual Dictator, a charge which he fulfilled until his death on the 29th of September, 1840.

It is said that Dr. Francia ruled with the most capricious despotism, isolating from the frontier provinces, victims occasionally of civil war. But it is certain that during his government it did not suffer by those intestine wars which devastated the other republics, nor was plunder or assassination known, thanks to the good policy which knew how they should be avoided. The numerous families which took refuge in its capital from other afflicted provinces, found there safety and peace. Along with agriculture the Paraguayans were made a warlike people: and elementary instruction was extended to the very confines of the republic. He knew how to cultivate the principle of authority in the people as well as the love of country; and profiting by their good qualities of obedience and order, in which they had been instructed by the Jesuits, he made citizens of them superior in mind to their neighbours, and enthusiastic of independence, qualities which have enabled them to resist as they have done for three years the combined attacks from Argentines and Brazilians. In fact, whatever may have been the reproaches for cruelty and despotism, and immorality levelled against him, his government has been profitable to Paraguay. The population has progressed, agriculture and commerce flourished, every branch of public business well organized, all of which have conferred on Dr. Francia an imperishable monument of fame. In fact, and it is not the least title to that fame, in the midst of revolutions he taught his people the difficult art of obedience, as stated by M. de Brossard in his work, published in 1850 in Paris.

Dr. Francia was succeeded in the management of the Republic by Don Carlos A. Lopez, the first who opened Paraguay to the stranger, and initiated a nearly opposite policy. He built the arsenal, improved the army and navy; encouraged engineers of all kinds to come to him, and gave considerable impulse to commerce and agriculture, leaving at his death, in September, 1862, eleven war steamers, a respectable army, and a good civil and military organization. He

was succeeded in his command by his son Don Francisco Solano Lopez, the present president. The greatest eulogism that can be paid to him is to record the steady determination with which he defends the integrity and independence of his native country.

To Paraguay is attributed the honour of being the power which signed the international treaties in March, 1853, securing the free navigation of the rivers, while Buenos Ayres protested so fortunately near her end, when she saw that she was left by herself, and that her commerce had left her for Rosario.

*Territory.*—That of the republic including the land of the missionaries is estimated at 12,874 leagues square of surface, and the area of the Gran Chaco, which is unsettled between the Argentines, Bolivians, and Paraguayans, amounts to 16,537 leagues. The centres of population are scant, but the country is very populous, the cultivated part amounting to 2,500 leagues.

The country is subdivided into twenty-five departments, and in 1861, according to some authorities, contained 1,350,000 inhabitants, so that in proportion it contains a much larger population than the Argentine republic. At the end of the last century it scarcely had 107,480 souls, and as yet foreigners form a very small portion of it.

For some years the country has been making great progress. It has a railway which in 1864 was fifty miles in length, and several others uniting with Villarica the capital, and it has also an arsenal and a factory for the construction of vessels, and is well supplied with English engineers. In 1865, she possessed three brigantines, twenty-one steamers, fifteen gunboats, some armoured vessels, and besides some floating batteries of eighty-pounder cannon to resist the Brazilians and Argentines, which for three years had been carrying on a blockade. The army amounts to 60,000 men.

Ascension is the capital of the republic, and for a long time was that of the Spaniards when they had the country. The principal hold in it was a fortress constructed by Ayolas in 1536, and improved by Irala in 1539. But the country has not made the great progress which is observed in other States of the Plata, effected by the valiant supplies of emigrants from the Iberian peninsula in company with Mendoza, Cabeza de Vaca, and other towns. In 1851, the population did not exceed 12,000, while in 1790 it had reached 7,088 inhabitants. It is seated on the left bank of the Paraguay in 25° 16' 7" latitude, on a ridge of land about fifty feet high, and 190 miles from the confluence of the Paraguay and Parana.

The port of Assumption is very good and capacious, and is only molested by northerly winds, but which only are strong. The anchorage is in four to six fathoms off the mole and the residence of the captain of the port. The holding ground is stiff clay, and the vessels anchor both by head and stern in the direction of the current.

The port is protected by several well found forts, among which the fortress of Humaita is considered as the key of the river, situated about six leagues from the mouth of the Paraguay at a narrow and sudden turn, so that its fire commands the river for a considerable

distance, and would prove serious to a vessel intending to force the passage. The fortress of Humaita, as much from its power as from its position, is considered impregnable, and its resistance for three years of the combined Brazilian and Argentine forces appears to confirm it.

*Commerce.*—In 1863, the entry of arrivals and departures at the capital amounted to 412, carrying 16,650 tons, and in 1859, its returns exceeded 3,552,360 dollars.

In 1860, it possessed fifteen wooden steamers, built in the country, that traded with Buenos Ayres and Monte Video, and some lesser towns, ascending the river as high as Matta Grosso.

*National Flag.*—The national flag is similar to that of the low countries. It is composed of three horizontal stripes, the upper one red, the middle white, and the lower blue. In the centre or middle of the white stripe is a small shield, round which appear the words *Republica del Paraguay*, and in the centre a crouching leopard, in the shoulder of which is a lance, and on its end a red cap with the motto *Paz y Justicia*.

*Gran Chaco.*—This great territory of the ancient vice-royalty was an unknown desert during the Spanish dominion of the country. Limited on the east by the Paraguay, it is also confined on the north by the Bolivia, on the west by the provinces which extend to the foot of the Cordillera, and to the south by the province of Santa Fe. Its form is triangular, and it is 260 leagues from north to south, and 120 from east to west in its widest part.

In the Indian language it is called Chacu or Chaco, signifying a junta, or company: resulting from its having collected together various Indian nations of the country, who were determined never to submit either to the Incas or the Spaniards. The ground is in general level, nearly everywhere being thickly wooded and very marshy, especially during the rainy season from November to April. At this season, the rivers overflow their banks, forming lagoons, some of which are permanent, while others soon evaporate. These parts are intersected by the rivers Salado, Bermejo, and Pilcomayo, besides some smaller.

The wild tribes of natives who occupy this extensive country are most numerous, and the Spaniards have in vain endeavoured to civilize them by missions. Favoured by a mild climate, they lead a wandering life, as they find everywhere abundance of fishing and hunting, as well as wild fruits of spontaneous production.

At present they are working in earnest, in order to attract settlers, and latterly they have opened a good road across their country to give access to them, while the attempts to navigate the principal streams continue as usual.

The possession of this vast territory, which there can be no doubt will one day be the most fertile of the country, is often the cause of discord between Paraguayans and Argentines. Its territory is divisible between Bolivia, the Argentine republic, and Paraguay. The latter republic considers itself entitled to an extent of 16,000 square leagues as inheriting the ancient monopoly. The number of its inhabitants is quite unknown.

## COALS USED IN STEAMERS. No. 3.

*(Continued from page 407.)*

It is some satisfaction to find that since my letter appeared in your Magazine, the great importance which I have attributed to the coal question as offering to the public economist a subject of tempting promise, has been publicly acknowledged in the House of Commons; and that a hope is entertained, as was therein stated, of saving from mixing coal alone, about £30,000 annually! That such is possible cannot be doubted, but from what has been already said as to the nature of coal, and from what I have further to communicate, the hoped-for saving must depend mainly for success upon the *manner in which* the mixing of coal is proportioned; for it can only be done efficaciously when the chemical properties of the coals so mixed are known, up to an easy approximation,—such as I am about to describe. I will venture further, to express a deliberate belief that when we take into consideration the improvements which are possible, viz. :—

1. In mixing of coal.
2. In the careful alteration of grates under the considerations pointed out in my last letter, as referring to Circular 29.
3. In a better system of stoking.
4. In a better system of treating brine in Marine boilers,

a saving of a very large per centage (on the gross cost of coal supplied the Royal Navy as suggested in the House of Commons) may ultimately be effected. Indeed the fourth item mentioned is one of which little is actually known, and I have some startling results of investigation to lay before your readers, showing, in this branch of the subject alone a hidden cause of great waste. (With your permission all I assert shall be demonstrated.)

I am between two fires, and thus apologise for alluding at all to myself in these letters—on the one hand I should be accused of having hitherto disloyally suppressed facts of such magnitude as the saving of many thousands per annum to the Government of the country; and, on the other hand, I might be suspected of casting reflections on former officers of high position. I beg to explain that Naval discipline alone prevented my conclusions and suggestions from reaching the Lords Commissioners of a previous Administration. There is a well known portal through which, by Naval etiquette, all communications intended for the Admiralty Board from officers under the pennant on active duty must pass—and should it happen that the *porter* be unwilling to transmit a document, either through ignorance (when the subject is one with which he is not conversant), or from personal motives (if such ever prevail), he has the power of returning it to the writer even though it suggest a direct saving of 20 per cent. per annum on £275,000, or a public saving of some £50,000 a year! This happened to me nearly

**Erratum.**—At page 402 line 1, for “expences” read “experiences.”

three years since. In October, 1866, I was loyally offering the opinion, not merely of myself but of a number of officers who had gone with me into the details of the subject. The rejection of this paper has during the past three years cost the nation many tens of thousands of pounds sterling! for the sheer waste to which I was anxious to call attention has been going on unchecked through that period. *No Board of Admiralty knowing the state of matters would have neglected it*, and a saving must have at least commenced but for that suppression.

Can you, Sir, be surprised then at my remark that "scientific points are altogether ignored by most government authorities?"—allow me to make one correction, I should have said "many *subordinate* authorities;" because my experience of the honourable Board themselves, when condescending to personal intercourse on subjects connected with scientific details, has on all occasions deeply and gratefully impressed me, both as to their earnestness and their direct encouragement of my endeavours.

However, strong convictions and much subsequent experience, together with the Chief Secretary's circular, which in the past winter appealed to the patriotism of Naval officers, inducing them as a matter of duty to communicate suggestions as to possible economy in their several departments, caused me, as Principal Instructor of Naval Engineer officers, to offer (as mentioned in my first letter) on the 27th January last, my willing services to the honourable Board of Admiralty, who had not previously heard of my labours in detecting various sources of waste in the Navy (coal among them). Their Lordships on the 8th February, I say, *thanked me*, but just then they felt "that they could not avail themselves of my services in this matter."

It was not till 24th April that the two circulars 29 and 30 on coal, to which I have alluded, were issued, and seeing therein the great additional necessity for some acknowledged system of examination of coal (and which system I had already perfected) it would have been wrong to refuse or hesitate to furnish the *Nautical Magazine* with some requested general particulars of the results of my long investigations on the whole coal question.

I only hope, Sir, I am not exceeding the limits both as to space and matter which you so kindly placed at my discretion. You doubtless recognise in these letters a subject affecting not merely Her Majesty's Naval service, both afloat and on shore, but also the interests of the vast mercantile steam navy of this great commercial country, among whose members the *Nautical* is so widely read and justly appreciated; and I am only devoting the first of my unfortunate compulsory leisure in contributing towards a success which is I believe attainable by no mere departmental vigilance, but which can only result from the course I am taking, and which embodies already the accumulated experiences of a large number of officers through eleven years of special attention to the subject, or shall we wait through a still more *wasteful future of many stagnant years* of "reports" and hoped for "co-operations of the commanding officers of ships and of the engineers generally" (for thus cautiously runs circular 29), until the period shall

arrive at which such reports are expected to admit of condensation into an efficient, practical, general system in the Navy?

Will the advent of that happy period be hastened or retarded by an unsystematic mixing of coals of unknown chemical peculiarities and properties, and by increase in the variety of forms of grate which are to meet the exigencies of such chanceful mixtures, and all this to be deepened in intensity by the effects of want of uniformity as to facilities on shipboard for regulating draught? All this, Sir, must prove an anxiety—will determine our destiny as a great naval power—affect our aspect in the eyes of naval nations—and lead to a final convulsive and disastrous use of the *saw* of retrenchment, in sacrificing whole branches, *whole limbs* of the tree of prosperity, in place of what *now* would, in comparison, be a mere *penknife* pruning of *twigs and buds*, converting the whole nourishment of the well trenched land into permanent arms of strength, beauty, and fruitfulness—all this, I say, lies in our very pathway, UNLESS I, having deeply studied the subject *under advantages*, do my best to avert such costly delay and prevent in the interim of confusion an unnecessary and gigantic sacrifice of public money.

It would, Sir, be impertinent in any one situated otherwise than I am (and both his taste and judgment would be open to question) to touch these matters in public detail. But the peculiar and special nature of my office still imposes its moral obligations upon me, for it originated in a public sense on the part of Government of an absolute inefficiency in a class of very responsible officers (many of whom had been suddenly brought into the service) from their want of that teaching in matters of professional science, which want it has been repeatedly and officially certified, has been notwithstanding the great exigencies of my position considerably reduced, and to the best of my humble powers.

If then, Sir, there exists within me a moral yearning to save the best and perhaps most useful of my work from a threatened oblivion, or from a possible claim by others of any little merit which might pertain to it, and all this because of evident *misapprehension somewhere* as to what really may prove to have been the national value of that work,—who so justly entitled, who so consistently free as myself to write on the important questions raised, and to be raised in these letters?

This explanation of circumstances connected with the *motives under which* I take in hand so great a subject (and perhaps I am able to deal fairly with it) will release me from trammels which cannot now affect one whose open treatment of a question is the consequence of moral, social, and (it would appear to be a remnant of) official duty.

Some of the readers of your Magazine for August may feel mentally inclined to address me thus:—

“It is all very well to know particulars of your coal, but now tell me, how can even the discrepancies you refer to affect the use of it in steamers?—Did you ever know an instance in which really any engineer could not on receiving a coal form a pretty correct estimate of its composition—or enough so for his purpose?”

In reply to such an inquirer, I would, on the other hand, ask if he had never met with an instance wherein coal on its being actually consumed was found to possess dangerous or inconvenient properties of which he had no previous suspicion?—If not, the following incident (not by any means a solitary one) is commended for consideration.

In May last a gun-boat put into a royal dockyard in a disabled state, as regards steam, because of the *complete destruction of her fire-bars after eight hours' steaming*. It happened very unfortunately that the accident occurred just at a time when the authorities had made a thorough change in the selection and supply of coals, and the gun-boat had received a portion of that which came under what is known as the "new regulation." After the usual service condemnation of the fused bars, I was kindly allowed to examine them in my late lecture room at the dockyard. Seven or eight bars were so entirely destroyed that they formed a fused mass varying in thickness from  $\frac{1}{4}$  inch to  $2\frac{1}{2}$ . It happened, however, fortunately for the officer in charge, that he had attended my course of lectures on waste of coals, and had acquired my method of analysis, but I suppose having at a home station no discretion as to selection of coal to suit his furnace, he passively, as was natural, received what was sent him. But his first act on landing was to make an analysis, and he came to my room for the purpose;—his results were as follow:—

Sample.	Sp. Gr.	Bitumen, etc.	Carbon.	Ash.
No. 1.	1.390	11.60	86	2.40
„ 2.	1.648	16.90	53.84	29.23
„ 3.	..	..	..	49.50

Although I had long officially known the officer referred to, and was aware of his ability and habitual caution, I could scarcely believe his figures, and accordingly proceeded thus (perhaps, Sir, you will kindly permit of a little detail):—A mass of about two pounds weight was broken into large fragments, and four pieces thereof were selected for analysis. The coal appeared to be a beautiful sample of Welsh, the fracture was to all appearance free from earthy matter, or pyrites; indeed, on showing a piece of the mass a few days afterwards to an experienced engineer who had just arrived from a long voyage, he pronounced it to be a very fine strong coal, "almost," he said, "too good for our purpose." Now so far is this from being an imputation on that officer's judgment, that it need only be said, I had at first a similar impression. But to proceed—on examining the four samples, in the appearances of each of which there was nothing remarkable, I found that—

No. 1	had a specific gravity of .	.	.	.	1.789
„ 2	„	„	.	.	1.800
„ 3	„	„	.	.	1.626
„ 4	„	„	.	.	1.750

One cannot consider specific gravity as a reliable test of a coal except in some particular cases. Welsh coal has always a greater density than that found higher up in the carboniferous series, but in this instance

the specific gravity was evidently high for soundness of quality. On special analysis of No. 3, it gave the following:—

Sample.	Sp. Gravity.	Bit. Matter.	Coke.	Carbon.	Ash.	Colour of ash.
No. 3	1·626	18·5	18·5	57·1	24·45	Deep red.

It did not cake at all—gave no smoke—no deposit of sulphur on platinum crucible—did not swell or alter.

Now, Sir, as an illustration of the completeness of my mode of examination let any one of your readers say what more an engineer can need as to knowledge of a coal; and *why he should not on all occasions know as much?* The whole careful operation did not occupy an hour. Such an analysis at once furnished accurate conclusions as to practical value. The coal was in itself a strong and fierce coal because it did not cake at all nor swell up so as to obstruct the draught through the bars. (Thus far it resembled the finest coal we have in Great Britain, viz., Nixon's.) Its large amount of ash, however, being nearly a quarter of the whole weight of the coal, was sufficient to account for the destruction of the fire-bars, and especially for the colour of the ash, for sulphur was evidently present, and the officer's analysis was fully corroborated. And further, on placing the ash in a test tube and passing a magnet above it when the tube was in a horizontal position the whole ash rushed up to the top of the tube, thereby indicating great absence of earthy matter, and a very dangerous quality in the sample, a quality not detectable by the closest visual inspection beforehand, viz., the undoubted presence of iron, which generally when present in coal is in the form of sulphide, and such coal is subject to disintegration and disengagement of gases, should moisture reach it. I next tried sample No. 2 for ash, and actually found as much as 34 per cent. of it of the same nature as that of No. 3.

I next sought for sulphur in particular. We know well that if a roll of brimstone be held against a bar of white-hot iron the metal and sulphur unite and form an artificial sulphide or sulphuret of iron. In like manner, therefore, of course the sulphur set free from a sulphide of iron in the coal at a white heat would also fuse the metal and combine with the iron of the bars to their destruction, as in the case of the *Magnet's* grate. To demonstrate this I dissolved a portion of the fused bars in aqua regia, when the expected lumps of sulphur appeared, and *this in such quantity as could only have come from the fuel.* So that no doubt can exist as to the cause of the *Magnet's* having been disabled through the quality of the coal supplied in Her Majesty's service.

It may possibly be suggested as a defect in argument, that my observations were made chiefly upon one mass of coal, but the engineer officer purposely selected for me a lump which appeared to represent several of the qualities of the supply, of which the larger portions of that lump were characteristic of the *general* quality of the whole stock on board. The fusing of the bars testifies to the great preponderance of the bad over the good. Well, Sir, *why should not the same accident again happen to Her Majesty's ships?*

My object is to shew that unless precautions are taken, the



same may happen again and again with damage to the characters of officers, and a waste of time and public money, besides other vexations of which naval officers need no reminder. It may happen either in using Welsh coal or mixed coal. I have no interest in the matter, beyond a desire to record certain facts for public use. Why should I wish to exaggerate? Here is a convincing proof, that if we merely take the name and reputation of a coal as a criterion of its value, absolute inconvenience, waste, and damage may beset this really simple question, and may finally lead to indomitable and endless perplexity.

In my last I shewed the *Magnet's* samples of "Nantmelyn Merthyr" coal with the results of analyses; I shewed also my deductions therefrom, at the Admiralty, as also indeed the ash in the tube, with its action on the magnet. I shewed the very pieces of coal themselves from which the analyses had been made, and I assume that my facts are therefore unassailable. *I have the samples yet by me, ready if called upon for further public demonstration.*

But, Sir, your readers will be thinking of the apparent *culpability* of a department which ought to be accountable for the selection and supply of such coal to ships of war. Happily I can speak for these, to me, total strangers: from their straightforward courtesy to me at the Admiralty I will assert in their favour, that with all the adverse circumstances above related, and notwithstanding the sarcasm still heard as to "cheap coal" and "new regulations," which have abounded in the service,—the store purchasing department, whatever that may be, have (quite irrespective of cheapness equal to a saving of some twenty-five per cent. in prime cost) *made a wise selection in choosing "Nantmelyn Merthyr,"* for supply in H. M. steamers.

I state this on safe grounds, for *first* it will be seen from the engineer of the *Magnet's* analysis No. 1, that, taking a fair sample of the quality which I find immensely preponderates in the Nantmelyn, it contained all the qualifications of a sound and excellent coal; its amount of bitumen was small; its amount of ash quite at the average of the best and justly famed "Nixon;"—and secondly, my own analysis of an independent specimen, *not* procured by the engineer referred to, but coming direct from harbour-store, gave as under:—

Sp. G.	Bitumen.	Coke.	Carbon.	Ash.	Colour of ash.
1.320	9.20	90.8	87.36	3.64	Greyish white

with scarcely any visible smoke (none but what even the *most ordinary* care would consume), no deposit of sulphur on platinum crucible, *no iron pyrites*,—and therefore no liability to give off inconvenient gases, etc., if moistened.

Now, Sir, I think this one examination of a coal is enough to give your readers (nay, it is respectfully offered to the Honourable Board of Admiralty), what is actually in the power of unprejudiced authorities to effect in the way of economy, and the convenience of mixing various coals together, not because of the general characters of a coal, but *under a proper system which appeals to and works with acknowledged facts, readily detectable.*

I may remark that Nantmelyn in its qualities closely resembles the

only kind of Labuan coal which I have had the opportunity of examining (from H.M.S. *Basilisk*). Yet the Labuan is inferior, as containing some iron pyrites, and *in appearance the two coals are widely different*. I have had many opportunities of examining foreign coals, such as Russian, Australian, Japanese, Vancouver Island, Nova Scotian, and others. I have records of their analyses.

This, Sir, we have seen, that not knowing the actual condition of every seam of coal, and of every part of every seam of coal (whether as free from, or as abounding in occasional and accidental deteriorations), can lead to accidents serious enough in time of peace and leisure, but not to be thought of in war time.

In trying to reconcile facts so as to account for the damage to the *Magnet's* bars, I think it may be thus accounted for:—I have shewn that the density of Nantinelyn varies from 1·320 to 1·800 (a large range). I think it most likely, therefore, that in storing and moving the coal from large heaps in which the heavier portions, containing the sulphur and iron, rolled down the sides of the heap with greater velocity, accidentally accumulating thus at the lowest level, the denser portions were unintentionally and unwittingly supplied in quantity to one vessel, having the effect described.

I would offer every apology for referring to any of Her Majesty's ships by name, but it can in this instance offend no one. If the accident raised a temporary feeling of distrust in the service, I trust this will allay it:—it at least caused one highly distinguished captain of a large ironclad, on witnessing in my late lecture-room the rapidity and simplicity of the manipulation of my method, to send his engineer to me for special instruction in the said manipulation, before committing his powerful and costly ship to the dangers of the sea—(and coal)! The manipulation, as I have arranged it, is so simple that one who is no chemist will find no difficulty therein.

I now turn to another source of waste in Her Majesty's ships. I mentioned suggestively the loss of coal which occurs through bad stoking. Every engineer officer knows that certain individual stokers will make *one* ton of coal evaporate as much water as others will *two*: consequently all great shipping firms, such as the Cunard line, the West India Mail Company, the Peninsula and Oriental Company, etc., find it profitable to employ only picked men as stokers. Surely this is worth the immediate attention of the navy. That the general run of stokers are notoriously incompetent is an ugly fact, only to be explained by the inbred contempt that some officers have for scientific principles. (I am sorry to assert this, but it is serious.) And what do old seamen stokers care about the laws of nature? Coals are to be put into the furnace; not a thought have they beyond this, not a care:—and, so long as the value of these men continues to be estimated from the work they perform,—“as hard working fellows”—and from nothing else, so long will grievous waste endure. So long as some men whose intelligence limits their *work of the shovel to the needs of the furnace*, and by whom both labour and coals are spared, do so at the hazard of being called “lazy rascals,” so long will there be mere

*coal-heaving* on the one hand and discouragement on the other. Engineers complain of it; the odds are against principles. What we want is at least one leading stoker in each watch, *certificated* as to general knowledge of the laws of combustion of fuel. Of course all junior engineers need the same, in addition to a knowledge of coal analysis. When these become a part of the service duties, the realization of the hopes of well wishers to the navy will be nearer completion. It is no trifle to tamper ignorantly with efficiency and economy by heaping on fuel *where not wanted*, and thereby sending up the smoke-shaft (and indeed often burning on the top of it) what ought to be used in heating the water in the boiler. The same applies to Government factory chimnies. *I could give instances,—and if pressed will do so.* Without all the precaution and care which science offers, labour and waste in all directions attend the burning of coal as fuel: it is only when we lift the veil that we can see the true features of the case. I have assumed the task and may raise it higher than has hitherto been done. It is only by this means that their Lordships can be made aware of the drawbacks which are likely to hinder the working of their excellent Circular 29, as regards draught, etc.

There is another source of great waste of coal to which I have already referred;—viz., the general treatment of boiler water in marine engines. Hence arises another crying need for closer appreciation of principles. Not at once to explain circumstances under which this opinion was formed would be a direct implication on the ability and intelligence of Royal Naval Chief Engineers:—but it was precisely that “intelligence,” and the so well-known zeal of this class of officers, which first drew my special attention to the all-important subject of boiler water.

They asked me, as their official Lecturer, for information thereupon and assistance therein:—of course in reply every step of the question was carefully demonstrated, until an almost enthusiastic concurrence on their part caused their great experience of facts and my humble appreciations of theory to blend in such perfect harmony, as unitedly to drag forth from the musty shelves of custom and blind practice, such truths as I am now about to occupy a few moments in describing. The subject admits of distinct divisions; to name them at the off set might induce a suspicion of an attempt to split professional hairs; whereas, waste upon a large scale really lies hidden under cover of (and really as sanctioned by) official misapprehensions. I say it with all deference. First then as to the density of sea water.

The Admiralty printed instructions to Naval engineers are as follow:—

During every watch, and even more frequently if necessary, the engineer is to examine the water in each of the boilers to ascertain its saltness.

He will be guided in his judgment by the indications of the *Thermometer* \* and *Hydrometer* supplied by the establishment for that

\* The italics are my own.

*purpose*, observing that if the Thermometer when immersed in the brine drawn from the boiler should indicate a higher boiling point than 215° Fahrenheit in the atmosphere, or should be at a higher degree than two to three times that of sea water there is danger of incrustation.

1. It is therefore, from this, evidently the *duty* of an engineer to observe the *boiling point* of brine:—but on this I have to remark, that neither the instruments supplied nor the mode of operating can possibly give a safe approximation to a boiling point:—and therefore *the officer in charge never knows therefrom the actual state of the brine in the boiler!*

2. It also appears to be the duty of an engineer to observe the density of the brine by means of the *hydrometer* supplied to him:—but on this I also remark that neither the instrument supplied nor the mode of using it can possibly under present circumstances give a safe approximation to the density; and therefore the officer in charge “never knows therefrom the actual state of the brine in the boiler.”

These, Sir, are startling assertions, and I am sorry to have occasion to state them publicly, because disbelief in them or ignorance of their truthfulness, introduces so much perplexity and error, that great waste of coal is the immediate consequence;—for it cannot be denied that the *unnecessary* and continuous exchange of boiling water in the boiler, for cooler feed water of about 100° Fahrenheit, demands a greatly increased quantity of coal, *which knowledge of the exact density of the water would save*. And I repeat that in working a boiler true economy of coal consists in “making,” as stated in my second letter, “*the least possible amount of fuel evaporate the greatest quantity of water in the least possible time, and with least damage to the furnace.*” How greatly these wholesome *dicta* are violated, their Lordships and the public will gather from the following:—

With regard to the Hydrometer, it is not known in the service generally to be connected with any scientific standard whatever beyond the vague supposition that its zero means either fresh or sea water. The maker himself does not understand it: he tells me so; and in reply to my inquiry, advises me to find out its meaning for myself by direct experiments. I deliberately and advisedly state that some of the most able engineers do not understand the meaning of its divisions, *for they asked me for information.*

Even in Main and Brown's work on the *Marine Engine* (which bears the Admiralty stamp and has long been the text book of the Navy), we find (p. 194) these clamatory remarks—“*there is no paper accompanying the Hydrometer, and giving an explanation of its principles, and the meaning of the graduations on its stem.*”

Apart from the intrinsic merits of the instrument itself (against which I have not a word to say), how is it used? Let us inquire of any engineer at what grade of density he keeps his boiler water *by his Hydrometer*. I have asked at least a hundred, and scarcely two consecutive answers agree. One will say “17 or 18” (ask him 17 or 18 *what?*) another says about 20; another 23 or 24; and so on up to

30 and 35. Can we wonder at this, seeing that principles are considered to be unimportant? Even if these were known, neither the Hydrometer nor its cognate, the Salinometer, could vie in accuracy with the taking of the boiling point: for, again referring to the same standard work, at page 193, its authors say, "there is one particular on which the efficiency of the hydrometer depends, and for want of paying sufficient attention to this point, *it becomes frequently quite useless* when placed in charge of those who are not accustomed to minute accuracy in observations:—it is very evident that the density of the water depends on its temperature as well as on its saltness, and therefore the saturated solution of a high temperature will frequently be of less specific gravity than that which is not so highly saturated at a lower temperature." Let me therefore by way of driving home the nail—strike another blow by repeating my assertion that "engineers cannot under existing circumstances know the actual state of their brine!" because some of *them use brine containing double and treble the quantity of solids that others do*:—and this occurs where uniformity of practice as a *check on waste* is so desirable! Many officers, to my knowledge, writhing under the uncertainty of present measures will not use their service hydrometer except as a matter of obedience, but privately depend rather on English and Foreign "Salimeters" of various makes. Ought they to be driven to such extremity? But the waste is not perceptible to the eye.—only to the intelligence—hence its unwitting toleration. I would apologise for introducing matters of detail into pages wherein I have for upwards of thirty years looked for recreation and amusement not unattended with valuable instruction. But I am sure, Sir, that the respected Editor of a Magazine, which through nearly forty years has been so ably devoted to naval interests, will not exclude from his pages suggestions which bear so strongly on those interests merely because they are novel in their subjects and treatment, and are meant to strike *inoffensively* at evils of magnitude.

A simple experiment will illustrate errors in the present popular mode of taking boiling points.

Let any one boil some rain water under average atmospheric pressure, protecting the stem of the thermometer from cooling air:—

If the bottom of the thermometer bulb rest at or close

to the surface of the water (currents of air being screened)

the boiling point of the water will read as . . . . . 212° F.

But *immerse* the bulb into the water and the boiling point

of the same water will vary up to . . . . . 214° to 215°

In common salt water it will of course range considerably higher. Now what is all this? It is a very bombshell which, fired into the midst of a public chimera ought to scatter it to the winds;—for have we not the fact, that Admiralty instructions order engineers never to let the boiling point exceed 215° as a limit of safety from deposition of solid? But we here see that even plain water can under existing circumstances, be made to appear to boil nearly at 215° and can therefore be mistaken for brine: much more then must the boiling of salt

water under similar circumstances be deceptive, in often appearing to be brine at the highest point of saturation permitted by the Admiralty, when it is nothing more than boiling ordinary sea water.

And again, the difference between the density of  $\frac{3}{4}$  (which represents common salt water, that on an average contains one thirty-third part, by weight, of solid matter) and  $\frac{3}{2}$  will affect the boiling point temperature to the extent of only about  $1.1^\circ$  but in the experiment referred to, 215 less 212 equals three degrees of Fahrenheit, thus equalling say two units of density at least—so that an unscientific observer may I say easily mistake it for forbidden and unsafe brine, through ignorance in immersing the thermometer in the water, instead of in the vapour just where it is formed at the water surface.

But engineers are *taught in books used in the service* to dip the thermometer into the water! Surely this exonerates engineers from all possible blame: no greater proof exists of the high intelligence that prevails among this class of officers, than that under all these perplexities *they manage to get along at all*.

And again, how does an engineer at sea take the density of his boiler water? He draws some boiling brine from the boiler into a high, narrow, copper hydrometer pot. By the time he is ready to use the hydrometer, the water becomes cooled generally to about  $200^\circ$  (to which the hydrometer is adjusted by the maker:) he floats in his hydrometer, and at his caprice or judgment, or without any true datum or standard for his guidance, reads off what he has been accustomed (from hearing a variety of conflicting opinions) to attach a certain meaning to, and thus he thinks he knows the density of his brine; he has nothing but his own comparisons to go by, and he adjusts the blowing off and feed water accordingly. This is one method.

Otherwise, he takes a boiling point, thus: he boils some brine from the boiler, and then plunges his thermometer *to the bottom of the boiling water in the deep hydrometer pot*, and reads off his erroneous and worthless register of temperature.

But, Sir, this gives merely the temperature of *the water at the lower stratum* of the tall pot, and the fact that the temperature of a fluid in heating, increases in temperature from layer to layer *towards the bottom*, is totally ignored, as I am afraid it is in many similar operations by the public generally. Only a few days since I was reading a most interesting and deservedly popular book of recent travel, by a distinguished explorer, in which were given the heights of mountains never before perhaps seen by Europeans, but they were obtained he says, by means of boiling points taken by "*immersing a thermometer into boiling water at their summits.*" What a pity! How many hundreds of feet of error his more scientific successors may have to add to his "heights" we may yet live to see: especially if the illustrious Livingston succeed in his attempts to penetrate the locality—(All honour to them).

Now only imagine, Sir, the real consequences of mere misunderstandings as to apparently small points in manipulation and the loss and vexation they give birth to!

I should like to know if ever an engineer found the two methods (of density of brine as shewn by hydrometer and by thermometer) *give the same results*. Waste of fuel under such uncertainties must be enormous!

The remedy is easy. I have made some careful experiments which furnish a footing on which the true economist can take his stand. The results are as yet unpublished, but are now offered for record in your pages. I should state that engineers have long held varying opinions as to the strength of brine at which solid deposits are formed and begin to incrust the marine boiler. Of course the whole question of blowing off saturated brine depends hereupon. To set this at rest, I carefully evaporated in a glass vessel some filtered sea water. It must be remembered that although the nature of the material of the vessel influences a boiling point, *it only does so when the thermometer is immersed in the fluid*:—and that the boiling point of distilled water with the thermometer *enveloped in steam* near the water's surface (at mean pressure) is always 212° F. (I carefully used a delicate balance, and weighed at a temperature of 212° in the vessel itself.)

I found that at the boiling point

of 214·4°	equal to $\frac{2}{3}$	there was no deposit whatever of solid matter;
of 215·5°	„ $\frac{3}{3}$	there was a very small cloudy commencement, scarcely perceptible;
of 216·6°	„ $\frac{4}{3}$	there was deposit of ·15 of a grain in 1000 grains of sea water. (equal to about $\frac{1}{4}$ of a grain);
of 217·9°	„ $\frac{5}{3}$	there was a deposit of ·90, or nearly 1 grain in 1000;
of 219·0°	„ $\frac{6}{3}$	there was a deposit of 2·95, or nearly 3 grains in 1000;
of 220·0°	„ $\frac{7}{3}$	there was a copious and rapidly increasing deposit.

Of course lime would be deposited from fresh water at under 212°.

With proper instruments, and *properly understood* instruments, all confusion and waste would cease, for a well organized and uniform system is invitingly open to us.

Now I submit, Sir, that from even so far as I have gone, I was right in saying, “the officer in charge never knows (from the instruments supplied him) the actual state of the brine in the boiler,”—and that great waste and loss arise from want of knowledge of principles. But there exists another *and equally* great source of waste, from the erroneous manner in which boiler water is generally treated. I mean in *neglect of using the barometer* when taking a boiling point.

I am not caviling about niceties of correction or delicacies in manipulation, but simply deal with gross and glaring, and costly misconceptions, as we find them.

The popular notion that water boils at 212° F. leads to considerable inconvenience. The fact is that distilled water boils at various temperatures, sometimes at 213 $\frac{1}{2}$ °, sometimes at 208 $\frac{1}{2}$ ° at the sea level. Now really, Sir, if this be true, *here are 5° of difference in the various*

*ways of boiling fresh water*—apply this to salt water, and ships' boilers, and where are we?—all in confusion!—(another bombshell?) because we are told that a change of temperature in the boiling point of little more than  $1^{\circ}$  indicates one unit of density—while engineers are allowed only to condense their boiler water to three degrees of saturation, equalling  $3.3^{\circ}$  of Fahrenheit. Why—whose fault is this?—certainly not any particular Board of Admiralty's—these details are never brought before *them*; they are, of general necessity, confided to subordinates, and in many cases, great allowance must be made for heads of departments: it is only when we compare absolute practice with precise principles that these discrepancies are detectable. When I accepted office I was told that such was my duty—and I have faithfully performed it. The best illustration of what has been said upon variation in the barometric pressure is the supposing a case:—thus,—an engineer at sea is running short of coals and anxious to make the most of them, and early some morning takes the boiling point of his brine and reads it, say as  $214^{\circ}$ , perhaps soon afterwards finer weather sets in after a storm—the barometer rises: again, in the evening on examination of the boiler water with the greatest care, he finds its boiling point to be about  $216^{\circ}$ . Whatever confidence he may through the day have reposed in his juniors, and the stokers, he finds that apparently nearly *two units of density have been added to the brine*, and of course at once “blows off”—(I will venture to say that if made of flesh and blood he blows up also)—*Now had he known the importance of consulting his barometer at each operation* he would have seen that instead of any change having occurred in density, the work had been fairly performed, and the actual density maintained, so that the blowing off was uncalled for and wasteful of fuel. Few are aware of the extent to which changes in atmospheric pressure affect a boiling point: as regards engineers every man of them who never witnessed this, would at once exclaim against any attribution of importance to it;—while on the other hand, every one who has seen the demonstration thereof, has been strongly impressed with a desire of better system in the service. It is quite enough for my purpose to shew (by means of an all sufficient table of corrections as adapted to each unit of density made by me for the express use of engineers) that for example, when the barometer stands

At 31 inches a boiling point of  $216^{\circ}$  means a density of  $\frac{2}{3}\frac{1}{2}$ .

At 30.30 inches            “             $216^{\circ}$             “             $\frac{2}{3}\frac{3}{4}$ .

At 29.70 inches            “             $216^{\circ}$             “             $\frac{2}{3}\frac{1}{4}$ .

And so on:—*in this case alone equal to the whole range allowed by Admiralty order*. In ignorance of principles it is an absurdity to think, that  $216^{\circ}$  can be the boiling point of water of so many densities. At present the engineer has to make his haphazard selection,—unless he take to his aid other *equally fallacious* checks,—What can he do!

As to the desirability of using in preference either the hydrometer or the thermometer, we may safely be guided by Main and Brown's opinion already quoted. The thermometer is the safest, the readiest, and the most accurate, if the atmospheric condition be noted—as for



example—suppose an *apparent* boiling point is  $216^{\circ}$ ,—against  $216^{\circ}$  in my complete table of corrections for barometer pressure of 30·30 inch stands  $\frac{3}{3}$ —*the most scientific, as it is the most exact of all methods*—but at present we cannot use it, because the thermometer supplied is only graduated to two degrees, each degree being on the scale about  $\frac{1}{2}$  of an inch. Again, to quote Main and Brown, they say that engineers want “a thermometer specially graduated with extreme care at or near the boiling point.” In consequence of some experiments in my lecture room conducted by me in the presence (as usual) of engineers, and at their special request, I made a thermometer expressly for boiling points ranging between  $205^{\circ}$  and  $220^{\circ}$ , *each degree being nearly of the space of half an inch, and therefore ten times larger, and graduated to tenths of a degree*, the whole instrument occupying in length the space of only nine and a half inches.

Of course, Sir, you would expect that on my freely offering this to the Admiralty unconditionally (not to the Board itself), together with all I thought it my duty to suggest, that I met with every courtesy—every encouragement to persevere. But there are “portals” at Whitehall also. The extent of that encouragement would with more propriety be shewn in another letter if kindly allowed to resume in your next Magazine.

“Cui dabit partos scelus expiandi  
Jupiter?”

S. M. SAXBY.

*Faversham.*

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## THE CAVE CANNIBALS OF SOUTH AFRICA.

(From the *Grahamstown Journal*.)

AMONGST the many interesting objects of the Transgariep country are the celebrated Cannibal Caverns, the largest of which is situated amongst the mountains beyond Thaba Bosigo. A visit to this cavern will well repay the traveller for the break-neck journey that he is obliged to take before reaching it; and after he has spent an hour or two in the cavern and its vicinity, he will, I imagine, return a wiser and a sadder man; for such were the feelings that I brought away with me after paying it a visit.

We left Thaba Bosigo (the residence of the old Chief Moshesh) in the morning, and after passing that mountain we travelled up a steep and narrow valley, and then along the Berea heights, until we reached the old deserted mission station Cana, where, having obtained the necessary guides amongst the natives of this place, we started for the Cannibal Cavern, which was about two miles distant. Upon our arrival at the mountain above the cavern, we left our horses in charge of a native, and descended a steep and rugged footpath (or rather I

should have said, a *hand-and-foot-path*, for the hands have quite as much to do in travelling this precipitous path as the feet), and by dint of holding on the tufts of grass, shrubs, projecting rocks, etc., etc., and by slipping, sliding, and scrambling, we at length arrived upon a grassy ledge in the face of the cliff where we could stand without the necessity of holding on. On turning to the right of this ledge the scene opened in all its grandeur, and certainly in all my life and wanderings I have never beheld a more savage looking place. The cavern is formed by the overhanging cliff, and its entrance, a long, rugged, natural arch, extends along the whole face of the cavern, or nearly so, which is in length about one hundred and thirty yards, and its breadth about one hundred. The roof of this place, which is lofty and arched, is blackened with the smoke and soot of the fires of the savages who formerly inhabited it, and its floor strewn with the remains of what they had left there, consisted of heaps of human bones piled up together or scattered about at random in the cavern, and from thence down the sloping face of the rock, as far as the eye could reach, the clefts and small level spots were white with the bones and skulls of human beings; skulls especially were very numerous, and consisted chiefly of those of children and young persons. These remains told too true a tale of the purpose for which they had been used, for they were hacked and cut to pieces with what appeared to have been either blunt axes or sharpened stones; the marrow bones were split into small pieces, the rounded joints alone being left unbroken. Only a very few of these bones were charred by fire, showing that the prevailing taste had been for boiled rather than roast meat.

You may guess the feelings with which I wandered about this gloomy sepulchre and examined its various places of interest. One spot was pointed out to me, with rough, irregular steps, leading up into the interior of the cavern to a gloomy-looking natural gallery, and in this place, I was informed, were stowed away the unfortunate victims not required for immediate consumption. From this place it was impossible to escape without passing through the middle of the cavern, which they could not do without being detected.

Horrible as all this must appear, there might be some excuse made for savages, driven by famine to extreme hunger, for capturing and devouring their enemies; but with these people it was totally different, for they were inhabiting a fine agricultural tract of country, which also abounds in game; but, notwithstanding all this, they were not contented with hunting and feeding upon their enemies, but preyed much upon each other also, for many of their captures were made from amongst the people of their own tribe, and even worse than this—in times of scarcity, many of their own wives and children became the victims of this horrible practice. If a wife proved lazy, or quarrelsome, she was speedily disposed of, or a crying baby would in like manner be silenced; and any member of the community showing signs of sickness or bodily infirmity, would not be allowed to linger or to fall off in condition. Such were the horrible practices of this degraded people, and, although it is now commonly reported that they have for

many years entirely given up this diabolical way of living, I saw, while at the cavern, unmistakable evidence that the custom has not been altogether abandoned, for amongst the numerous bones were a few that appeared very recent; they were apparently those of a tall bony individual, with a skull as hard as bronze; in the joints of these bones the marrow and fatty substances were still evident, showing but too plainly that not many months had elapsed since he had met his fate.

This cavern is one of the largest in the country, and from all accounts, formed one of the headquarter establishments of the cannibals; but the whole country, from the Moluta to the Caledon, including a part of the Putesana River, was about thirty years ago inhabited by cannibals, who were the terror of the surrounding tribes.

Their mode of living was to send out hunting parties, who would conceal themselves amongst the rocks and bushes, and lie in ambush near roads, drifts, gardens, or watering places, for the purpose of surprising and capturing women and children, or travellers, or boys in search of lost cattle, etc.

There are still a good many of the old cannibals in existence. On the day that we visited the cavern, I was introduced to one of them, who is now living not very far from his former dwelling-place. He is a man of about sixty years of age, and (not to speak from prejudice) one of the most God-lost looking ruffians that I have ever beheld in all my life. There is one little episode connected with this man's life that I may as well relate. In former days, when he was a young man, and residing in the cavern, he captured, during one of his hunting expeditions, three young women, and from these he selected the best-looking as a partner for life—the other two went to stock the larder. This union, notwithstanding the strange circumstances attending it, proved to be a happy one, this lady soon reconciling herself to her new mode of living, and settling quietly down in her cavern, where I was shown the corner which she and her husband formerly occupied: and her son, a fine strapping youth, brought us some milk on the day on which we visited the cavern. The old man's name is Rankutseng,\* and that of his wife Mategyeni.

Of the vegetation of the cavern and its vicinity, I have but little to say. There was nothing remarkable about it; a few scattered ferns of the commonest kinds grew here and there in the crevices of its roof, and outside of the cavern, growing in the broken skull of a child, which was partly filled with earth, and served it as a flower-pot, was a little bulb (one of the *Asphodelacie*), which I brought away with me as a souvenir of the cavern, and its sad associations.

I also visited, in company with some friends, several of the cannibal

\* This is probably *Rakotsuane*, whom Arbousset and Dumas mention as the principal chief of the cannibal tribe called *Makhatla*, tributaries to Moshesh. According to Arbousset's original account (*Relation*, page 117), *Rakotsuane* had four kraals under him, whilst the translation *Narrative* (page 58) makes him govern twenty-five or twenty-six kraals, the most considerable of which was *Srjika*.

caverns near the sources of the Caledon River. Some of these are very fine, large caverns, though not so extensive as the one that I have just described. These Caledon River caverns are still inhabited, though no longer by cannibals, as the people have taken to other modes of procuring a livelihood.

At one of these caverns we met with an old savage, who told us that he had formerly been at the cooking of about thirty people, when cannibalism was still in vogue, and he seemed, like the "Last Minstrel," greatly to regret that

Old times were changed,  
Old matters gone;

and that

The bigots of this time  
Had called his *harmless* life a crime.

For he appeared to think that the objections raised to their former mode of living were unreasonable and uncalled-for. This old savage had a "devilled kidney" or "boiled missionary" look about him.

While we were at this place we heard rather a curious anecdote: it is as follows:—

"Many years ago, during one of the raids made by the cannibals, several individuals were captured and brought into the cavern, and amongst them was a young girl of great personal attractions. After a great deal of discussion on the part of the savages, her life was spared, and she became the wife of one of the cannibals. After some time had elapsed, the father of this girl received information that she was still alive, but detained in the cavern: upon hearing which he sought the aid of one of the missionaries residing in those regions, and together they proceeded to the cavern, where they made the necessary arrangements for the girl's return to her home, the father paying six oxen as a ransom for his daughter. But she had not been very long at home before she again disappeared, and upon enquiry being made, it was found that she had, of her own free will, returned to her friends in the cavern; strange to say, preferring their mode of living to that of her father who was not a cannibal."

There is another anecdote told of these people which I will also relate, as it serves to illustrate their manners and customs, and to show how lightly they regarded human life:—

"In former times, when lions were plentiful in these regions, they would occasionally (like the inhabitants of the caverns) choose the flesh of human game in preference to that of wild animals, becoming exceedingly troublesome in their nightly ravages to the inhabitants of the caverns, seizing and devouring many of them. To rid themselves of the lions, these people constructed stone traps, and (shocking to relate) these stone-traps were baited with young children, whose sad wailings attracted the lions to the spot, when they would be taken in the snare, and the life of the child sacrificed. There is an old woman living near Thaba Bosigo who told me that she had in the days of her childhood been the bait of a lion-trap; fortunately for her the lions

did not enter the trap in which she was placed, or she would not have been saved to tell the tale."

The inhabitants of these caverns, who were formerly cannibals, constitute a part of Moshesh's tribe, which has been made up of the remnants of various aboriginal nations. The old chief, I have heard, did all in his power to suppress and do away with cannibalism amongst his people, and his endeavours were at length crowned with success, for they have, almost without exception, ceased to practise this inhuman custom, and have taken to other and more civilised modes of obtaining a livelihood. They are now not only stock-breeders as well as stock-lifters, they are also tillers of the soil.

T. H. B.

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#### DESCRIPTION OF THE PORT OF CAYO MOA, CUBA.

*By Don Cecilio Pujazon, Lieutenant and Chief of the Hydrographic Commission to Cuba.*

*The Port of Cayo Moa.*—The reef which surrounds Point Guarico, and continues along the coast, terminating at Port Yaguencque, leaves between that point and its interior border, and between the meridians of the river and Cayo of Moa, a space of some extent called the Port of Cayo Moa; always sheltered from the sea and winds from the N.E. and N.W.

*Mouth of the Port.*—The mouth of the port is formed by a break in the continuity of the reef; the narrowest part of it being about  $3\frac{1}{2}$  cables lengths across with sufficient depth for any class of vessel. The position of its entrances having reference to the coast, it will be as well to give some account of this latter, included in the interior of the port; describing afterwards the reefs and rocks of the port, and concluding with directions for taking an anchorage in it.

*Point Gorda.*—Point Gorda is a small bluff formed by a tolerably high mountain continuing from the interior; and it bears N.  $38^{\circ}$  W. from Guarico, distant about  $5\frac{1}{2}$  miles.

*Point Yagrumaje.*—N.  $57^{\circ}$  W. from this bluff nine-tenths of a mile is Point Yagrumaje very much like Point Gorda in form and appearance, and between the two is a bay, in the midst of which is the mouth of the river of the same name, that runs between the two hills which form the above points; the mouth of this river is very narrow and is not navigable inside even for bonts.

*Point and Sand of the River Moa.*—From Point Yagrumaje to the river Moa N.  $35^{\circ}$  W. about nine cables the shore trends nearly W. by N. forming a little bend in which a stream disembogues. It afterwards forms a sandy plain which terminates in a rocky point, the end of a height from the interior, from whence commences a collection of man-

groves divided into two parts by an estuary, and the coast in continuation trends N. 20° E. as far as Point Moa. This portion is a sandy shore at the extremity of which stands a fisherman's hut.

*River Moa.*—The mouth of this river is close to the point above-mentioned and is 82 fathoms wide. The river first runs S. 7° W., and afterwards W.S.W. and W. for half a mile, and then turns to the interior, following the bases of the hills, in which the Moa hills terminate. It may be navigated by boats for two miles taking the mouth at high water as it has a rocky bar.

*Sand, Point, and Estuary of Fabrica.*—From the mouth of the river Moa, the sandy shore continues forming a bay and a point which bears N. 62° W. from the mouth of the river distant half a mile, and continues rounding to its termination at the entrance of an estuary. The sandy shores, the point, and the estuary bear the name of Fabrica; and the estuary which is some 50 yards across at its mouth takes a direction to the S.E.

*Sandy shore of Palmar.*—From the Estuary of Fabrica the mangroves continue along the coast, which trends W.S.W. to another small estuary, from which commences another sandy shore, with occasional mangroves, called the Palmar, from one of the palms being on low ground, the termination of which is the above-mentioned sand. The mangrove afterwards commences to round and form a point called Yaguasey in which is an estuary of the same name. Point Yaguasey bears N. 80° W. from Fabrica, distant 1.4 miles, and the bay formed between them has received the name of the Bay of Yaguasey.

*Estuary of Moa.*—From point Yaguasey the mangrove coast continues N. 72° W. for a mile and half, terminating at the Moa Estuary, from whence commences a sandy plain which is the landing place of what was the colony of Moa, and nearly at the edge of this sandy plain are three or four huts occupied by fishermen, the last remnant of the colony. From the Moa Estuary the sandy coast trends direct N. 40° W., varied by four rocky slightly projecting points, between which is an estuary called Juan Claros, and a brook from which vessels may water.

*Point Cavanos or Cavagan.*—From the last of these points the mangroves begin afresh interrupted by a small playa of sand, and trends then N. 40° E. forming at its end Point Cavanos or Cavagan. The bay between Points Yaguasey and Cavanos is called the Bay of Moa. The Moa Cays, on the opposite side of the port, are two very close together, extending in the direction N. 60° W., and separated by a small channel which in a short time will probably disappear. The largest of these is 1.8 miles long and nearly rectangular with two branches projecting southward. Its outer edge is a small sandy shore and the rest is covered by shrubs and mangroves. The little cay is only a collection of mangroves. The western point of the southern arm of the large cay is called Point Carenero; and to the easternmost part of the large cay, to the southernmost of this same, and to the westernmost part of the small one, the names of Point Coco, Point Pajaros, and Point Manati, have been assigned. Point Coco bears N.

22° W. from the mouth of the river Moa 2·2 miles, and Point Manati N. 64° E. from Point Cavanas 1·5 miles.

*Reefs and Entrance of Moa.*—The reefs which surround Point Guarico continue to the Port of Yaguaneque, varying in their distance from the coast. On the meridian of Point Gorda this distance is above 2·2 miles, its outer edge continues afterwards N. 55° W. for 1·2 miles to form the windward head of the opening of Cayo Moa; this head bears N. 14° E. from the middle of the mouth of the river Moa distant 1·5 miles, the interior edge takes a direction S. by E. forming a point which is 0·2 mile from the interior of the head and afterwards to the S.E. forming a second point: both of them are readily distinguished when in the entrance from the little water over them and from the light colour of the edge in the interior of the reef.

The leeward reef surrounds the Cayo of Moa at the distance of 0·4 mile, and takes nearly the same direction as the large Moa Cay. The head of it bears about north of the mouth of the river Moa, distant 1·5 miles, it continues nearly S.S.W. and at the distance of 0·3 mile from the outer head forms a second from which it continues west in the direction of Point Pajaros. On the windward head the sea always breaks with winds from E.N.E. to W.N.W., the leeward head only breaks with a fresh breeze, on which account it is not so readily distinguished as the former.

*Shoals of the Coast and Rocks of Cayo Moa.*—From the point of river Moa to that of Yaguasey the coast throws out a bank on which some rocky heads are found. This bank assumes nearly the same line as the coast, and at the distance of 0·21 mile from it there is a depth of 16 feet. With the interior point of the windward head in line with that of Fabrica there is a shoal of 0·4 mile in extent, on which in some places there is only 10½ feet of water, to which the name of Bajo Grande has been given. Between it and the interior edge of the reef there is a small channel in which there is nearly 16 fathoms water, between this and the mouth of the river Moa there is another small rock with two fathoms less water on it. The eastern entrance of it is with Point Manati in line with Point Fabrica, and the western part of Carenero in line with the estuary of the Bay of Yaguasey, this has been named the Yaguasey Rock. With Point Pajaros in line with that of Yaguasey is a rocky head which is now marked with a staff, and on which there is only 12 feet water, and which is called the Palmar rock.

*Channel of Entrance and anchorage.*—The Channel of Entrance to the port is formed by the opening in the reef. The most sheltered anchorage for vessels drawing 16 feet is south of Points Pajaros and Carenero, a cable from the Cay; those of less draft may anchor more under shelter of the Cay, but west from the meridian of Point Carenero, the bottom is not only very irregular but abounds in rocky heads. To take the anchorage of Cayo Moa coming from either the eastward or westward a vessel should stand on outside of the reefs until she has the middle of the entrance bearing S. by W., when the mouth will be completely open and the windward head distinctly visible. From this

position she should steer for the mouth of the river Moa until she has passed the windward head and will be abreast of the first point of its inner edge, from thence she steers for the end of the Palmar sand, until she is on the line joining Point Coco with the point of the river Moa, or when Point Pajaros bears N.N.W. She should then stand west until abreast of the mouth of Fabrica estuary, and then steer W.N.W. and as soon as she is between the meridians of Point Pajaros and Point Carenero she may anchor in  $6\frac{1}{2}$  to 8 fathoms according to her draft.

In the channel the depth varies from 28 to 21 fathoms, which latter is found within the reefs and from which the depth decreases to  $2\frac{1}{2}$  near the edge. It is right to observe that on entering the port with the fresh trade it is advisable to keep the weather side of the mouth as it is most distinct and clear, and nearly where the sea breaks there are more than four fathoms water, while the lee side is not so visible. In calms it is not advisable to enter without a pilot, the marks for the rocks not being easily distinguished. From these instructions for entering it will be easy to deduce those for leaving the harbour.

Although this port on account of its depth would be available for all classes of vessels, the limited extent of its anchorage room renders it advisable that it should only be frequented by those drawing 16 feet and under. As may be supposed it is a bad port for sailing vessels, as it can only be left with the land wind or a very light trade; and to leave it by beating out, it is necessary to be thoroughly acquainted with it or risk being wrecked.

*Tides of Cayo Moa.*—The tides here follow the same law as those of Cuba; having two high and two low waters. The establishment observed at point T on the plan is 8h. 9m., and the greatest difference between high and low water does not much exceed 2.6 feet.

*Tidal Streams.*—The currents formed by the tide are sufficiently remarkable, as between the meridians of Punta Gorda and Cayo Burro, the entrance of Cayo Moa, is the channel by which they enter and leave the port, a fact which should be considered in going in or coming out, so as to allow for it in reference to the speed of the vessel.

*Watering Places.*—Water may be had at the harbour of Moa at the place marked in the plan, as well as at another to windward of point Gorda. The water of the rivers and estuaries is not good unless obtained at low water and well inside them. The land heights of Moa rise behind the river of this name, and are good marks for a distant vessel bound to the port. From the anchorage marked on the plan, on point Cavanos will be seen a little height, to which the name of Guarasagua hill is given, the rest of the ground forming the port is low, and not easily made out from being entirely covered with trees.

The bearings given are true. [From the Anuario de la Direccion de Hidrografia, Vol. VII. 1869, in which is a plan of the port on a good navigable scale.]



## ENTERING THE BOSPHORUS FROM THE BLACK SEA.

THE following information on the navigation of the Black Sea in the neighbourhood of the Bosphorus, is principally from Navigating Lieutenant H. F. Woods, R.N., 1869.

*All bearings are Magnetic. Variation 5° 35' Westerly in 1869.*

*General Directions.*—On approaching the Bosphorus from the northward, in clear weather the land about the entrance is known by the Maltepeh and the Brothers hills, towering far above the intervening ranges on the Anatolian coast, whilst the Roumelian hills continue of a uniform height. When about fifteen miles off the whitewashed mark on Youm-bornou appears as two patches, and serving to indicate the light-houses which soon after become visible. The sandy patches about Kilios and to the westward next appear and the whitewashed marks on Khairsis islet and Galara-bornou, or Beacons Nos. III. and IV. on the Admiralty charts.\*

There is much difference between the two coasts here. The Anatolian coast, from the entrance as far as Marra-bornou, Beacon No. VIII., fringed with broken cliffs has little or no beach visible until very near the land, whilst the Roumelian has a long sandy beach from Kilios to the westward, merely divided by Kara-bornou. The back-ground slopes gradually down to it forming broad spurs, covered generally with a reddish sand, so that when far off large patches are seen extending from the horizon up the hills. These distinctive features on the western side of the entrance to the Bosphorus, contrast well with the white marks at the several positions marked by beacons on the chart, and the absence of the sandy patches from the Anatolian coast.

*Fogs.*—When fog and dense clouds hang about the hills, and driving rain obscures the coast, great caution is necessary on approaching it, as there are some localities which then much resemble the entrance. The lead must then be used, and if the soundings are duly regarded, the vessel's position can be ascertained and the entrance steered for.

*Soundings.*—The chart shows the great difference in depth of water and nature of bottom off the two shores. Off Kara-bornou on the Roumelian coast, the hundred fathoms line is about twenty-three miles from it, soundings are found before the land is visible; the distance of that line decreases towards the entrance, where it is only about fifteen miles from it.

Again, the depth on this bank gradually decreases towards the shore, the bottom first oaze, changes to mud and broken mussel shell at an average distance of seven miles from it; within three miles of it, the soundings change to shell, and at one mile from the shore to sand. Off Kara-bornou and to the westward patches of oaze mixed with a soft yellow clay are found, giving a streaky appearance of blue and yellow to the produce of the lead.

\* See page 277 of our last year's volume for an account of these beacons.

Off the Anatolian coast the hundred fathoms line extends no more than ten miles from the shore; depths decrease more rapidly and the bottom of mud and small round shells; the broken mussel shell of the western coast is not found. The shelly bank also extends farther from the shore, in some places to five miles, but changes to sand when within a mile of it, as on the other side.

Immediately off the Bosphorus the bottom at first is found similar to that off the Roumelian coast. But a bank of sand and shells reaches to about seven miles in a N.N.E. direction from it, mud and shells being found east of it, and west of it mud only; a sufficient indication this of the real entrance to the Bosphorus, for nowhere else in the vicinity will the lead bring up sand and shells in a depth of from thirty-six to forty fathoms.

In thick weather, a vessel from the northward should ascertain her position by sounding. A cast of fifty to fifty-five fathoms, mud and shell, would indicate that she was off the Anatolian coast. Then standing cautiously southward should the water shoal rapidly to forty-five fathoms with the same bottom, she might steer westward till sand and shells are found, when she would be in the entrance fairway.

But if mud alone be found in from fifty to fifty-five fathoms, the ship would be off the Roumelian coast, and should stand to the south-east till in about forty-five fathoms mud and shell, just to the eastward of the entrance, and can then proceed as before directed. If thirty-seven to forty fathoms, sand and shell, be first obtained, steer at once southward for the Bosphorus.

*Light Ship.*—When the light ship is in her proposed position fifteen miles North from the entrance, it will be safer after obtaining soundings to steer direct for her, when from her a direct course may be shaped for the Bosphorus. In the event of the vessel not being seen, soundings would sufficiently indicate when she was passed; on approaching from the westward, for depths gradually increase, when past the light ship shell is found with mud if to the southward, and to no bottom with 150 fathoms if to the northward. But on approaching from the eastward, the depths gradually decrease, and when past the light ship the bottom changes to mud without shell.

*Beacons.*—Vessels approaching the Bosphorus from east or west, should keep in depths between forty and forty-five fathoms till sand and shells are obtained, when they would be just off the entrance. A prudent navigator in no case would shoal his water under forty-five fathoms until one of the beacons, or other mark on the land is seen affording additional proof of his position; and he would keep in mind that the white marks are only on the Anatolian coast, and the large sandy patches of red on the European; all the beacons of the Anatolian coast are coloured *red*, and surmounted by *globes*, whilst all those on the Roumelian coast are painted in *red* and *white horizontal bands*, and surmounted by *cones*; that the refuge-houses to the east of the entrance are all painted *white*, while those to the west are *white* with a *horizontal red band*; also that the only *white* light-houses are those of the entrance, that of Shillee being painted

*red*, like the Anatolian beacons, and Kara-bornou has *red and white bands*, similar to the Roumelian beacons.

*False Entrances.*—The two localities that bear the strongest resemblance to the entrance of the Bosphorus, and which are sometimes taken for it, are, the Bay of Shillee on one side, and the neighbourhood of Lake Terkos west of Kara-bornou on the other.

*Shillee.*—(Kili of the Admiralty Charts.)—The Bay of Shillee is bounded on each side by a bold headland: between them an extensive plain recedes far inland from the shore, with ranges of hills in the background, and thus causes the appearance from a distance, to a stranger, of an opening of considerable extent, which he mistakes for the entrance of the Bosphorus. A cast of the lead would soon undeceive him, as off here a bank of shells extends to fully five miles from the shore, whereas at that distance from the true entrance sand mixed with shells would be found with a greater depth of water.

*Lake Terkos.*—Again at Lake Terkos, the shore between it and the sea being a low sandy desert waste, bounded on one side by the bold headland of Kara-bornou, and on the other by the commencement of a range of hills extending northward along shore, causes this locality also to resemble the entrance of the Bosphorus, and has obtained for it the name of the false entrance, the lake being of considerable extent, and bounded on its southern shore by high land, adding to the deception.

But here, as off the other (Shillee), the lead will at once dispel the illusion, as mud and shell or shell alone is obtained, but no sand and shell.

*Winds.*—During the summer months, from the beginning of April to November, the prevalent wind is from the north-east with a fine clear atmosphere: south-west winds prevail during the remainder of the year, and are sometimes violent in the months of December and January; the north-east gales being more frequently experienced in the months of September, October, and November. From July to September is the time when the white fogs are most frequently experienced, though they occasionally happen during the other months.

*White Fogs.*—These fogs come on occasionally with inconceivable rapidity during calm weather, concealing everything in a thick white vapour. As the fog, however, occasionally rises to the top of the cliffs, and even clears away altogether for a few moments, the beacons have been erected with the view of affording (by the glimpses thus caught of them) a knowledge of the vessel's position, obviating the necessity of vexatious delay on the part of a steamer, and enabling a sailing vessel finding herself unexpectedly close to the shore to take all necessary precaution to avoid the danger.

*Currents.*—The currents in the Black Sea near this vicinity, with the exception of the indraught to the Bosphorus, are variable, being influenced by the prevalent winds, though as a rule to the westward of Kara-bornou (in Europe) they sweep along the shore, and eastward of Shillee, in Asia, set to the eastward.

ASIATIC SHORE.—*Anatolia.*

*Shillee Point*—(Kilia of the Admiralty chart)—is long, gradually sloping towards the sea, and terminates in a little chain of islets which evidently at one time formed a portion of it. A stranger would suppose there was shelter in a north-east gale here, the cluster of islets appearing to form a natural breakwater: but the sea rushing between them with great fury, renders any attempt to ride out a gale extremely hazardous, more especially as the islets are surrounded by foul ground and the water shoals rapidly in the bay. On the summit of the largest of the islets stands an old square tower, once part of an extensive castle now in ruins. The whole of the sea face of this ruin as well as the cliff underneath has been painted white, and is seen from far away seaward.

*Light*.—On the rising ground of the point, showing well over the islets, stands the light-house painted red; from which at night a white revolving light is shown visible twenty-five miles.

The town of Shillee, built on the point, is considerable, and exports charcoal, and stones for building purposes; the small craft engaged in this trade are drawn up on shore to receive their cargoes and await a favourable opportunity for the return voyage to Constantinople.

A life-boat is to be placed here, and also a rocket battery.

*Marra-Bornou*.—From the west end of the bay of Shillee commences a range of hills continuing along the shore as far as Marra-bornou, on the summit of which latter projection stands the red beacon (No. VIII. of the Admiralty chart), a large hemisphere surmounted by a globe. A few yards below this beacon on the western slope is the mouth of a remarkable cave, which has given its name to the place: the cave is said to continue far inland, though the passage is very small and not sufficient to admit a man in an upright position.

*Allajulee*.—The hills recede until about a mile and a half from the shore, when they again stretch seaward towards Kara-bornou, leaving a low sandy piece of land at their foot, that between Marra and the last-mentioned place projects into the sea, forming the low sandy point of Allajulee, on which has been placed a beacon, No. VII., red, consisting of a globe above a larger one, both resting on a triangular shaped base.

The Asiatic shore from Shillee to Kara-bornou should not be approached within a mile, as under that distance the water shoals very rapidly, and it is also fringed with reefs of boulders.

*Armankiang*.—Within a mile and a half of Kara-bornou the sand terminates at a place called Armankiang, where there are a few low chalk cliffs, from the top of which the ground rises gradually to the summit of the range of hills of which Kara-bornou is the termination of a spur.

*Kara-Bornou* slopes and narrows gradually as it projects seaward, but near its termination suddenly rises again and forms a mound, and the earth having been washed away from the top, the boulders of which it is principally comprised stand up like the stones of a cemetery.

The sea face of this mass of boulders has been painted white, as well as a cliff of greater elevation a few yards to the eastward of the point, and thus from the northward two patches are seen, but in other directions only one. The point is bold, though foul ground extends to a cable's length round it. A beacon, No. VI., is on the rising ground overlooking the mound, and a few yards west of it, a refuge house stands in a sheltered position. The beacon is a large globe resting on a triangular base; and the refuge-house is painted white (as are all those on this eastern side of the entrance), and will form the station for a rocket battery.

*Mariola*.—The country hereabout, and as far as Riva, shows no signs of cultivation or of inhabitants; it is thickly covered with brushwood, arbutus, and other shrubs, and almost impenetrable. A short distance west of Kara-bornou is a small collection of huts called Mariola, where in summer a fishery is carried on, but in the winter is deserted.

*Adarjicklar-Bornou*.—From Mariola, cliffs of a yellowish colour border the shore, with occasionally a little valley, terminated by a narrow slip of beach. The two principal cliffs are formed by Adarjicklar-bornou, the most projecting part of the shore, about four miles west of Kara-bornou. On the summit of this point stands beacon No. V., consisting of a stout spar with a triangular base, bearing a globe resting upon the angle of a square placed diagonally,\* and a few yards below it, on the sheltering slope of the hill, is the refuge-house. The face of the cliff under the beacon has been painted white to distinguish it.

*Galara-Bornou*, the next projecting point westward, is long and sloping; it terminates in a rock separated from the land by a narrow passage of a few yards width, but which rock, not being of greater elevation than the point, has not the slightest resemblance to Kara-bornou. On the rising ground a few yards from the point stands beacon No. IV., consisting of a globe, resting on the angle of a square placed diagonally and both resting on a triangular base, with a refuge-house near it, coloured as before described. The three faces of the point have been painted white and are seen from all directions seaward.

*Khiar-Sis Islet*.—Good for nothing islet, as this name implies, stands off Elmas Tabia point, and being surrounded by reefs, should not be approached within half a mile. There is a deep narrow channel between it and the shore, and foul ground lying off the islet. This consists of two portions, connected in their middle by a low narrow ridge, evidently fast disappearing. On the northern and larger portion stands beacon No. III., consisting of a stout spar with a triangular base, bearing two globes, the lower of which is the largest; the cliffs beneath having been whitewashed form a mark seen in all directions from the sea. This islet which is high rises abruptly from the sea, but it is not so high as Elmas Tabia point.

*Elmas Tabia-Bornou*.—Deriving its name from being once a military

\* Called a lozenge in former volume.

station, the ruins of which are still visible,—is a bold steep headland. It is the termination of a range of hills from the interior, forming one side of the valley of Riva, through which runs the little river of this name, falling into the sea at the foot of the headland.

*Riva*.—The river is navigated by large boats to a considerable distance in the interior, carrying charcoal and firewood for Constantinople. The passage over the bar however being only open in the winter, in summer their cargoes are trans-shipped, and thus has sprung up a small village called Riva (more generally pronounced “Hurwah”), used as a small seaport and home for the sailors engaged in this traffic.

There is an old castle at the mouth of the river, shewing a few pieces of artillery, so that probably the traffic on the river was formerly considerable and the place of more importance. At Riva a rocket apparatus is to be placed, the look-out station being the headland of Elmas Tabia.

From the mouth of the river a long beach commences, forming the shore of the shallow bay, bounded at the opposite end by Youm-bornou, which should not be approached within a mile, the water shoaling rapidly.

*Sowan* is a small islet in the depth of the bay, connected with the beach by a sandy spit. It is high and shelters the few huts on the shore, where a fishery is carried on in the summer.

*Ahal-Hulta*.—At Ahal-hulta near the termination of the beach, where a small stream from a little valley falls into the sea, the beacon No. II. stands, as a mark for the best place for beaching a disabled vessel if she cannot weather Youm-bornou. A refuge-house stands near it.

*Youm-Bornou* is a bold steep headland, and so much above the neighbouring land, that the lighthouse on Cape Anatoli is concealed when approaching the entrance on a course more westerly than S.W. by W.; ships from the eastward should be careful not to alter their course southwardly in thick weather, or in dark nights, until both lights at the entrance of the Bosphorus are well made out, as Elmas Tabia point may then be mistaken for Youm-bornou, and the vessel get into danger.

On the top of the cliff stands beacon No. I., precisely similar to that of Ahal-hulta, consisting of a stout spar with a triangular base, bearing a globe. The cliffs beneath the beacon are whitewashed, showing well in all directions seaward to a distance of fifteen miles; owing, however, to the formation of the cliffs, they were so marked in several places, and in some directions from the northward two patches are visible.

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#### EUROPEAN SHORE.—*Roumelia*.

*Lake Terkos*, the coast about which has so frequently been mistaken for the entrance of the Bosphorus, is bounded to the southward by an irregular range of hills, which, bearing some resemblance to the winding, self-closing heights of the Bosphorus, tend much to deceive

the mariner in thick weather. The lake is separated from the sea by a sandy waste, the margin of which is strewn with the remains of wrecks. The lake abounds with varieties of fish.

*Chesmedick Beacons.*—The locality, is marked by two beacons, Nos. VIII. and VII., as marked on the Admiralty chart, one at Chesmedick, the commencement of the hills, chiefly composed of clay, showing a yellowish face seaward; the other on the rising ground of a small hill near the shore, about two miles to the eastward. The Chesmedick beacon consists of a cone reversed resting on a drum, supported by a stout spar, with a triangular base, painted in red and white horizontal bands, as are all the beacons on the European coast. Near it stands a white refuge-house with one red horizontal stripe round it.

The Terkos beacon consists of a cone reversed on the apex of another cone, supported by a stout spar with a triangular base. About a mile eastward of the Terkos beacon there is an outlet with a shifting mouth, open only in winter. About three quarters of a mile from the sea is a ferry.

*Orman.*—The country about is covered with brushwood, arbutus, and scrub oak trees; the nearest village, Orman, several miles inland, having no communication with the sea. It derives its name from being a well wooded country, and has importance as being the chief village of a large district and a telegraph station.

*Kara-Bornou*, a bold headland stretching a considerable distance into the sea, forms a small bay on either side. The face of it is nearly perpendicular, and so steep is it that the depth of twenty fathoms is found close to it.

*Light.*—A lighthouse stands on the verge of the cliffs, painted in red and white horizontal bands, showing at night a *white flashing* light every ten seconds to be seen twenty-two miles, but beyond the distance of eight miles the eclipses are not total.

On the eastern slope of the headland summit stands the small village of Kara-bornou, the inhabitants of which are principally engaged in rearing cattle. A few artillerymen have charge of two small ruinous batteries, of a few old brass guns, on the cliffs to the north-east, and from here there is a fair road all the way to Stamboul, meeting the telegraph wires at the small Greek village of Terkos (near the south-east end of the lake), and then continuing by their side for the remainder of the distance.

West of Kara-bornou the sea breaks in bad weather a mile from the shore, occasioned by a succession of sandbanks. The same appearance of shoal water, and black heads of an occasional reef, appear to the northward of Chesmedick, warning ships to be cautious how they approach that part of the coast.

In the small bay on the west side of the point there is to be a life-boat and a rocket apparatus. Off the eastern side of Kara-bornou, about a cable from the shore, and in the small bay, are several rocks.

From here a long sandy beach commences and continues as far as Kilios. A number of desolate looking valleys are formed between the hills taking the direction of the high land in the interior; in the middle

of these valleys small shallow streams run to the sea. The sand being driven up these valleys and up the hill sides for a considerable distance, destroys all vegetation but a coarse grass, and those land-marks, viz., the sandy reddish patches (only to be found in this locality), are formed, already noticed.

The principal of these patches, at Koondooz, Ak-Bounar, and Arshla Chefik, are distinguished by a beacon, erected as conveniently as possible near the mouths of the small streams.

*Koondooz.*—The beacon of Koondooz, No. VI., consists of a cone standing on the apex of another cone, on a stout spar, with a broad conical-topped base. Near it is a refuge-house painted like that of Chesmedick, like the other houses on this side of the entrance.

*Ak-Bounar.*—The beacon at Ak-Bounar, No. V., consists of a stout spar with a triangular base bearing a reversed cone.

*Arshla Chefik.*—The beacon at Arshla Chefik, No. IV., consists of a cone standing on the apex of a larger one, on a stout spar, with a triangular base. Here there is also a refuge-house in a sheltered position near the beacon; there is no village, that of Arshla Chefik being only a small farm belonging to the government, where a few soldiers look after a few horses. A rocket apparatus is to be placed at the refuge-house.

*Kisir Caya* is a rocky point slightly projecting into the sea, the ground rising gradually behind it. On the top of the cliffs is a battery with a few pieces of artillery, looked to by a small body of soldiers. A few yards east of this battery stands beacon No. III., consisting of a large wooden structure with a conical top surmounted by a reversed cone. A small village is on the western slope, no houses shewing eastward. East of the point the beach again commences, and continues as far as Kilios.

*Kilios.*—The point of Kilios slopes gradually and narrows as it projects seaward, and terminates abruptly, leaving a gap of a few yards between it and a large rock, which at one time was evidently a portion of it. It is faced on all sides by cliffs, from the top of which the ground rises to the highest part of the hill. Inland, behind the point, commences an extensive and well cultivated valley, through which a small stream finds its way into the small bay to the eastward.

*Kala-photia Rock.*—In a N.N.W. direction from the point, at about three to four cables distance, is a rock awash, called Kala-photia, from the name of a Greek ship lost there; the sea breaks in bad weather between it and the point. On the rising ground of the point, just over the terminating rock, stands beacon No. II., consisting of a large conical-topped structure, through the centre of which a stout spar supports a cone.

The cliffs of the point continue a short distance to the eastward, meeting the sandy beach, and on the rising ground above them stands a fortress and accommodation for a small garrison, the head quarters for this part of the coast. The small village is built on the slope behind the point, and little of it is seen from the sea. This locality is well marked by three old aqueducts in the hollow of the little bay to the



westward. They appear like tall chimneys of a factory, and the eastern, which is also the most perfect, has been painted in red and white bands, to correspond with the beacons.

From Kilios eastward, as far as the entrance, the shore presents a very broken outline, with small coves here and there, each with its little narrow strip of white beach, bound on either side by rocky jutting points. The shore is fringed with cliffs and may be approached to half a mile; eight fathoms are found close to the rocks.

*Osunya-Bornou.*—On the most projecting of these rocky points, called *Osunya-bornou*, stands a beacon, No. I., consisting of a large conical-topped wooden structure. This point forms the eastern side of the largest of the before mentioned coves, open only to the northward, where three fathoms are found at a cable from the shore. This is the best place hereabouts in the event of a disabled ship having to run on shore as a last resource.

*Marmersjik.*—At the head of another small cove, called *Marmersjik*, is a refuge house. This coast as far as Kilios being in a wild, uncultivated state, and almost impenetrable on account of thick shrubs.

*Cyan Rocks.*—The *Cynanian Rock*, off Cape Roumili, has  $6\frac{1}{2}$  fathoms close to, and is connected with the shore by a ridge of rocks and sand. On the summit stands a broken pillar, with a few marble slabs near, said to be the remains of an altar to Apollo, on which the mariners in ancient days offered sacrifice before risking the dangers of the Black Sea.

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## THE YACHT.

TAKE the following delightful picture of the charms of a yachtman's life. It is drawn by the cunning hand of a writer dear to thousands of English readers, in whose novels the love and the habit of the sea-life may easily be discovered. Mr. Wilkie Collins (for why should the authorship of a paper written twelve years ago in *Household Words* be a secret?) imagines himself consulting a magic mirror to decide upon an autumn tour. On the face of this mirror successively appear the scenes of former expeditions; of a mountain tour in Switzerland; a vetturino tour in Italy; and finally, of a yachting cruise in English waters. Listen to this:

"The cloud on the magic surface rises slowly and grandly, like the lifting of a fog at sea, and discloses a tiny drawing room with a skylight window, and a rose coloured curtain drawn over it to keep out the sun. A bright bookshelf runs all round this little fairy chamber, just below the ceiling, where the cornice would be in larger rooms. Sofas extend along the wall on either side, and mahogany cupboards full of good things ensconce themselves snugly in the four corners. The table is brightened with nosegays, the mantleself has a smart railing all round it, and the looking-glass above is just large

enough to reflect becomingly the face and shoulders of any lady who will give herself the trouble of looking into it. The present inhabitants of the room are three gentlemen with novels and newspapers in their hands, taking their ease in blouses, dressing gowns, and slippers. They are reposing on the sofas, with fruit and wine within easy reach of their hands, and one of them looks to me very much like the enviable possessor of the Black Mirror. They exhibit a spectacle of luxury which would make an ancient Spartan shudder with disgust; and in an adjoining apartment their band is attending on them, in the shape of a musical box, which is just now playing the last scene in *Lucia di Lammermoor*.

“Hark! what sounds are those mingling with the notes of Donizetti’s lovely music—now rising over it sublimely, now dying away under it, gently and more gently still? Our sweet opera air shall come to its close, our music shall play for its short destined time, and then be silent again; but those more glorious sounds shall go on with us day and night, shall still swell and sink inexhaustibly long after we and all who know, and love, and remember us have passed from this earth for ever. It is the wash of the waves that now travels along with us grandly wherever we go. We are at sea in the fastest, fairest schooner-yacht afloat, and are taking our pleasure all along the southern shores of the English coast. Yes, this, to every man who can be certain of his own stomach, this is the true luxury of travelling, the true secret for thoroughly enjoying all the attractions of moving about from place to place.

Wherever we now go we carry our elegant and comfortable home along with us. We can stop when we like, see what we like, and always come back to our favourite corner on the sofa, always carry on our favourite occupations and amusements, and still be travelling, still be getting forward to new scenes all the time. Here is no hurrying to accommodate yourself to other people’s hours for starting; no scrambling for places; no wearisome watchfulness over baggage. Here are no anxieties about strange beds—for have we not each of us our own sweet little cabin to nestle into at night? No agitating dependence at the dinner hour on the vagaries of strange cooks—for have we not our own sumptuous larder always to return to, our own accomplished and faithful culinary artist always waiting to minister to our personal tastes? We can walk and sleep, stand up or lie down just as we please, in our floating travelling carriage. We can make our own road, and trespass nowhere. The bores we dread, the letters we don’t want to answer, cannot follow and annoy us. We are the freest travellers under heaven; and we find something to interest and attract us through every hour of the day. The ships we meet, the trimming of our sails, the varying of the weather, the everlasting innumerable changes of the ocean, afford constant occupation for eye and ear. Sick, indeed, must that libellous traveller have been who first called the sea monotonous—sick to death, and perhaps born-brother also to that other traveller of evil renown, the first man who journeyed from Dan to Beersheba, and found all barren.

## Nautical Notices.

[Communications for the Editor of the *Nautical Magazine* to be addressed to him at 81, Poultry, E.C.]

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED. (Continued from page 436.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen [Mls]	Remarks, etc. Bearings Magnetic.]
46. Ryde Buoy	... ..	... ..	...	...	...	See Notice 46.
47. C. Elizabeth C. Ann	U. States Ditto	Fog Signals Ditto	...	...	...	See Notice 47. Ditto
48. Chin-Ha Pt Buoy Yedo Bay Bombay	China Japan India	Shoal Ditto Flag Staff	...	...	...	See Notice 48. Ditto Ditto
49. Para River	Brazil	Light Vessel	...	...	...	Position Altered. See Notice 49.
50. Wolf Rock	England	South Coast	R.	110	...	Intended on 1st Jan., at intervals of 30 seconds to show flashes: alternately red and white.
51. Quiriquina	South America	Conception Bay	R.	213	15	Est. 1st June. See Notice 51.
52. Humber	Buoys	... ..	...	...	...	See Notice 52.
53. Drago H.	Baltic	End of N. Pier	F.	...	2	Est. 1st Aug., 1869. See Notice.
54. Danube St. Vito Pt. C. Suvero	Entrances Italy, Gulf Taranto Gulf of Eufemia	Black Sea 40° 25' 2" N. 17° 9' 1" E. ... ..	... Ff.	... 150	... 20	See Notice 54. Est. 10th Aug. Varied by flashes every 2 minutes. Est. 1st Aug. Varied by flashes every 2 minutes.
55. Valencia Mole Alicante Brindisi H.	Extending Exty. of Mole Fort di Mare	... .. building ... ..	... F. F.	... 26 33	... 2 9	See Notice 55. Temporary: green. Est. 1st September, 1869.
56. Lynn Chanl. Port Erin	Alteration of End of	Buoys Breakwater Works	... F.	... 25	... 3	See Notice 56. Est. 25th Aug., 1869. Green.
57. Milazzo Bari Har. Amica Pt. Zara Port	Sicily Italy, East Coast Dalmatia ... ..	Ex. of Mole Inter. of H. Adriatic ... ..	Ff. F. F.	41 ... 29	10 ... 9	Est. 1st Sept., 1869, with red flash every 3 minutes. Est. 1st Aug., 1869. Green light. Est. 22nd July, 1869. Light altered to appear red to sea- ward, on 22nd July.
58. Josephine Bank	N. Atlantic	... ..	...	...	...	See Notice 58.

F. Fixed. F.F. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

No. 46.—A conical buoy, with staff and triangle painted *red and white* in horizontal bands and marked *N.E. middle*, has been placed on the eastern end of Ryde Middle bank in 20 feet at low water springs.

It lies with the following marks:—Southsea Castle light tower just shut in with the north-west angle of Gilkicker fort. The eastern crane on Ryde pier in line with the tower of house east of Appley house at Ryde. Wootton point in a line with Ashlake house.

It is intended for a guide in turning a long vessel after running the measured mile in Stokes bay, but it also clears the northern edge of the Ryde Middle.

The East Middle buoy, which marks the southern edge, remains in its usual position.

*East Coast.*—Information has been received, that the depth of water (as shown by the chart) within the Scullridge sand, in the fairway of Boston Deeps, and on the eastern part of the Outer Knock, has lessened considerably, also that the Spitway across the Long sand has altered its position; and as other considerable changes may have taken place in the several banks and channels, Mariners are hereby cautioned not to place too much confidence in the accuracy of the chart until the locality has been re-surveyed.

No. 47.—*Fog Signal at Cape Elizabeth, United States, Maine.*—The United States Government has given Notice, that a steam fog whistle has been erected on Cape Elizabeth, western side of entrance to Portland harbour, 267 yards to the southward of the lighthouse, from which, during thick and foggy weather and snow storms, the whistle will be sounded for eight seconds, once in each minute.

*Fog Signal at Cape Ann, Massachusetts.*—Also, that a fog signal has been established at Cape Ann (Thatchers island) light station, near the southern tower; consisting of a trumpet, blown by an engine, and gives a blast of seven seconds duration, at intervals of forty-three seconds.

The trumpet turns from the direction of the Salvages on the north-east round to the vicinity of Eastern point, and will be heard more distinctly between these points than elsewhere.

No. 48.—*Reported Shoal near Chin-ha Point, China, East Coast.*—Information has been received, that a shoal has been reported by the English steam ship *Earl King*, which ship touched on it while drawing 20 feet, lying S. by E.  $2\frac{1}{2}$  miles from Chin-ha point. Chapel island, bearing S E.  $\frac{1}{2}$  E. Lantia island S.W.  $\frac{1}{2}$  W.: position, lat.  $24^{\circ} 14' 10''$  N., long.  $118^{\circ} 8' 20''$  East from Greenwich.

*Buoy on Saratoga Bank, Japan, Yedo Bay.*—The Japanese Government has given Notice, that a buoy has been placed at the western extremity of the Saratoga Spit in Yedo bay.

The buoy is an iron red buoy, surmounted by a staff and cage, the latter 33 feet above the sea; it is moored in  $8\frac{1}{2}$  fathoms, approachable without danger on the western side; from it, Mandarin bluff bears N.N.W.  $\frac{1}{2}$  W., Perry island N.E. by E., and Kanou-saki lighthouse South.

*Flag Staff on Kennery Island, India, West Coast, Bombay.*—The Master attendant at Bombay has given Notice, that on the 15th day of May, 1870, a flag-staff with yard, 200 feet above the sea, will be erected on Kennery island N.E.  $\frac{1}{2}$  E. 87 yards from the lighthouse.

[All Bearings are Magnetic. Variations at Chin-ha point  $0^{\circ}$ . Ditto Yedo bay  $2\frac{1}{2}^{\circ}$  Westerly in 1869.]

No. 49.—*Alteration in position of Light Vessel, Entrance of Pará River, Brazil.*—The Provincial Government of Pará, Brazil, has given Notice, that the light vessel near the bend of the Braganza bank, entrance of the river Pará, has been moved from the position given in Notice to Mariners No. 17, dated 9th March, 1869.

The light vessel is now moored in 15 fathoms, about one and a half miles from the edge of the Braganza shoal; from her the point of the island of Tajoca bears S. by E.  $\frac{1}{4}$  E., and Curaza point S.E. : position lat.  $0^{\circ} 25' 25''$  S., long.  $47^{\circ} 55'$  West of Greenwich.

*Directions.*—Ships from the eastward should, as soon as the light vessel bears west, steer for her, and, passing north, steer S.W. as soon as round her.

[*All Bearings are Magnetic. Variation  $1^{\circ} 50'$  Westerly in 1869.*]

No. 51.—The light is a revolving white light, attaining its greatest brilliancy every thirty seconds; the duration of light being nine seconds, and that of eclipse twenty-one seconds.

The tower, which is round, white, and 36 feet high, is attached to the north-east corner of the keeper's dwelling. The position, as given, is in lat.  $36^{\circ} 36' 3''$  S., long.  $73^{\circ} 6' 1''$  West from Greenwich.

No. 52.—The Trinity House Notice, says in entering the Humber the buoys on the port hand are black and white striped vertically. All black buoys are to be kept to starboard. The sand Huile buoy has a staff and cage. The Cleaness buoy has a staff with same. The outer bank has a staff and triangle. The Middle has a staff and ball.

No. 53.—During the summer months, May, June, and July, and when ice renders entry to the harbour impossible, the light will not be shewn.

The light will be visible from N.N.E. round by East to S.S.W., and in clear weather should be visible from a distance of 2 miles.

*Kattegat.*—During the month of October, the following alterations will be effected in the buoys marking Schultz and Hastens shoals :—

The red and black striped conical buoy, with staff and ball, marking the north end of Schultz shoal, will be replaced by a floating beacon with red staff and ball; and the floating beacon, with striped staff and red ball, marking the south end of Hastens shoal, will be replaced by a conical buoy, with red and white horizontal stripes, bearing a staff, striped red and white, surmounted by a red ball.

No. 54.—*Lights and Buoyage, Black Sea, Danube Entrances.*—The following information has been received from Commander James F. Prowse, of H.M.S. *Cockatrice* :—

In the Admiralty list of lights for Mediterranean and Black Sea for 1869, the light numbered 506 does not exist. The light numbered 504 in the same list is wrongly placed on Admiralty Chart, Cape Kaliakra to Odessa, No. 2231; but its correct position will be found in Admiralty light list, viz., on a small sandy island south of Olinka island, in lat.  $44^{\circ} 51' 5''$  N., long.  $29^{\circ} 36' 52''$  West of Greenwich.

The common buoy which formerly marked the deepest channel on the bar of the Sulina branch of the river Danube has been replaced by a ball buoy.

No. 55.—The Hydrographic Department at Madrid has given Notice, that on 1st June, 1869, the eastern mole of the port of Valencia had attained a length of 65 yards in an E.S.E. direction. Judging by the work already executed, it is expected that in every six months an additional length of 65 yards will be completed, until the mole shall have attained a length of 437 yards.

The light exhibited from this mole is always on the angle formed by the old mole, and the one now building.

No. 56.—*Intended alteration in Buoyage of Lynn Channel.—England,*

*East Coast, King's Lynn.*—On and after 1st September, 1869, or as soon afterwards as the change can be effected, the following alteration will be made in the colour and character of the buoys marking the Lynn channel, in conformity with the general system adopted by the Corporation of the Trinity House, London:—

That the Sunk and Ferrier buoys, as well as all others on the port side, will be coloured *black and white in vertical stripes*; the Lower Roaring Middle buoy being further distinguished by a staff and ball, and the three buoys next above it being numbered upwards as before, viz. :—1, 2, and 3, respectively.

That all the buoys on the starboard side commencing with the Lower bell-buoy, on the north-east end of the Westmark Knock sand, will be coloured *black*.

No. 58.—*Discovery of the Josephine Bank.*—*North Atlantic.*—The Swedish Legation, in London, has forwarded to the Admiralty the following information respecting the discovery of a bank of soundings in the North Atlantic, by Captain Ankererona, of the Swedish Corvette *Josephine*, in July, 1869.

Whilst in the general track between the English channel and Madeira, about 80 leagues westward of Cape St. Vincent, soundings were obtained on a bank hitherto unknown; and the result of an examination places the northern end of the bank, with average soundings of 300 fathoms, in lat. 36° 51' N., long. 14° 13' West of Greenwich, and thence it extends South (magnetic) for a distance of 13½ miles, with an average breadth of about 5 miles.

Depths varying from 100 to 150 fathoms, occupy an extent of 8½ miles in a North and South direction, with a width of 4½ miles.

The least water obtained, 99 fathoms, is in lat. 36° 42' N., long. 14° 7' W., and about 3 miles from the southern extremity; this portion of the bank consisting of pieces of lava covered with coral, whilst towards the north the bottom is composed of yellow sand, intermixed with broken shells. During the examination stones were brought up, the largest weighing as much as 57 lbs.

This extensive bank of soundings is situated at a distance of 175 miles, N. 43° E. (true) of the assigned position of the Eight Stones, a danger searched for in vain by several of H.M. ships, said to be three leagues in extent from East to West, and even with the surface of the water, and which, from the date of its alleged discovery in 1732, had until lately retained a place in the Charts.

Officers commanding ships are requested to obtain soundings, when passing the vicinity of the bank.

#### COLOUR BLINDNESS.

FROM *Chambers's Journal* of January 30th, 1869, page 6, it appears that, "The infirmity known as 'colour blindness' is much more prevalent than one might suppose; and directors of railways, when selecting candidates for the posts of engine driver, stoker, or signalman, are often astounded by the number of candidates they find afflicted with it.

"It will seem scarcely credible to those who have good eyes, that three men out of five should be quite unable, at a distance of two hundred yards, to tell a green lantern from a red one. The most

astonishing mistakes have been made in this particular. Engine drivers who in broad daylight could see two miles before them down a straight line, and detect a paving stone on a rail at one thousand five hundred yards off, have been known to rush heedlessly by a danger-signal at midnight, and bring a whole train to destruction. And yet the glasses used in the *red* lanterns that signify 'Beware' or 'Stop' are always of *immense power*, and, on a dull night, ought to be clearly visible to the naked eye at a distance of at least five miles. A sailor who on the night watch will find it quite impossible to say which *glass* is up at the Eddystone or Bell Rock, may be the first next morning to cry out 'Land!' from the top of a shaking mast head."

Will this not help to explain the contradictory accounts about ship's lights in cases of collision, and should it not suggest to Captains of vessels, the necessity of care that the men who have the "look out" at night should *see true*? And may not some cases of collision be owing to this "colour blindness." W. C. P.

MR. LAMONT'S POLAR EXPEDITION.—The new steamer *Diana*, equipped for geographical explorations and scientific research in the Polar Seas, which started a few weeks ago from Glasgow, is now reported at Hammerfest, near the North Cape of Norway. Her owner, Mr. James Lamont (late M.P.), author of "Seasons with the Sea Horses" (in Spitzbergen), accompanies the expedition, and hopes to be able to approach more nearly to the North Pole than any previous explorer. All on board were in excellent health and spirits at the last account. Mr. Lamont has secured the services of Captain Iverson, an experienced whaler, as navigator, and is accompanied by an artist, Mr. Livesay, and by Dr. Charles E. Smith, of Kelvedon, who is well-known throughout the whaling service as the surgeon of the old steamer *Diana*, which was icebound in the Greenland seas for nearly fourteen months. It was chiefly owing to his exertions that the ship and the majority of the crew were ultimately preserved. Dr. Smith brought the *Diana*, almost waterlogged, into the Shetland Islands, having on board the corpses of Captain Gravell and eight seamen. Several others died almost immediately on landing. It may be remembered that the Government signified their approbation of Dr. Smith's conduct by presenting him, through the Board of Trade, with fifty pounds worth of instruments. At the same time he received from the medical profession at Hull a silver inkstand, and from the townsmen a purse of one hundred guineas. The new *Diana* is fully provisioned for twelve months at least. In case of further detention an abundant supply of game at Spitzbergen and Nova Zembla can be safely reckoned on. In his former expedition to Spitzbergen Mr. Lamont shot sixty-one reindeer, weighing on the average one hundred and fifty pounds each.

TO CORRESPONDENTS.

MR. FORBES'S packet received.

We are glad to find our good friend QUOD VERUM TUTUM so near us.







THE  
NAUTICAL MAGAZINE  
AND  
NAVAL CHRONICLE.

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OCTOBER, 1869.

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FORBES'S SYSTEM OF SAILS AND THEIR MANAGEMENT.

[THE following proposal for an entire revolution in the whole system of the sails of our shipping, as well as their cut and management, is made by Mr. R. B. Forbes, of Boston, and it is due to him to add that it is founded on principles of philanthropy, supported by the experience of a seaman; without which indeed, no secure step in this direction could have been taken. Our old "salts" will marvel when they find that he bends his sails by the foot instead of the head; that he furls them on a yard beneath instead of above them; that he clues *down* instead of *up*; that his yards are fixed, and only his sails are moveable; that in fact the whole of our time-honoured system of the sails and their management (almost coeval with the ship herself) is now proposed to be totally remodelled; they will marvel, we say, at such temerity, at such revolutionary ideas ever being entertained, and more so perhaps at their being matured and completed in their present form. Doubtless this is a bold step. But the unprejudiced seaman will at once perceive that Mr. Forbes has much reason on his side, that there are very primitive proceedings in some of our present methods, and that he has succeeded at least in effecting the same objects of setting, reducing, and furling sails, with less hands and less exposure of the lives of seamen to the dangers of their profession than the present methods admit. However, like all other systems, this new one of Mr. Forbes' must depend for its adoption on its merits. As he says, it will no doubt be met with opposition from prejudices of all kinds. But if experience proves that he has gained his great object of economy in life and property, while nothing is sacrificed in achieving those desirable ends, he will have earned the gratitude of those who go down to the sea in ships and do their perilous works in great waters, as well as the thanks of the whole maritime commercial, and nautical world.—Ed.]

Boston, August 8th, 1869.

SIR,—Since I wrote to you on the 29th May, on board the *Scotia*. I have found so much to do that I have neglected my new rig. In looking over your kind note of the 28th May, I find that you are willing to give my full description a place in your magazine. In order to carry this out, I have made three sketches suitable in size to your pages. Referring to the drawings:—

No. 1 represents top-sail, top-gallant-sail, and royal, or as sometimes designated, lower and upper top-sail and top-gallant-sail; which, for steamers, and especially large war ships, are all they ought to have, in order to keep the pole-mast of moderate length.

Now, I have to say that this mast must ship, or house, abaft; to put it anywhere else *in any ship* is to my mind like placing the cart before the horse, or mounting a hunter with your face towards his tail! Let me speak emphatically on this point, and repeat that no part of the old rig, still blindly followed out, seems to me so inconvenient as fidding before the lower masthead, in fact preposterous is a more proper word for such a proceeding, than inconvenient!

No. 2, is a side view of the masts from the trussle-trees up, showing how the yards are slung and paralled. It will be seen that the lower yard is confined to the head of the lower mast as near the rigging bands as possible, by a common tub parell; just as the top sail yards of merchant ships are confined to the top-masts.

The top-sail yard is paralled to a prolongation of the lower masthead through the cap, and this prolongation ought to be long enough to admit of slinging the yard to a crane-like attachment, so arranged as to swing or swivel on the same arc as the centre of the yard. This will prevent cramping in bracing the yard sharp; and to secure this end also, all the yards *should be slung and paralled, as near to the mast on which they swing as possible*. In point of fact my lower masthead does duty *as top-mast* because it carries the top-sail; and the mast fidding abaft is really *nothing more than a pole top-gallant and royal-mast*, always ready to house in any weather at sea or in port, and still to leave the ship in condition to set courses, and top-sails as large as the old style double-reefed sail.

I cannot lay too much stress on this point, for war steamers, and for war times, when ships may be compelled to remain a length of time in exposed anchorages. As steamers are now rigged, they cannot house their top-masts, and set anything conveniently or effectively, but stay-sails, or try-sails. Much fuel and much anxiety would be saved by fidding all moveable masts abaft.

Sketch No. 3, represents my course, and hardly needs any description, that is to say, for seamen to understand. But, it must be remembered that I am writing to enlighten men who have been fidding top-masts and top-gallant-masts before the lower-masts ever since Trafalgar. I am writing to try to enlighten men who have been "running in one groove" all their lives, and who will be very hard to convince that any innovation in the rig of ships is not a reflection upon the old scamen who fought on that day.

I will therefore say—my courses like my top-sails and top-gallant sails trice up by competent purchases attached to the head. The courses come down on deck, except in calms or baffling winds, when they may be hauled up by clew garnets and by the spar tackle.

There is a head spar one-third, one-fourth, one-fifth the length of the yard, or any convenient length to be determined by the nature of the stay, and the angle at which it may be found desirable to brace the yard. I suppose in a ship having eighty feet main-yard, twelve to fifteen feet would be enough; and the space up and down to allow clearance to a wire stay might be twelve or fifteen inches. There is also a foot spar, which may be nearly as long as a direct line across from rail to rail, and I suggest for harbour use, having suitable crutches to land it in. I also suggest that in open-deck ships, where there are guns exposed, that a deck be laid of convenient length, running across the ship before the main-mast like a wide bridge, for the special accommodation of the main-sail. And this would be a very good place for the general lookout of officers, sentries, etc.

It will be readily seen by plan No. 3, that by letting go the tricing lines outside the head spar, and hauling down on the outer downhauls, and keeping fast tack and sheet, a very large part of the sail can be spilled; and by letting go the inner tricing lines, nearly the whole sail will run down on the jack-stays to the foot spar, and to the deck. In a ship with high bulwarks, a main-sail may be let run within their shelter almost without touching a downhaul. At all events, if courses had been so fitted in the days of Falconer, it would not have been so necessary to caution seamen against the danger of first embrailing the "lee-yardarm." I am a strong advocate for cruising ships, not only to cut up the enemy's commerce, but also to make seamen. And I am of opinion that machinery and smoke stack should give way to rig, and admit of carrying the mainsail. Now, *almost everything is sacrificed to the position of the machinery and boilers.* It is no great wonder that it is so, for the present rig, especially of men-of-war, is so very inconvenient that one is not much surprised to see it made a secondary matter, not to say, *wholly ignored* by the wise engineers who place the machinery very often to the sacrifice of the sailing qualities of the ship.

But to return to my *mainsail*. It can also be taken in, during a squall or when blowing fresh, by hauling up the clew garnets—which (with the back of the sail firmly held by the foot spar tackle) will be a trifling matter as compared to hauling up an old style mainsail.

When it comes to reefing, how much easier must it be to straighten out one-half or one-third of the head at a time on deck, tye the points, and sway aloft at your leisure, than to have to do it on the mainyard. In fact, in heavy ships, when reefing courses becomes necessary or desirable, it cannot easily be done. Men on the mainyard of a first-rate, or even on an Australian clipper of 1500 tons, become almost powerless in a fresh gale. The result is that *the most valuable canvas in the ship is very often stowed snugly long before it ought to be*; if we could be sure of furling or reefing it when important to do so. Many

a good ship has been in danger on a lee shore, because the mainsail could not be safely cast loose.

With my arrangement, especially in an old fashioned ship with bulwarks, a mainsail can be reefed and set easily, certainly *safely*, when it would be very difficult or impossible to reef and set an old fashioned one.

The same remarks apply, even more strongly to a foresail, with this exception. A foresail is generally considerably smaller, and is usually carried longer than a mainsail, and according to my view, ought very seldom to require reefing if originally of proper size and shape. My topsails and top-gallant-sails bend by the foot to iron jack stays, sufficiently far from off the yard to permit furling; stops to be easily passed between them and the yard. All tricing lines, tackles, or pennants must lead from their respective sheeve cleets or blocks, or chocks, towards the slings of the yard, and come down amidships to the deck; so as to prevent cramping the yards in bracing; and for the same reason all the jack stays or leading, or guiding ropes on which the sail travels down, must not be kept too taut, because yards are not always braced to the same angle; and also because the sail will travel more freely on a slightly slack leading line.

Should it be found objectionable on account of appearance, or for any good reason to have the upper topsail (or what I call the top-gallant-yard) arranged to hoist and lower, still keeping the foot laced to the yard below, it can be done, bending the sail at the head. But, in order to make a snug furl (owing to the prolongation of the lower masthead) a portion of the foot lacing amidships would have to be conveniently arranged to "come up" at pleasure. But for all useful purposes at sea, *the standing or permanent yard will be found best*, and as the sail will not be attached to it when furled, the weight of the yard a few feet higher up will be of no consequence.

It should not be forgotten that in my ship rig, my yards and sails on the foremast (course excepted) fit on the mainmast, one stage higher up, that is to say my fore-topsail is of same size as the main-top-gallant-sail, fore-top-gallant same as main-royal; and this system of convertibility extends to the mizen as well; and my staysails and jibs as far as may be, are made to use indifferently for staysails or jibs.

It must also be kept in mind that if any one should not like this manner of setting sails, a very small outlay will put the yards in their old places, no alteration will be necessary in the rigging, except to provide sheets and haulyards, trusses to lower yards, and reducing the drop of courses.

Finally, as to the advantages of my new rig, what are they—and will the rig be cheaper? The sails will certainly set better; with less labour and wear; because the longest side is always furled or bent to the yard at its foot.

The sails can certainly be furled or reefed easier than in any old rig.

The sails will be roped all round with one sized rope, in which there will be found economy. And having only one size of rope all round will certainly tend to make the sails set better, and last longer. In trade winds, the heads may be stopped to the yards temporarily, always keeping the tricing lines in place. I propose not to have any reef in fore-topsail, because it can be carried as long as necessary whole, the sail being much smaller in proportion to the mast supporting it than the main-topsail.

The main-topsail will have a reef in it, and when reefed will be equal to an old style close reef. All that will be necessary will be to have the outer jack-stays come down perpendicularly from the head cringle, so that, when you require to reef, you have only to straighten out the head of the sail by handy-billies *on the lower-yard*, tye your points and sway aloft as far as the sail will go. A temporary bowline bent on to the head cringle may be convenient to steady the weather leech, if on a wind or with a beam wind.

In the old process of close reefing the main-topsail, every seaman knows that it *generally* requires starting the sheets, and it *always* requires a great effort on the reef tackles and buntlines, and is never very well or very easily done in a strong gale. In my new rig, the head of the sail is hauled down parallel to the lower yard, the head only requires straightening out by handy tackles to be hooked and hauled upon much more conveniently than the old process, by reef tackle and caring and by men knocking about on the extreme end of a yard. Now tye your points around a becalmed or comparatively quiet head. Of course, the sail is not expected to remain perfectly passive in a gale. But I think any seaman will admit that it can be much more easily reefed than the old style topsail.

Lastly as to the studding-sail-booms. They must go on the *lower after quarter*, as is now done on many ships, and there will be no tricing up of booms. If the yards are of steel as now common in many ships, the booms can be run into them, as is sometimes done. My yards can be let down a link or two, or taken up to accommodate the sail as it stretches; the foot and head is not limited by sheeve-holes for sheets.

For straightening out the heads of sails, as they stretch, it will be convenient to have chocks with several sheeves, or holes, and two or three eye bolts for the standing part of the tricing lines or outhauls. But I must leave these little details to the rigger and to experience to perfect. If, as I think, the general principle is correct and economical the small details will take care of themselves. I trust I have not made my description too long. In a thing so entirely novel, a full description seems to be important.

I am, very truly yours,

R. B. FORBES.

*The Editor of the Nautical Magazine.*

## NOTES.

Drawing No. 1.—*a.* Jack-stays, or leading lines for the sail to travel upon down to the yard below, to be assisted by downhauls.

*b.* Spars on head of sails.

Masts are shewn on wrong side of sails, merely to illustrate the position of the same in regard to the sails and yards.

Drawing No. 2—Shows how the yards are secured to the masts and how the stays lead forward.

Drawing No. 3—Shows the course with its head and foot spars clew garnets, supporting tackles, etc.

DESCRIPTION OF THE SHORES OF THE STRAIT OF SAN BERNADINO,  
PHILIPPINE ISLANDS.

[Translated from the Anuario de la Direccion de Hydrografia, Ano VII, Madrid, for 1869.]

POINT St. Yago (of Isle Luzon\*) is in lat.  $13^{\circ} 46' 10''$  N., and long.  $0^{\circ} 19' 50''$  west of Manila. (*a*) It is low and surrounded by rock, throwing out a reef to a quarter of a mile from it.

*Bay of San Pedrino.*—Doubling Point St. Yago to the eastward is the bay of San Pedrino or Pagapas, in which a vessel may anchor for shelter from winds from S.W. round by north to N.E., but for no further. For at some distance from the coast a shoal of sand and rock extends along it.

*Bay of Taal or Balayan.*—The bay of Taal or Balayan is next found: this is quite clean, with a bottom of sand and clay. It is shoal but yet navigable, for the trees on the shore may be approached close with thirteen fathoms of water. It is not without shoals near the shore, and yet close to the rocks there are four and five, to eight fathoms water; and from thence nearer to it three, two, one, while to the N.E. of the town of Balayan, distant three miles and two-thirds, there is a remarkable mountain called Balayan, which may serve very well as a mark for a vessel for the bay.

*Point Cazador* is the southern point of the bay, forming also the western point of the bay of Batangas, and is of a moderate height, covered with trees, interspersed with patches of Cogonal, and the coast from the bar of Taal to the said point is clean. In the interior there is a tolerably high mountain which enables it to be distinguished at a great distance. Its shores are for the most part rocky and steep,

\* Luconia: but we prefer preserving the Spanish names.—*Translator.*

so that at the distance of a cable from them there are ten, twelve, and fifteen fathoms, coarse sand and shells.

*Point Bauang.*—About N.E. from Point Cazador the coast continues, forming Batangas Bay; and at the distance of five and a quarter miles (by the chart this distance is nearly nine miles), from it is the point Bauang. The piece of coast between them is tolerably bold, and may be freely navigated at the distance of half a mile. The shore is rocky, close to, and plentifully wooded. Between point Cazador and point Bauang are two small projecting points.

*River Balito.*—At two long miles E.N.E. of point Bauang is the small river Balito, of good, fresh water, and two other small streams between them. The coast is low, the shore formed by a sandy beach with a slight bend in it.

*Streamlet of Bauang.*—From Balito the coast continues nearly east, and nearly a mile distant is the small stream of Bauang, taking its name from the town N.N.W. of it, above half a mile distant.

*River Batangas.*—About S.E. from the above streamlet the coast continues like the former, with some small sandy points of small projection, and at the distance of scarcely a league is the mouth of the little river Batangas, in which is the tower of the town. There is so small a depth in it that at low water it can only be navigated by canoes; and even at high water launches and such craft have difficulty in navigating it.

*Watering place.*—The watering place is at some distance from the mouth, inside of which it becomes divided into two streams; one of which turns eastward in various ways, passing very close to the town of Batangas, which is about three-quarters of a mile from the mouth of the river, and the other stream takes nearly a S.E. direction, and joins the river Calumpan. West of the mouth of Batangas, and very near it, is a sandbank, the greater part of which dries at low water.

*River Calumpan.*—About S.E. from the mouth of the river Batangas the coast continues low and covered with mangroves for about three-fourths of a mile, to the mouth of the Calumpan River, with a cane tower on its eastern point. It is scarcely a cable wide, and narrows upwards. The bar is from one and a half to two cables across, the greater part of it drying at low water, forming various banks, which make the entrance very difficult even with canoes. From this point the coast assumes nearly a southern direction, forming a slight bend inland with a sandy beach, and mangroves as far as a little salient point about half a league from Calumpan, in which the sandbank that commenced at the mouth of the Batangas river terminates, having continued along at the distance of two or three miles from it, and forming several banks which dry at low water.

*Point Pinamucan.*—From the same point where the above shoal terminates, the coast continues to the S.S.W. well wooded, but of moderate height as far as point Pinamucan, distant a long mile from the former.

*Streamlet of Pinamucan.*—To the east of this point the coast makes a small elbow in which is found the streamlet of the same name. This



is about fifty or sixty feet across at the mouth and decreases inwards. It is about one fathom deep at high water, and at low water can only be entered by a small boat. About a cable and a half from it there are twelve or thirteen fathoms sand, diminishing rather towards Matacot, sand and stones. Water may be had in this stream, but with considerable trouble arising from its very small depth, and the distance up from where it must be taken.

*Coast between points Pinamucan and Matacot.*—From point Pinamucan the coast continues nearly south, of moderate height, wooded, and rocky near the shore, and forming a small bay, with another salient point about half a league from it, from whence the coast continues with much sameness, nearly S.W., the distance of another short half-league to point Matacot, which is S.E. of the bay of Batangas.

*Anchorage in the Bay of Batangas.*—From point Bauang as far as that of Pinamucan the whole shore is sandy, off which vessels of any draft of water can anchor. But it is necessary to approach near to the coast in consequence of its being very steep, for at a cable and a half from it between Batangas and Bauang there are fifteen, seventeen, and nineteen fathoms mud at low water. All vessels which come to this bay prefer this anchorage in consequence of its good holding ground; and at the same time being near to the abovementioned towns. On the coasts east and west of this bay vessels may anchor if necessary, remembering that it is necessary to do so near the coast, where coarse sand and clay will be found, and sometimes rock, which renders it preferable to anchor to the northward of it.

*Marks for anchoring.*—In the interior there will be observed a mountain of a good height, with a remarkable peak on its western extreme, called San Jose. This mountain, being at the entrance of the bay, serves as a good mark for the anchorage between Bauang and Batangas, so as soon as a vessel finds herself crossing, with point Matacot about a mile, or half a mile from her, she may steer N.W. for this mark before her, and make for the above anchorage, taking care to keep her lead going as soon as she approaches the vicinity of the anchorage which suits her draft of water.

#### DESCRIPTION OF ISLE MARICABAN.

The island of Maricaban stands immediately off point Cazador, about E.S.E. and W.N.W. moderately high and covered with trees, between which there is much buri.\* On its eastern end there is a mountain which is remarkable, for being on land which is higher than any part of the island. At the western end there is another, not so high, terminating in a peak, and is very distinct from the neighbouring heights of point Santiago.

*Isle Culebra.*—The whole shore of this island has rocks off it, those

\* Our authorities do not supply us with the meaning of these words; which we take to belong to the botanical department.—ED.

of the eastern point being projecting, nearly joining those off isle Culebra, which is similarly surrounded by rocks. A reef stretches off from its northern shore to about a quarter of a mile, parts of which are above water. This reef, which is also called Maricaban reef, is N.N.W. and S.S.E. from point Cazador, and vessels passing through the channel must use great caution to avoid it.

*Anchorage of Isle Maricaban.*—Vessels may anchor on a sandy bottom off all the beaches on the northern and southern sides of this island; but it is necessary to do so close to them, for they are very bold. To the northward of the western end of the island there is a small islet extending north and south surrounded by rocks at a short distance from it, and its southern end forms with Maricaban a small channel not free from rocks, and is called Silanga of Maricaban.

To the N.W. of the point which forms this silanga, about half a league from it, is a small, round islet, which is also surrounded by rocks, and is connected with the island by a reef which it throws out.

*Isle Malajibomanoe.*—To the east of isle Culebra, near the eastern point of Maricaban, at the distance of a good mile from it, is that of Malajibomanoe which is small and flat with trees in the middle of it, and rocks all round it. The channel between them is also beset with rocks, and can only be used by small craft. The same isle Malajibomanoe throws out a reef to the east and E.N.E. to nearly a quarter of a mile, on which breakers are seen.

#### DESCRIPTION OF ISLE VERDE.

Isle Verde is steep to approach, but its beaches have rocks off them, and only off its eastern point some of them show above water about a third of a mile off.

On the north shore of this islet, near its N.W. point, is a small bay with a sandy beach, in which bay shelter is afforded from winds from the S.E. and S.W. quarters.

The islet is covered with trees; it is tolerably high and has two peaks, which are conspicuous from vessels east or west of it.

#### CONTINUATION OF THE COAST OF LUZON.

*Point Matacot*, which forms the eastern point of the bay of Batangas is moderately high, covered with trees, which show the remarkably high trees which it has in its vicinity. It is surrounded by rocks and some dry cays very close to it. To the east of the point is a little bay of the same name, as well as a little river in which small craft find shelter. The whole of the beach is covered with trees of the Maria\* order.

*Point Arenas: Anchorage.*—From the eastern point of this, Matacot bay, the coast trends nearly E.S.E. in a sandy beach, and at a short half-league from it is flat and is only conspicuous when near the shore.

\* See note on previous page.

Should it be required a vessel may anchor off it on a sandy bottom ; but care should be taken to get into a depth of six to eight fathoms, about a cable's length from it.

*Point Talaji.*—About E.N.E. at the distance of half a league further is Point Talaji, somewhat projecting from the coast, covered with trees and having rocks off it. From thence the coast is in the same direction and character for a short mile to another point like the former, on the western side, having some excellent water from a mountain glen belonging to Mount Talaji, which is north and south with the point about a mile off.

*Point Rosario.*—From this point the coast continues nearly in the same direction, with a sandy beach for the distance of two and a half miles, covered with trees in the same manner, and rocks scattered along it. From thence the coast of the same nature continues nearly east, and at a short league from it is the river Rosario, about half a cable across, and throwing out a sandy shoal about half a cable from each point of entrance. The bar is about a cable across, formed of sand and coarse gravel with some rocky ground. The channel for entering will be found between the bar and the N.W. point of entrance, and is scarcely half a cable across, having only three or four feet at low water, increasing in depth to six feet at high water, but decreasing inwards. At a short distance from its mouth the river is divided into two branches, that which comes from the north being larger of the two. In this branch fresh water may be taken from it when well inside ; but which can only be done in a canoe on account of the small depth.

*River Rosario.*—On the coast to the west of the mouth of this river there is a reef of rocks projecting from it about half a cable, at a cable length from which three, four, and five fathoms coarse sand and gravel will be found. But at the same distance from the bar of the river, a depth from ten to twelve feet will be found coarse sand and gravel.

*Point Malabrigo.*—The coast trends E.S.E. from the mouth of the said river (of the same height) with a sandy beach and some small salient points, and at the distance of five miles is Point Malabrigo, moderately high, covered with trees, and with a rocky shore.

*Anchorage.*—From the bay of Matabat to Point Malabrigo, a vessel of any draft may anchor, but the shore being very steep it should be closely approached. From one and a half to two cables off it will be found a depth of ten, twelve, and fifteen fathoms coarse sand and gravel.

*Point Lobo and Sierras of Rosario.*—From Point Malabrigo the coast continues east of the same height with rock, well wooded and at about a mile and a quarter is Point Puna or Lobo of the same character as before. This point is remarkable for some red patches in the soil at a very short distance from the sandy beach. The ground of the interior from this point is tolerably high and is called the Sierras-heights of Rosario ; and from these the said point is made from south of the island of Marinduque.

*Point Galban.*—From Point Puna or Lobo the coast continues

nearly E.N.E. with a sandy beach and some rocks, and at the distance of two miles is Point Malagundi or Galban of moderate height and wooded. It has a small rocky islet off it surrounded by rocks.

*River Sigayan.*—From this point the coast continues in sandy beaches in the same direction, and at the distance of four miles is the mouth of the little river Sigayan from which fresh water may be taken at a short distance up it from its mouth, which is very small and very shallow.

*S.W. bluff of Point Sigayan.*—The high ground from points Malabrigo and Puna terminate about the interior of this river. From its mouth the coast makes a slight bend inwards, and at about two short miles S.E. is the well wooded bluff of Point Sigayan with rocks extending a cable from it, and in the middle of the coast included between this point and the river is an estuary.

*Anchorage.*—In the coast between the S.W. bluff of Point Sigayan or Locoloco, and that of Malagundi, a vessel of any draught may anchor, but close to it as it is bold. The bottom for the most part is coarse sand with patches of gravel.

*S.E. and eastern bluff of Point Sigayan.*—From the above point the coast continues nearly E.N.E. of the same nature, and at the distance of above half a league is the S.E. front of the same bluff from which the coast follows the same contour nearly E.N.E., and at the distance of two miles is the eastern point called Bantigui. The ground inside these bluffs is rather low and thickly wooded, appearing from the neighbourhood of the south point of Marinduque almost of a swampy character.

*The coast between the same eastern bluff and a bay close by.*—From Point Bantigui the coast trends nearly N.W. very low, covered thickly with trees and rocks extending a cable from it: and at the distance of half a league is the S.E. point of a very small bay about half a mile wide at its opening and the same in depth. There is a small islet in it covered with trees and various patches of rock, which show at low water. This small bay may afford shelter to small vessels in the season of the Vendavales.

*River Nayun.*—From the N.W. point of it the coast trends nearly north, moderately high, with abundance of trees and a sandy beach. And at the distance of two short leagues is the mouth of the river Nayun, the mouth of which is nowhere less than something more than half a cable, and has a fathom and a half in it at low water. The bar of it is about two cables across, and the least depth at low water is three feet, a depth which increases both inside and outside of the river. Inside the river there are several islets covered with trees, situated about half a mile from the mouth where there are two arms: one taking a N.N.W. direction, named Tiaun, and the other a N.N.E. direction, called Nayun, both of which are of salt water.

The river Nayun will afford shelter to small craft, having from its mouth inwards two, three, and four fathoms, but which decreases towards the islets.

*Anchorage.*—In the coast included between the mouth of this river

and the small bay to the N.W. of Port Bantigui, a vessel may anchor of any draft of water, for at the distance of a quarter of a mile from it there are twelve, fourteen, and fifteen fathoms with a muddy bottom.

*Small river of Masusuvy.*—From this river Nayun the coast with its sandy beach is low, trending nearly N.E. by N. for a short league to the little river Masusuvy, the narrow mouth of which is covered by a bank of sand.

*The river Samquei.*—From thence the coast continues of the same nature, and in the same direction for two miles to the little river Samquei.

*River Sadyaya.*—And from its mouth the coast trends nearly E.N.E. for a long league to the mouth of the little river Sadyaya, in which a boat can enter at high water. At the distance of nearly two miles N. by W. from its mouth is the little town of the same name.

*Anchorage.*—On the whole of the coast included between this river and that of Nayun, a vessel may anchor in whatever depth of water that is desired, for at the distance nearly of half a mile from all parts of it there is a depth of ten to twelve fathoms, fine sand and in some places a mixture of mud.

*River Tayabas.*—From the mouth of the Sadyaya the coast continues low, with its sandy beach trending nearly E.N.E., and at the distance of about a league is the mouth of the river Tayabas, which in its narrowest part is about three-fourths of a cable across. The bar is two cables wide and in the channel left by it for entering the depth is one fathom at high water, which increases to two inside the mouth of the river. The boats which in general frequent this river are called Parados and Caracaos, and sometimes launches with guns, which all navigate it up to a place called Cota, above a mile up from the mouth. The channel of entrance can never be mistaken as it is marked by beacons placed every year by the country people.

*Watering place.*—This river from its mouth is divided into two branches, one leading direct to Tayabas, and is that which also goes to Cota; and the other to the left, called Moton. In both of these rivers fresh water is to be had at a good distance from their mouths, and in the vicinity of the coast. About N. by W. from the mouth of the river, four miles, is a town of the same name, situated on the skirt of the mountain called Corbezera de Tayabas.

*Camalanavan Shoal.*—Nearly S.W. by S. and about half a mile distant is the centre of a rocky shoal called Camalanavan, about three cables east and west, and two from north to south. At low water of spring tides a great part of it dries up, but at neaps it is always covered, shewing its presence by the green colour of the water over it.

At the distance of a boat's length from the sides of this shoal there is a depth of three, four, and six fathoms, all round it coarse sand and gravel.

*Mark for the river Tayabas and bearings on which to anchor off its western coast.*—A vessel seeking the Tayabas river or intending to anchor on its western coast for Sadyaya (which is all clear and of good depth) if the mountains of San Christoval and Tayabas be visible

should not cover the former with the western side of the latter: by following this rule she will keep clear of this shoal, observing that the best anchorage of the whole bay of Tayabas is west of the meridian of the river's mouth.

*Buenli Bay.*—From this river the coast trends east, with a flat sandy beach, making a small bend inwards as far as a flat point three quarters of a mile from it; the western part of which contains the little bay of Buenli, and a small river in which was formerly the bar Tayabas. This little bay has several sandbanks in it, on which is a multitude of the trunks of trees brought down and discharged from the said river.

*Bay of Domonelon.*—From the above mentioned flat point the coast trends N.E. of a moderate height, with sandy beaches, abundance of trees, and some projecting points; and at the distance of scarcely two miles is the little bay of Domonelon, at the head of which there are two small streams flowing into it, with an islet at the mouth called Marceaban.

*Baluarto of Caslagan.*—The coast from this bay trends nearly due east but with several elbows: and at the distance of a long half mile is a point of moderate height, and on it a fort called Caslagan, which bears from the church of Tayabas N.W. by N. In the middle of the distance between this point and the Bay of Domonelon is the little river Mallao Salado.

*Rivers Cala-an, Pitugo and Sagasan: Point Bao.*—From the above Point and fort Caslagan the coast trends nearly E. by N. making several elbows with three small rivers called Cala-an, Pitugo, and Sagasan, and at the distance of a good mile is Point Bao, of the same character as before, which forms the western point of the bay of Parbilao, and the eastern point of it is that to the south of the southern island of those called Capuluan.

*River Parbilao.*—From Point Bao the coast trends N.E. and N.N.E. towards that of Boeboc or Bantigui, and from thence N. and N.N.W. for the mouth of the river Parbilao, which is small and has a fort on it.

*Coast between Point Bao and the mouth of the river Tayabas.*—The whole coast between Point Bao and the mouth of the Tayabas is strewn with rocks even to the distance in some of half a league from it, so that ships navigating must be very careful, keeping the lead going, particularly if the vessel is one of large draft. At low water most of these dangers shew themselves in spring tides, but mostly near the coast which is frequented by canoes employed in fishing for Balato, of which there is abundance on the coast.

*Bay of Parbilao.*—The mouth of the bay of Parbilao formed by points Boeboc and the south part of Isle Capuluan or Great Parbilao is about a league wide, and narrows towards the interior. In order to enter it, a pilot becomes necessary in consequence of the reefs with which it abounds.

*Port of Laguimanoc.*—From the bay of Parbilao to port Laguimanoc the coast is formed of shingle, and reefs extend to a considerable distance from it. Vessels not drawing above twenty-four feet can

enter the said port, but great caution is necessary in doing so, for the reefs which extend from its two points very much reduce the breadth of the entrance.

*Bay of Catanauan.*—From port Laguimanoc to the bay and town of Catanauan which is thirty-six miles, the coast is beset with rocks without any channel within them. The bay is very good with a depth varying from four to eight fathoms mud and sand, and receives a good sized river into it. The western point of it is sand, the other covered with mangroves; both of them throw out reefs; the western one to a considerable distance.

Between the two points and much nearer to the western one is a shoal of sand and rock which scarcely shows at low water. But between it and the point there is a channel of three, four, and five fathoms.

#### ISLAND OF MARINDUQUE.

This island affords two ports of secondary importance, and some bays which also afford anchorage of no great security, to the east, the south, and the west according to the seasons. But at the same time their resources are but few on account of the towns in them being very poor.

*Port St. Andrew.*—The ground which forms port St. Andrew in the N.W. part of the island is high and covered with trees, and in its interior vessels may lie in it as securely as in a basin. But the entering requires great care; and leaving it is necessary to hug the south shore to avoid a rocky shoal of considerable extent with very shallow water, that it has on its northern side. It is also confined for space inside; but there is a good depth in it, and should a vessel require to go into the interior of the port she can do so by warping through a very narrow passage formed by an island which is in the middle of the channel. Having arrived in the interior, a vessel however large she may be, will not only find shelter from every wind, but will be so completely concealed that a vessel anchored in the approaches to the port and unacquainted with the inner part, it would not be easy to penetrate so far unless led by curiosity. The port has no settlement.

*Watering place.*—There is great difficulty in obtaining water at the port of St. Andrew. If it is obtained from the river it is necessary to go a considerable distance up it to get good fresh water: and if from what is called the watering place, this is a scanty stream, and although it is very good much time is required to fill a few casks.

*Port of Santa Cruz.*—Port Santa Cruz in the N.E. part of the island, on account of its small depth is only adapted for small craft, but the channels formed by the islands are quite adapted to moderate sized vessels, with sandy beaches, even for large vessels, taking care of the rocks scattered especially near the islands, as is the case everywhere in Marinduque from the Engano islets as far as the mouth of Silanga of Santa Cruz, which is everywhere fringed with rocks and coral.

This port has a town moderately provided with the necessaries of life.

*Islands of Maniguayan and Mompog.* The two islets of Maniguayan

and Mompog, and that of the port of Santa Cruz, form between them two mouths of a very little depth; and are only fit for paneos, a large kind of canoc, employed for the protection of the islands from Indians, etc.: so that when leaving this port by the large northern mouth it is necessary (navigating to the south of the island) to leave it to starboard, giving it a berth of a mile, to which distance rocks extend out, and not to depend on the deceptively quiet appearance of the water.

The eastern shore of Marinduque is rocky, these dangers extending in some parts to two miles from it, but in the southern half of the bay formed by points Solamague and Marlanga there is good anchorage, sheltered from winds round from S. to N.N.E.; near the beach there is twelve fathoms holding ground of sand.

*Point Marlanga.* Is formed by a high mountain, the N.W. shoulder of which is the mark for the commencement of this anchorage.

*Point Suban.* From point Marlanga to that of Suban the coast is very clean, and a vessel may approach to the distance of two cables and be certain of twenty fathoms sand.

Points Marlanga and Suban are two tongues of land projecting from the aforesaid mountain. From the latter a reef continues out a short distance of loose stones. Close to the south of it is the islet of Elefante, surrounded by rocks, and in the channel which it forms with Suban there is ten and eleven fathoms sand and mud, decreasing to seven over gravel. From this at about a cable and a half distance from the coast there is a depth of twenty-five to thirty fathoms mud or fine sand, as far as the shoal extending from Point Vantayan to the east of the Three Kings Islets.

*Three Kings Islets.* The channel which these islets form with Marinduque is clean, and it is hence sufficient to give a berth only to the above shoal which is of small extent. From hence as far as the neighbourhood of the port of St. Andrew, a vessel may navigate at a short distance from the beach.

*Towns of Gazan and Buae.* In this portion of coast are the towns of Gazan and Buae. This last is about a league and a half from port St. Andrew, it has a population of about eleven hundred, but no cattle nor even green herbage is to be found, and in this way only a few pumpkins.

(To be continued.)

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#### “THE MERCHANT SHIPPING BILL OF 1869.”

IN the year 1854 the various Acts of Parliament relating to Merchant Shipping and Navigation which, from time to time from the reign of Queen Elizabeth, had been enacted, were for the most part, repealed and consolidated in a new Act entitled, in brief, “The Merchant Shipping Act, 1854.” Amendments to that Act, and various other



Acts relating to merchant shipping, have since been enacted; and it is now proposed to repeal and consolidate those Acts in a new one, the short title of which will be "The Merchant Shipping Act, 1870."

Some idea may be formed of the vast and complicated nature of the interests to be protected from the fact that, simplified and consolidated as are the enactments embodied in this Bill, it yet contains no less than 18 parts, divided into 733 clauses, and 19 schedules, the whole occupying 340 quarto pages. The enumeration of even the headings of the various subjects that are thus legally provided for occupies, it will be seen, a considerable space in our pages; yet we are not prepared to say that there is any prolixity or over-legislation throughout the Bill. For it must be remembered that so enormous is the trade of this country that its merchant shipping now nearly, if not quite, equals that of all the rest of the world; and that there are thus, as it were, two British empires to be governed and legislated for—the one on the land, and the other on the sea.

At present we shall only refer to wrecks, to the means for preventing them, and to those provided for the rescue of shipwrecked persons; nevertheless, since the general welfare and efficiency of the mercantile marine, both as regards ships and men, must to a great extent indirectly affect the number of disasters at sea, it may be difficult to say what parts of the Bill, if any, do not more or less remotely influence the number of lives that are lost.

Looking then, to the general interest of the subject, and to give the ordinary reader a general idea of the character of this important Bill, we preface our remarks on those parts which more directly affect us with an enumeration of the headings of the several subjects dealt with:—

#### PART I.

##### *British Ships; their Ownership, Measurement, and Registration.*

Measurement of Tonnage.  
Registry of British Ships.  
Certificate of Registry.  
Transfers and Transmissions.  
Mortgages.  
Certificates of Mortgage and Sale.  
Registry anew, and transfer of Registry.  
Registry, Miscellaneous.  
National Character.  
Liabilities of Owners.  
Forgery.  
Evidence.

#### PART II.—*Masters and Seamen.*

Local Marine Boards.  
Certificates of Masters, Mates, and Engineers.  
Mercantile Marine Offices.  
Apprenticeships to the Sea Service.

Engagements of Seamen.  
Agreements for Service.  
Production of Agreements, Certificates, and Official Log.  
Allotment of Wages.  
Discharge, and Payment of Wages in the United Kingdom.  
Legal Rights to Wages.  
Mode of Recovering Wages.  
Wages and Effects of Deceased Seamen.  
Remittance of Wages, 'Savings' Banks, Insurance, and Annuities for Seamen.  
Relief to Seamen's Families out of Poor Rates.  
Leaving Seamen Abroad.  
Volunteering into the Navy.  
Provisions, Health, and Accommodation.  
Power of Making Complaint.  
Protection of Seamen from Imposition, Discipline.  
Naval and Consular Courts on the High Seas and Abroad.  
Official Logs.

Registration of, and Returns respecting Seamen.  
East Indies and Colonies.

## PART III.

*Safety and Prevention of Accidents.*

Regulations for Preventing Collision.  
Equipments and Safety.  
Survey of Passenger Steamers.  
Keeping Order in Passenger Steamers.  
Foreign Passenger Steamers.  
Accidents.

Carrying dangerous Goods.  
Chain Cables and Anchors.

PART IV.—*Delivery of Goods and 'Lien for Freight.*

PART V.—*Liability of Shipowners.*

## PART VI.

*Wrecks, Casualties, and Salvage.*

Inquiries respecting Casualties to Shipping.

Vessels in Distress.

Wreck.

Unclaimed Wreck.

Offences in respect of Wreck.

Salvage of Life and Salvage within the United Kingdom.

Procedure in Salvage generally.

Salvage by Her Majesty's Ships.

Jurisdiction of Courts of Admiralty in Salvage.

Appointment of Receivers of Wreck.

Fees of Receivers of Wreck.

Miscellaneous.

PART VII.—*Pilotage.*

Application.

Trinity House.

Provisional Orders.

General Powers of Pilotage Authorities.

Returns by Pilotage Authorities.

Licensing of Pilots.

Rights of Pilots.

Pilotage Dues.

Compulsory Payment of Pilotage Dues, and Exemption therefrom.

Licensing of Masters and Mates.

Offences of Pilots.

Pilot Boats.

Trinity House Pilot Fund.

## PART VIII.

*Lighthouses, Lights, and Sea-marks.*

Construction of this Part.

Management of Lighthouses and Sea-marks.

General Light Dues.

Construction of New Lighthouses and Sea-marks, by General Lighthouse Authorities.

Local Lighthouse Authorities.

Construction of Lighthouses, etc., by Local Authorities.

Control of General over Local Authorities.

Surrender of Local Lighthouses.

Colonial Lighthouses and Sea-marks.

False Lights and Damage to Lighthouses.

PART IX.—*Conservancy.*

Preliminary Inquiries.

Regulations as to Work.

Obstructions to Navigation.

Removal of Shingle.

Transfer to Board of Trade of Powers under Existing Special Acts

PART X.—*Harbours.*

Provisions applicable to Existing and Future Harbour Authorities.

Harbour Dues.

Accounts.

Officers and Servants.

Harbour Regulations.

Bye-laws.

Warehouses, Cranes, etc.

Life-boats.

Tide Gauges and Barometers.

Damage in Harbour.

Her Majesty's Customs.

Sites for Protecting Batteries.

Special Acts for Harbours.

Subjection of Harbour to General Acts.

## PART XI.

*Loans to Harbour Authorities.*

PART XII.—*Powers for Harbours by*

*Provisional Orders.*

## PART XIII.

*Local Charges on Shipping.*

Dues—General.

General Savings.

Liability for Dues.

Dues Levied on Ships not to be sold or charged.

Transfer of Shipping Dues to Harbour Authorities.

PART XIV.—*The Board of Trade.*

PART XV.—*Mercantile Marine Fund.*

Maintenance and Application.

PART XVI.—*Provisional Orders.*

PART XVII.—*Legal Procedure.*

PART XVIII.—*Miscellaneous.*

Coasting Trade.

The First Part of the Bill, comprising 108 clauses, forms a very complete code, embracing all questions concerning property in ships, their identity, ownership, registry, measurement for tonnage, etc.

The Second Part, in no less than 211 clauses, includes all matters connected with masters and seamen, and is of a very comprehensive character, as will have been seen in the above enumeration of the many subjects on which it treats. Its importance cannot, indeed, be exaggerated, for the comfort, happiness, efficiency, and characters of the vast body of men who work our Merchant Fleet, and who represent our country, and bring credit or discredit on it, as the case may be, in every part of the globe, must be very much affected by the laws by which they are governed.

The clauses in this part, having reference to the entry, engagements, and wages of seamen, are very complete.

Those for facilitating apprenticeships of pauper boys by the "Guardians of the Poor," and for their subsequent protection, are also appropriate. We should, however, have been glad if a modification of the former system of apprenticeship, which compelled every ship to carry apprentices proportional to her tonnage, and which maintained a sufficient supply of good seamen, could have been again introduced; but we presume the government have not felt able to do so, although the gradual deterioration of our merchant sailors, since that invaluable nursery for rearing them was broken up, at the desire of the British shipowner, has been a matter of general remark and regret, and as affecting the supply of British seamen should not be trifled with.

The clauses from 261 to 268, for the "Protection of Seamen from Imposition," are all that could be wished for. A valuable addition to the previously existing law on this subject is the empowering all harbour authorities to license persons to act as porters for the conveyance of seamen's luggage and effects from their vessels to their lodgings on shore, on their being discharged. This will be a great boon to the merchant seamen, especially at the greater ports, where they and their effects are commonly pounced on, and taken almost forcible possession of, by unlicensed ruffians employed by the crimps and lodging-house keepers, for the purpose of securing them and conveying them to their infamous dens. A respectable body of licensed porters might, on the other hand, be made a medium for placing the often weak and easily seduced sailor in respectable quarters, both to his own and his country's good.

The clauses from 269 to 301, for enforcing Discipline, and establishing Naval and Consular Courts on the High Seas and Abroad, do not call for any special comment. Terms of imprisonment and forfeiture of wages constitute the modes of punishment of the seamen, whilst masters are liable, in certain cases, to be superseded from the command of their ships.

We next come to one of those portions of the Bill which more especially interest us, viz., those which affect human life.

Part III., entitled Safety and Prevention of Accidents, contains 58 clauses. The first clauses under this head have reference to collisions,

the rules for preventing which are embodied in the 12th schedule, which defines the character and position of the lights to be carried in the night, the character of fog-signals and the position in which the helm is to be put on board vessels whenever in danger of coming into contact on passing each other in contrary or transverse directions. These rules—which are the same that have been in use since June, 1863, we have not space to enumerate in detail. They *appear* to be suitable and judicious, but do not seem sufficient to prevent collision.

As casualties from collision are almost of necessity always on the increase, owing to the rapidly increasing number of vessels that, as the population of the world multiplies, are engaged in supplying their mutual wants, so the precautionary means for lessening the number of such disasters, and those for preserving the lives that are put in peril by them, become also matter of ever-increasing importance. Not the least important of the clauses in this part of the Bill are the 330th and 331st, the former of which requires the person in charge of any vessel coming into collision with another to use his utmost endeavour, so far as the safety of his own vessel will allow him to do so, to save those on board the other vessel from any danger caused by the collision. It also makes him liable to the cancelling or suspension of his certificate for any neglect in this respect.

We think that this clause might, without injustice, have been made still more stringent, and have made the master of a vessel guilty of wilful neglect in this particular, liable to imprisonment. For to desert a sinking ship, and deliberately leave those on board it to perish, which has often been done, can be characterised as nothing else than wilful homicide of the most dastardly and hard-hearted kind.

The 331st clause requires a detailed account of every collision, to be immediately afterwards entered in the official log of every vessel surviving the accident, and makes the master liable to a penalty of £20 for neglecting to do so.

Then follows a most important clause, No. 332, entitled “Seaworthiness and Equipments.” It is divided into nine heads, the—

1st. Requires that every sea-going ship shall be provided with lights, and with the means for making fog-signals.

2nd. That she shall have a scale of feet showing her draught of water accurately, cut or painted on her stem and stern.

3rd. That she shall be provided with efficient boats, rafts, or other appliances for saving life, kept at all times fit and ready for use, and supplied with all requisites for use, sufficient in numbers and of the size and description proper for the service, regard being had to the number of persons carried, the size of the ship, the nature and deviation of the voyage, and like circumstances, and with a sufficient number of life-buoys and life-jackets for use in emergency.

4th. That, if carrying more than ten passengers, she shall, besides the above, be provided with a life-boat or sufficient number of life-boats, kept at all times fit and ready for use.

5th. That if built wholly or partly of iron, she shall have her compasses adjusted from time to time.

6th. That if a steam-ship, she be provided with a safety-valve on each boiler, so constructed that the weight thereon cannot be increased when the steam is up, and that the pressure of steam in the boiler cannot be increased beyond a safe and proper amount, etc.

7th. That every such ship shall be provided with proper pumps, with a hose capable of being connected with the engines of the ship, and adapted for extinguishing fire in any part of a ship.

8th. That every such ship employed to carry passengers shall be provided with twelve blue-lights or twelve port-fires, and a cannon with not less than twelve charges of powder for making signals of distress.

9th. That every coasting steam-ship carrying passengers shall be provided with such shelter for their protection as shall be required by the Board of Trade.

We deem some of these requirements of such importance as to be susceptible of comments.

We think that the value of the second would have been much enhanced if it had made it obligatory on every British vessel to have a load water-line cut and painted along its whole length, beyond which it should be illegal to immerse her; and that any officer under the Board of Trade, the Customs, or Admiralty, should have authority to detain such vessel in port until lightened, and the authorized load-line raised to the water's edge. The loss of the *London* may be attributed to the want of this law.

The third and sixth requirements form a considerable step in advance on the corresponding ones in the "Merchant Shipping Act of 1854;" but they nevertheless have the same fatal defect of vagueness which neutralized, to so great an extent the value of the latter, inasmuch as that they contain no definition of what are efficient life-boats, life-jackets, or life-buoys. An old authority says, "If the trumpet give an uncertain sound, who shall prepare himself for the battle?" So we can affirm, to a certainty, that no efficient life-boats, life-buoys, or life-jackets, will be provided on board merchant-vessels unless some definition be made of their character.

We will remark on each of these two important instruments separately:—

**LIFE BOATS.**—As regards life-boats: it is not likely that an efficient ship's life-boat will ever be generally introduced in passenger-ships, unless the character of such boats is defined,—firstly, because, there is a general ignorance on the subject; and, secondly, because ship-owners will not incur any expense that they can avoid in the equipment of their ships.

It is generally supposed that all that is required to constitute a suitable ship's life-boat is to place in it buoyant matter, in the shape of a long bag of cork-shavings lashed along each side of the boat, beneath the thwarts, or two tin or zinc cylinders, sufficiently large to prevent its actually foundering if filled with water. This, however, is a great mistake, since unless a boat floats sufficiently high to be manageable after being filled by a sea, it is nothing better than a bad life-buoy.

Also, unless the sides of a boat are completely occupied by air compartments or water-tight empty cases, of sufficient width to prevent the water in it from rushing from side to side, it will not only be unmanageable, from having insufficient buoyancy, but its lateral stability will be so slight, that any moderately rough sea will suffice to upset it. So also, to prevent the rush of water from one end of the boat to the other, and thus to afford longitudinal stability as well as additional buoyancy, the extreme bow and stern of the boat should be completely occupied to the level of the thwarts with similar water-tight cases or compartments.

Unless a merchant-ship's life-boat be made of iron, detached boxes or cases formed of slightly corrugated galvanized iron or zinc, uncovered, so as to be visible, and so as to let the air circulate round them, and portable, so that they might be occasionally displaced, examined, and painted, are undoubtedly better than mere compartments, which would be liable to become leaky. We think, however, that by far the best material for a merchant-vessel's life-boat is the corrugated galvanized iron, on the plan of the American *Francis*, as such boats are perhaps the only ones that will stand every change of weather, from extreme cold to continual exposure to a tropical sun, and from wet to dry, without ever becoming leaky; and their great strength and durability would in the end make them as cheap, or cheaper, than wooden boats of similar dimensions.

We are not aware of the exact price which such boats would cost, but efficient wooden life-boats with water-tight cases ought to be built for £1 10s. per foot.

Whether, however, made of wood or iron, an efficient ship's life-boat might be thus shortly defined:—

1st. To have the extreme bow and stern, from the floor to the level of the thwarts, each occupied by a detached metallic or other water-tight case, not less than one-eighth of the length of the boat.

2nd. To have similar water-tight cases to occupy the extreme sides of the boat, from the floor to the thwarts, each case to be not less than one-fifth of the corresponding part of the width of the boat, throughout the length, between the air-cases at the bow and stern.

**LIFE-BUOYS.**—Thus also with regard to life-buoys, a life-buoy of a very superior description has been recently patented by Messrs. Welch and Bourchier which will probably be generally adopted for the Royal Navy, but its great cost, no less than £30 makes it unadapted for general use in the merchant service. The ordinary ring life-buoy if made of solid cork and of sufficient size to pass over the shoulders of a stout man is perhaps all that could be insisted on, but it might be thus defined.

“To be made of solid cork, covered with painted calico or other cloth; the interior of the ring to be not less than eighteen inches in diameter; and to have not less than thirty-six pounds of buoyant property, *i.e.*, to be capable of supporting not less than thirty-six pounds of iron at the water's surface.”

**LIFE-BELTS.**—So again, as regard life-jackets, or life-belts, if no

official definition is given of what will be considered efficient, to a certainty the greater number of those carried on board our merchant-vessels will be comparatively worthless, and the letter of the bill will be carried out without the production of its intended effect. We can see no difficulty in the way of thus defining such a life-jacket as should be held to be efficient by the constituted authorities since really efficient ones can be made for five shillings each, which is so low a price, that no shipowner could complain of having to pay it. An efficient life-belt for ship's use may be thus defined:—

“To be made of solid cork, uncovered, so as to be open to inspection, and easy of repair. To have not less than twenty pounds of buoyant property, and to be so fitted as to be secured closely under the arms, and to be prevented from slipping down round the hips of the wearer. It should likewise be required that the life-belts should be kept in a convenient place on the upper deck, or within reach from the upper deck, so that they could be quickly obtained and put on, in the event of any sudden emergency, such as a collision, or the striking on a sunken rock.”

As before stated, we think it a great step in advance that vessels should be required to carry life-belts at all; we trust, however, that it is not yet too late to make the requirement still more effective by adding to this clause some such definition as the above. The clauses 363 to 377 refer to a very important subject—the testing of anchors and cables. Our space will not admit of our enlarging upon them. Their practical application is, however, embodied in the 374th clause, which is as follows:—

“It shall not be lawful for any maker or dealer in chain cables or anchors to sell or contract to sell for the use of any vessel any chain cable whatever, or any anchor exceeding in weight one hundred and sixty-eight pounds, unless such cable or anchor has been previously tested and duly stamped, in accordance with the provisions of this Act; and if any person acts in contravention of this provision he shall for every such offence be liable to a penalty not exceeding £50.”

As there have, probably, been few other causes that have occasioned more loss of lives and property than defective anchors and cables, the great importance of this requirement will be readily conceived.

These clauses conclude Part III. of the Bill. We must reserve our remarks on those portions of the remaining parts which come within our sphere for a future Number.

The Bill will, no doubt, pass through Parliament next Session, and it is to come into operation on the 1st of May, 1870.

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#### BRITISH MERCHANT SEAMEN.

*By a Commander, R.N.*

At the Thames Police Court, on the 9th July, 1867, Police-Sergeant Matthews stated that “the crimps, runners, Jews, touters, and lodging-house keepers invaded the docks in overwhelming hordes,

when ships were hauled into the basins, and they got on board by jumping from the swivel-bridges at the risk of their lives, and by every possible artifice. On (the previous) Saturday night, Sunday, and Monday morning, seventeen ships entered the Shadwell basin, and the officers were overpowered by 250 or more, soliciting custom and forcing their attention on the crews." This does not appear to have been an isolated occurrence, as Mr. Paget, the magistrate, indignantly declared that "such scenes and outrages were constantly practised in the docks in the district of that court." Nor does it appear that any punishment was meted out to these "250 ruffians," as they were magisterially designated, for invading the docks, carrying the ships by boarding, and robbing the sailors of their clothes, wages, and health. Indeed, the process described under the above euphemistic terms, is the ordinary means of livelihood of a large class of blackguards, male and female, not only in East London, but in other seaports. The occurrences of the 6th, 7th, and 8th July, represent what took place in the London Dock Basin alone, and on those particular days, and the public would not have heard anything of "such scenes and outrages," had the "250 ruffians" confined their depredations to the robbery and demoralisation of sailors, but that one of the number, too eager after his proper prey, had the audacity to tear the coat of a police constable, blacken the eye of a chief mate, and strike a ship-keeper. For these extraneous offences the indignant magistrate meted out very proper punishments, but for the original crime of boarding the ship, the offender escaped with as much impunity as the other 249 "ruffians."

Who would suppose, in the face of such proceedings, that a law is included in "The Merchant Shipping Act, 1854," which is intended to put an effectual stop to the career of these "ruffians?" Yet we read (17 and 18 Vict. cap. 104 sec. 237):

Every person who, not being in Her Majesty's Service and not being duly authorised by Law for the purpose, goes on board any ship *about to arrive* at the place of her destination *before her actual arrival* in Dock, or at the place of her Discharge, without the permission of the Master, shall for every such Offence incur a penalty not exceeding Twenty Pounds; and the Master or person in charge of such Ship may take any such person so going on board as aforesaid into Custody, and deliver him up forthwith to any Constable or Peace Officer, to be by him taken before a Justice or Justices, or the Sheriff of the County in Scotland, and to be dealt with according to the provisions of this Act.

But it will be observed that even if this law were put into operation, a loophole is left open, by which the sailor is still left at the mercy of these parasites, inasmuch as it is wholly inoperative *after* the ship's "actual arrival in dock, or at the place of her discharge;" in other words, *after* the ship has arrived in the position in which the law would be chiefly useful. Yet we find the Board of Trade quoting this law, so ingeniously contrived as to be worthless, in a "Notice" on "Crimping," dated November, 1868, which is posted all over East London:

With the object of putting an effectual stop to the practice of Crimping, which



has been for so long a fertile source of inconvenience to Shipowners and Masters, of demoralisation to Seamen, and of discredit to the Port, Constables are now specially employed for the purpose of arresting Crimps and other unauthorised persons who may improperly go on board Vessels arriving off long Voyages in the Port of London, in contravention of the provisions of "The Merchant Shipping Act, 1854."

It is hoped that Ship-masters will co-operate with Dock-owners and Managers to prevent their Crews falling into the hands of Crimps, and to check, as far as possible, the serious evils resulting from the presence of improper characters and unauthorised Persons on board Ships entering the Port.

The laws relative to crimping are amongst some of the many well-intentioned sections of the Merchant Shipping Acts of 1854 and 1867, for the benefit of seamen, which have proved dead letters, utterly worthless for the beneficent objects which their framers had in view.

Why, in the name of common sense, should not the Act be so amended as to include such persons as force their way on board ships when lying alongside the docks? Why should not power be given to the police to exclude from the docks, pier-heads, and wharves, all known crimps and prostitutes, who play into one another's hands, on the arrival of ships? The worthy magistrate of the Thames Police Court said, on the occasion before referred to, "If there were 250 ruffians there ought to be 250 officers or more, to meet them and drive them *out of the dock*. He knew Liverpool well for twenty years, and in the docks the police force was under the control of the corporation of the town. He never heard of such scenes and outrages at Liverpool as were constantly practised in the docks in the district of that court of London, under the surveillance of the Board of Trade itself!

Mr. Paget here draws a contrast between the London and Liverpool docks, which is amply borne out by the facts elicited in the careful enquiry which his observations induced us to make. In Liverpool it is the business of the municipal police to suppress crimping, whilst in London, speaking generally, it is everybody's business except that of the metropolitan police.

Crimping is such a remunerative speculation, that it is able to maintain agents at the entrance to the rivers and harbours, who board the vessels coming in, and promise advances of money, good lodgings, necessary clothes, and every requisite assistance, on landing, in procuring amusement, etc. They thus succeed in obtaining from the crews the only security which is asked in return, viz., the care of their boxes and bedding as well as of their persons. Thus, before the ship has arrived at the dock, the crimping arrangements have, in many instances, been completed; and it only remains for the ruffians in attendance on the quays and pier-heads to take over the charge from the agents afloat. It is against this part of the system that the 237th section of the Merchant Shipping Act, which we have already quoted, is directed. That it has been inoperative in London arises from the lack of an independent and adequate police force to secure attention to its provisions. Mercantile marine officers do not take sufficient interest in their men to take the trouble involved in prosecuting under the Act, whilst the servants of the various authorities of the port are

not so interested in the suppression of the system as to be beyond the reach of bribes. In Liverpool, the Corporation have extended the duty of the police to the docks, quays, and pier-heads, and thence to the river itself, upon which constables are employed to enforce obedience to the Merchant Shipping Act. Hence the contrast drawn by the Magistrate of the Thames Police Court, between the "scenes and outrages constantly practised in the London Docks," and the good order which prevails at Liverpool. Though the excellent arrangements of the municipal police in the Docks at Liverpool have been in existence for some years, those on the river have only been in operation since 1865. It was at the suggestion of the Seamen's Missionaries (a local agency, which is supported by the shipping interest of Liverpool far more liberally than the corresponding agency on the Thames is by the London owners), that a river police force for the Mersey was established on the 12th June, 1865.

"The primary objects of this department of the force," reports Major J. J. Grieg, C.B., the head constable, "are the prevention of crimping on the river and pier-heads; rendering assistance to masters of vessels in the event of outbreak, mutiny, or fire; the security of all traffic passing to or from shipping, or between the docks or shores on either side of the river; enforcing the Dock Acts and bye-laws relating to the transit of gunpowder; the supervision of boatmen, etc., and affording the necessary protection to seamen, emigrants, and others arriving at and departing from the port. The force consists of a superintendent, three coxswains, and eighteen constables, with three six-oared gigs. The turns of duty afloat for two boats are eight hours for each in winter and nine in summer; this duty must necessarily vary according to the state of the weather. The third boat's crew does duty at tide-time, at the pier-heads, and at the dock gates, from the time of their being opened till every ship docking has been properly berthed."

The river police constables are required to make themselves acquainted with the Acts and bye-laws which relate to their duty on the river, and to carefully observe those persons who engage in the practice of crimping; but not to enter into conversation with them, nor to identify themselves in any way with boarding-house keepers.

In the following year, September, 1866, Major Grieg was able to report that "the duties of the river police have been most satisfactorily performed, and I believe that the primary object of this branch of the service—the prevention of crimping—has been efficiently carried out, and that a moral effect has been produced on those persons who were formerly engaged in such practices."

The value of these services may be understood when we state that, during the last year (1867—8), 956 British vessels were boarded on arrival at Liverpool, 422 visited in the river, and 2,367 attended to whilst docking, 115 sailors being brought on shore in custody.

The Liverpool Docks are not policed by the companies but by the corporation, whose instructions include amongst the duties of the police so stationed that of preventing the practice of crimping ashore.

Constables are, therefore, directed to be present on the arrival of ships at the pier-heads and during the operation of docking. Where the docks are enclosed, other constables are stationed at the gates, to prevent the entry into the enclosure of the numerous thieves who subject seamen and emigrants to imposition and fraud, and where the docks are not walled in, other constables are stationed on the bridges, etc., for the removal of such persons from the quays and pier-heads. To render seamen and passengers independent of crimp porters, cab-stands are allotted in the several docks; whilst 206 licensed porters are appointed under the control of the police. Whenever a luggage porter is employed, the date, name of vessel, the port to and from which it sails, the porter's number, the number of packages he carries, etc., etc., are entered in a book, reference to which can be made at any time. We thence learn that, last year, the licensed porters took 3,038 seamen to the Sailors' Home, 4,825 to boarding-houses, 48 to railway stations, and 10 to hospitals, attending on 7,035 vessels. The importance of this licensed agency may be still further appreciated when it is added, that the porters were employed amongst 158,451 passengers to and from foreign ports, carrying 297,378 packages, to and from 61,300 vehicles. That the operations of the dock police force were not unnecessary, we find by the fact that 2,856 dock informations were laid, of which 79 were against unlicensed porters and 55 for boarding vessels without permission, whilst 320 persons were apprehended for offences against the Mercantile Marine Act, and 1,279 sailors were apprehended, either in the town or in the docks, for drunkenness and other offences growing out of it.

We thus find that whilst, at Liverpool, cab-stands and licensed porters under the control of the police are provided, and alone admitted into the docks for the removal of the luggage of passengers and seamen; in London these are necessarily performed by the crimping agents, and others under no control whatever. No cab-stands are permitted in the London Docks, and the passenger or sailor has no choice of honest help in removing his baggage. Whilst the metropolitan police are excluded from the dock area, the constables of the various dock companies are usually employed to oversee the discharge or embarkation of cargo, and are seldom stationed at the basins and dock entrances for the protection of living men and women. The irregularities in the London Docks have been further increased of late, by the employment since 1st January, 1868, of an inspector and three constables of the metropolitan force at Gravesend, who have made a raid amongst the crimping population on the river, which has driven them to safer quarters in the docks, where they are out of reach of the police. We have thus changed the site of operations of a large body of the river crimps without permanently destroying their trade.

Leaving this matter of suppression, let us enquire more particularly into the causes which give rise to, and sustain this evil agency.

The obvious questions here arise—Who are these crimps? Why do they "risk their lives" by "jumping on board from the swivel bridges?" Why don't the officers and crews of the different ships keep

them out? And why do sailors fall a helpless prey to such ruffians? On the proper reply to these questions depends the great cause of the social degradation and moral debasement of our merchant seamen. If crimps were not a supposed necessity crimping would not pay; and if it did not pay, we may be sure that it would soon die a natural death. It cannot be too much borne in mind that, not many years ago, crimps were equally busy at our naval ports, and that men-of-war's men were an equally profligate, debased set of men; but the circumstances attending payments and engagements in the Royal Navy have been so altered, and such sharp measures adopted, that the race of crimps in Her Majesty's ships has almost become extinct. Cannot the Local Marine Boards, shipowners, and officers suggest such measures as shall do for the mercantile marine, what has been so well done for the Royal Navy? For really it is time that some one set about it. There the many shipowners and officers fully alive to their moral responsibilities, who are nobly doing their part so far as the crews of their individual ships are concerned, and who reap a rich reward, not only in the improved moral conduct of their men but, through them, in the pecuniary results of their voyages. It is to be regretted that these worthy employers stop short at this part of their duty, and fail to extend their interest to the moral and physical condition of the whole sea service. Indeed, there is some room for complaint, that whereas they strongly oppose the well-intentioned though perhaps crude suggestions of philanthropists, they do not themselves come forward to suggest measures which might attain the same ends by less objectionable means.

Hence it is that the sluggish action of officials at the Board of Trade, who may naturally be expected to prefer peace and quietness to the uncertain labours of legislative interference, has a too readily accepted plea in the absence of ship-owning pressure on behalf of the neglected and oppressed seaman. Until it is fully understood that the vices of the seaman are but the fruits of the mismanagement or misconduct of his superiors, and the disgrace which attaches to his evil doings be laid to the charge of the proper persons we have little hope of shaming the Local Marine Boards, his employers, and his officers into a due sense of their moral responsibilities. Seamen are eminently imitative creatures, and under one set of employers and officers they will be found a respectable, well-conducted body of men; whilst the same persons, under other conditions, will become as thoughtless, reckless, profligate as the influence of their superiors is calculated to make them. The unprofitableness of boarding the ships belonging to certain employers is so well known by crimps that their trade must be slack when they waste time by doing so. When the crews of such employers are paid off the crimps rarely follow them up, and the conduct of the large numbers of seamen at the Sailors' Homes is sensibly affected by their wholesome example.

Those shipowners have a due regard for the moral qualifications of the officers whom they engage, and insist on their evincing a lively interest in the temporal and spiritual well-being of their subordinates.

In truth, officers are the most effective seamen's missionaries, and the work of spiritual improvement can only be thoroughly conducted through this agency. The desultory visits of clergymen when the ships are in port are chiefly effectual, in proportion as they succeed in awakening the officers to their moral responsibilities. On the other hand, we are assured that the misconduct of the officers who take up their quarters in the neighbourhood of the shipping, is more disgusting than that of their men. Their language is more obscene and blasphemous; their practices more vicious and more obtrusively vulgar, and their example more pernicious and violent. It is, however, to be observed that the gentlemen of the mercantile marine would probably betake themselves, when paid off, to their own houses which are at some distance from the waterside, and that the depraved officers who thus outstrip all competitors in the vile race of foul and disgusting language and conduct, are not necessarily the majority.

But we understand that short-sighted employers, anxious to run their ships cheaply, frequently prefer brutal, low-lived officers, because it is falsely supposed that they can force more work out of their subordinates than intelligent gentlemen.\* The fallacy of this supposition is evident enough to every shipowner who has made fair trial of the contrary course inasmuch, as the brutal low-conditioned officer depraves his men not only morally but physically.

Thus, the stamina becomes weakened and the men become incapable of great exertions, and succumb to diseases which are either unknown to, or exercise a less injurious effect upon the more moral, well-conducted men. A slight addition to the examination for second mates would exercise a considerable influence in preventing such ill-condition men attaining the position of officers at all; whilst the higher voluntary examination for extra-master's certificate, which we have before recommended (vol. lxxix. page 185), should carry with it honorary rank and uniform, with increased magisterial powers. These would hold out an inducement to superior masters to qualify themselves for a higher position than that of mere foul-mouthed "drivers" of seamen. Whilst all experience teaches that the proper sphere for the moral influence of seamen is on board ships at sea, and that their character is for good or evil by their officers, we are bound to afford them, when in port, all reasonable protection from those parasites who live upon their vices, and at the end of every voyage rob them of money, clothes, and health.

The crimp, according to Sir Henry Tracy, speaking in the House of Commons, April 9th, 1861, is a man who, in a few words, may be described as one whose great object is to obtain, in one way or another, all the means that a sailor possesses. No sooner is a ship paid off than the breath of the crimp is felt on the sailor's shoulders; he presents himself, as he fancies, in the most enticing colours; his

\* Whether this be so or not, we have already considered the principal reason why a preference is given to certain officers is that they are to be had far cheaper than "intelligent gentlemen."—ED.

countenance beaming with the hospitality of his invitation, he makes his appearance with a bottle of drugged spirits under one arm, and generally a female accomplice under the other. Now, when you remember that the sailor is fresh from sea, full of health, and flush with money, you will not wonder that he often falls, not only a willing, but an easy victim to the wiles of the crimp. No sooner does he land than, if he yields, he is at once taken to the crimping-house, and there, probably, robbed of all he has.

The work of the crimp is generally confined to foreign-going seamen, of whom, including repeated voyages, about 120,000 enter the Thames annually, whilst the crews of coasting vessels are usually left untouched. Coasting seamen are commonly engaged continuously in the same vessels, receive more frequent payments, are more generally married men, and are more accustomed to associate with relatives and neighbours at the port from whence they sail. They are not, therefore, so exposed to the temptations held out by crimps, nor are they such rich prizes, when caught, as crews returning from long voyages with large arrears of wages.

The moment a foreign-going ship arrives in the docks the duties and the wages of the crew cease, and they are then not legally but *practically*, obliged to leave the ship. In this way at the end of every voyage, the crew are instantly disbanded and thence begin all the evils of crimpage. Each man may have from six to twelve months' wages to receive, amounting to from £20 to £50, according to his position and the length of his engagement. But though discharged from the ship as soon as secured, the crew do not receive the payment of their wages until a period has elapsed varying from one to five days. They have then to present themselves personally at a public office near the docks to sign a "release," and receive their back pay, the *interest* of which has meanwhile been accumulating for the benefit of the employer.

In the interval between the day of discharge and the day of payment, the crew are out of work and out of pocket, obliged to remain idle at the port of arrival, and unable to go home to their friends. It is obvious, that during this period the men must eat, and drink, and sleep somewhere; they must also obtain presentable 'shoregoing' clothes; and landing after a long voyage, like frisky dogs let off the chain, they must have amusement or recreation of some kind. But they are all this time utterly penniless, for though one of the many well-intentioned but inoperative laws in the Merchant Shipping Act directs that one-fourth of the estimated wages should be given to the crew on the day of discharge, *this rule is rarely observed*. Here, then, are large demands, which the crimp undertakes to supply. There is, of course, a certain amount of risk in advancing food, lodging, clothes, and the means of amusement to a thoughtless, reckless, and not too honest sailor, which can only be covered by a literally *personal* security, and which calls for a proportionate return. The crimp who offers all these necessaries, accordingly takes charge of the baggage and person of the sailor, and endeavours to make them yield as considerable a percentage as possible.

The crimp, then, is a lodging-house keeper, who frequently keeps also a licensed public-house, and retains in his pay a variety of agents of both sexes, whose duty it is to watch the arrival of vessels, and each to offer their various necessaries to the crews. The trade generally pays well, some of the principal crimps in the port of London being able to keep their country houses, and to bring up their families in comparative affluence! Amongst the agents enumerated by the police-sergeant as comprising the "250 ruffians" who boarded the ships arriving in the London Dock Basin on the second Sunday in July, 1867, were the "touter" whose business it is to attract the sailor to his master's lodgings by the judicious loan of money, the offer of grog or soft-tack (bread); the "runner" who volunteers to carry his box of clothes and bedding free of charge to the same destination; the "Jew clothiers," who offer ready-made garments with the same object; and the female department, which appeals more directly to his passions, each of whom must obtain remuneration indirectly from the sailor.

Beset by importunate friends anxious to supply all his most urgent wants, and without any other possible means of obtaining the requisite assistance, what is there for the sailor to do but to yield to the solicitations of those who may appear to him the least objectionable friends? He accepts, mayhap, the offer of clothes, or of him who, armed with a *forged Sailors' Home card*, wishes to carry his baggage, the sailor not knowing that all are working in concert to drag him, under specious pretences, into the same net. Arrived at the lodging-house he finds himself the man of the hour, all his wishes anticipated, everybody anxious to do him service, and pressing on him those drinks and other refreshments from which he has been so long debarred. Old experience may make him wary, but he cannot hold out for ever. He is taken to various amusements, or others are found for him in the long-room behind the house of his too hospitable retainer. The female agent entices him "to have a drink," which is carefully drugged. The excitement once begun, the rest follows, and ere the day for receiving his wages comes round, enormous bills have been run up, of which he knows nothing, and he is so involved as to be hopelessly at the mercy of his captors. When pay-day comes, the crimp takes care that the seaman makes his appearance sober enough to sign "the release," and pass the scrutiny of the shipping master; and when the money is received, the orgies are recommenced and continued until it is all said to be expended, and the clothes and bedding pawned. Even then, the crimp has the means of deriving further profit to cover the risks of the trade. Money and clothes being gone, and a sufficient deficit made to appear against the sailor, he is then compelled to join a ship about to sail, assigning the first month's wages to the crimp, by an "Advance Note" upon the owners. At sea again after a week or so of continued debauch, without clothes or strength to withstand the exposures incidental to our northern seas, he is probably soon found to have contracted diseases which incapacitate him for active labour, and call for medical treatment which is not procurable. Such is the common story, varied, no doubt, considerably, in the details, but ever resulting

to the seaman in the same loss of money, clothes, and health, of character, self-respect, and love of country, the same loss of labour and risk of property to the shipowner, the same loss of credit and of estimation to our Protestant Christianity, of which these seamen are the only exponents to a great part of the world.

It may here be asked, What are our Sailors' Homes doing? They are carrying on a most successful war against the crimps, up to the limit of their means, by employing agents to visit the ships on arrival, to offer food and lodging to the penniless crews. But what are the few agents their means will admit of, in comparison with "overwhelming hordes" of thieves and prostitutes, plying their calling under the general name of crimps, in the docks? Suppose such "overwhelming hordes" of ruffians were admitted to our railway stations on the arrival of the trains, and the cabs and authorised porters to be withdrawn, what chance would the railway passengers and their luggage have against them? Yet the dock companies permit within their premises, with impunity, what no railway company would suffer for one day. Nevertheless the agents of our Sailors' Homes do succeed in rescuing many seamen from the grasp of the crimp, and aid large numbers of respectable men to elude the "sharks," by providing most of the same necessaries, with the addition of others more really helpful to the newly arrived sailor. It is to be regretted that their means do not admit of a larger organisation for visiting ships, as it is evident that the dishonest gains of the crimp must enable him to work to far greater advantage than a Home can do, unless it be largely subsidised by voluntary contributions. No Home can outbid the crimps if it be regarded as a self-supporting institution, inasmuch as it is only allowed to take from the sailor that which is honestly due, charging a fair percentage, whilst they take all he can possibly be robbed of.

The Home is a castle of honesty and fair dealing, set down in the midst of a hostile population of thieves, with whom it must be ever at continual war; and whilst thieves exist in "overwhelming hordes," and have no scruples as to the means they employ, the agents of the Home are few in number, and restricted to the use of honest weapons. We cannot then be surprised if, in a free country, where criminals are treated with all the immunities of honest men until foolish enough to be caught red-handed, the Home saves only its thousands, while the crimps destroy their ten thousands. With 11,000 foreign-going ships entering the Thames annually, besides the still more numerous vessels engaged in the coasting trade, it is evident that a very large staff of porters must be employed by the Home, if they are to be on board of each vessel on arrival, in whatever dock, at the same time as the "overwhelming hordes" of crimps. Thus in the year ending the 30th April, 1868, of the 120,000 foreign-going seamen and boys, who entered the port of London, including repeated voyages, but exclusive of 90,000 coasting seamen who arrived in repeated voyages, we learn that the Wells Street Sailors' Home lodged only 11,037 persons, of whom, however, 3,467 were guests of bygone years, who thus evidenced their



“partiality for the comforts and blessings dispensed” by that institution. “All the hostilities,” says the Report for 1868, “arrayed against the beneficent operations of this Home, springing up and reinforcing one another with persistent animosity—as they have done from its infancy, and still do in its maturity—have failed to alienate the friendly feeling of those seamen who have tasted how good these interventions are.”

In contrast to the robberies of the crimps we learn that, in this single institution, £90,672 of sailors' money was lodged in the hands of the cashier, whilst “£33,083 has been remitted by the sailors, either for their own immediate use or that of their relatives, through the medium of money orders, issued under the authority of the Board of Trade, and £4,434 invested in the Savings' Bank subject to the same control. \* \* \* 10,340 sailors have attended public worship at the Seamen's Church adjoining, and 15,159 assembled at the Prayer Meetings at the Home.” But notwithstanding these successes, we shall presently show that during the period of idle waiting which elapses between the days of discharge and of payment, the crimps sometimes succeed in enticing from the Home the men thus rescued!

The Sailors' Institute in Shadwell, which is devoted to the spiritual and intellectual improvement of seamen, and does not lodge or feed them, is also doing an excellent work. During the last year 49,463 seamen visited its coffee and reading rooms, whilst 310 religious services and 186 temperance meetings were held in the hall. This valuable institution is under the direction of the British and Foreign Sailors' Society, which employs thirty-two missionaries at twenty-seven different seaports.

It would be a mistake to suppose that all sailors' boarding-houses are kept by men of the crimp class. On the contrary, many of them are very respectably conducted, and are in just estimation amongst well-disposed seamen, as affording them a greater degree of privacy and comfort than the more palatial Homes. And as it is quite impossible for the Homes to accommodate all the sailors between their different engagements, even if they were situated near enough to the widely scattered docks on both sides of the harbour, it might be judicious to encourage respectable boarding-masters by a system of police licences, issued to those who reside within certain districts. The encouragement of such boarding-houses might have a good effect upon the Homes, by creating a healthy emulation, which would serve to stimulate the managers of these institutions, and prevent them resting on the laurels won by their predecessors. Sailors' Homes might be much more attractive and useful institutions if their managers would study the etymology of the word “Home,” and instead of reproducing a ship on dry land, were to endeavour to supply home-like tastes and comforts. They have often too much of the quarter-deck and too little of the fire-side in their strait-laced regulations, and sailors who want, above all things, during their few weeks on shore, to forget everything ship-like, and to cultivate everything home-like, are apt to prefer the snug parlour of a respectable boarding-house with its highly coloured

pictures and trivial nicnacs, to the colourless walls, straight-backed, hard-bottomed chairs, and backless forms of the great palatial barrack, which assumes the name without the attributes of "Home." No doubt coloured pictures of rural scenes, flowers, and evergreens cost money; but have the managers ever suggested, in their reports, their willingness to receive contributions for decorative purposes?

Yet who amongst us would associate homely ideas with our own residences if they were constructed with great workhouse apartments, without anything to please the eye or distract the mind after the day's labours? What gin-palace would ever succeed if it was conducted on such principles? and a Home to be really attractive to large numbers, must copy all that is harmless and good from such places of resort, if it will cater for the tastes of those whom it is intended to serve. Then a Home must have both daylight and evening recreations, suited to the tastes of its occupants. Concerts and other musical attractions, magic lantern or otherwise illustrated lectures and readings of not too grave a character for the evening. Out-door play-grounds, etc., should be added for the day, for it must be remembered that the merchant sailor spends the greater part of his life in the open air, and if his loitering about can be effected within the grounds of the Home, an element of temptation is avoided.

In short, the whole of the seaman's time at the Home being utterly idle, agreeable occupation suited to his tastes should be found for him.

The libraries and reading rooms, which are commonly the principal if not the only recreation allowed, are usually so over-regulated that very few of the boarders make use of them. More care, in fact, is taken of the apartment and its contents than of the object for which they exist. Yet the managers do not ask themselves why this principal place of amusement is unoccupied; nor do they strive sufficiently to provide other attractions. In making these strictures on the management of these noble institutions, we wish simply to increase their efficiency, by making them less like workhouses, and more like that most sacred, most happy, most cheerful, and most comfortable abode of freedom and virtue, the ideal Englishman's *home*.

Elliot, Gambier, Justice, "Nemesis" Hall, and other leading founders of Homes have been great benefactors not of seamen only, but, through them, of the nation at large, and their names ought to be held in grateful remembrance by every lover of his country. The institutions founded by them have done more than any other single effort to civilize seamen, and to shame their officers and owners into some little degree of consideration for their physical, mental, and spiritual condition. That more has not been accomplished is due, on the one hand, in great measure to the general ignorance of their usefulness and of the necessity under which they labour for gratuitous pecuniary support; and on the other, to the rather nautical ideas of discomfort and discipline which obtain in the direction. We trust that both these evils will be redressed, the one by the benevolent public, whose attention will we hope be drawn to the need for their

help, the other by a more liberal, less self-satisfied, and ever advancing management. Because so much has been done, we feel satisfied that very much more could be done, and it becomes every thoughtful Christian Englishman to promote and encourage these Homes.

We have thus far looked upon the seaman as he stands alone, but in many cases he has a wife, a mother, or a family dependent on his labours. If these happen to reside near the port of discharge, they provide the means of locomotion, food, and lodging for the dismissed sailor, during the period of penniless waiting for wages, and the crimp consequently loses his prey. But it often happens that foreign-going ships are ordered to return to a different port from that at which they fitted out, and the married seaman, with his family at Hull, finds himself discharged penniless at the port of London or Bristol, or the London seaman finds himself landed amongst strangers at Glasgow. In such cases, we fear that the crimp's trade is often too successfully plied, to the loss of the whole of the wages to the expectant family, The Rev. Dan. Greatorex, chaplain to the Well Street Sailors' Home, London, in a letter which is included in Captain Henry Toynbee's excellent pamphlet on "Our Sailors' Wants, and How to Meet them," mentions "several instances in which the wives and families of men have suffered most terribly" from these causes. In the instances given by him the agents of the Sailors' Home had succeeded in their benevolent work of rescuing sailors, by bringing them and their baggage, free of expense, from their ships, on discharge, to the Home and were boarding and lodging the men on credit, whilst awaiting payment of their back wages before they could proceed to join their families. But the public street outside the door of the Home is constantly perambulated by the female agents of the crimping houses, watching every movement of its more recent arrivals, with a view to enticing them to places of amusement and thence to their masters' apartments. These people are known to the police as gaining their living by the robbery of sailors. But in a free country criminals must be caught in the possession of the stolen goods, and not merely when "breaking open the area gates," as has been evidenced by a recent decision. The agents of the crimps are permitted, therefore, to ply their trade in the neighbourhood of the Home in the same open manner that it is plied in the docks. Can we wonder, then, that, considering the sudden change from hard life on shipboard and the consequent craving for excitement in the first idle days on shore, the sailor should, during those four or five days' waiting for his wages, be enticed, to the ruin of himself and family?

Amongst the cases cited by Mr. Greatorex are the following:—

1. A man had been absent about eighteen or twenty months. He arrived at the Home and entered as a boarder. He had not been in many hours before the crimp tailors had secured him. The result was that he was kept continually in a state of intoxication, so that, by *the time he was paid off*, his money was wholly mortgaged. His wife lived in Glasgow,—she wrote to him; but, alas! he had no money to pay his fare. His wife sent him £3 (which she had to borrow) to enable him to run down. This even, was spent without going to his wife, and he was obliged to re-ship without going home.

2. A very decent seaman came to the Home *to wait to be paid off*. He went on well for *three* days ; but he was led to go to Wilton's Music Hall. He took more than was good for him. The result was, he spent the night with some female whom he met there, lost the major part of his money, and dared not go home to his wife and family, who were at Liverpool. He sent them, I think, two pounds, after being absent some *ten months without leaving them halfpay*.

3. A man, whose wife lived some few miles from London, was seized by the crimps, taken to a lodging-house, and there kept in a continual state of intoxication, only being once, for some days, partially sober—sufficient to be paid off. He lost all, and was obliged to go to sea without seeing his wife and family, or sending them a sixpence. I heard from the poor wife, who said she was starving.  
\* \* \* \* I need not mention more, as such cases are numerous, and well known to those who have any acquaintance with seamen and shipping offices. *Scarce a week passes but some poor wife comes up to look for her erring husband.*

A sailor must not have to wait at a Sailor's Home or boarding-house until he is paid off before he can go to his family. The chief mischief arises within twenty-four hours of his first putting foot on shore.

All evidence agrees that if the sailor could, on the day of discharge, be transported from his ship to any spot more than a mile from the beach, with his pay in his pocket, all the danger would be escaped. It is the waiting and idling in the crimping locality, at considerable personal expense, which breeds the mischief. The "Report of the Committee for Improving the Condition of Merchant Seamen," considers that the untold miseries to which seamen and their families are exposed, from the crimping system, are mainly attributable to the delay which arises between the discharge of the crews and their payment ; it is, therefore, recommended in the Report, that pay clerks be attached to the shipping offices, in whose presence the men should receive the portion of their pay (one-fourth) legally due to them ; and if the seamen wish to go home, the pay clerk should send the remaining pay and papers after them, the men signing provisional receipts to show that they have no objections to make to the charges made against their wages. This recommendation of the committee appears to be one of those which owes the unanimity of its reception to its incapability of meeting the requirements of the case. It is a sacrifice of principle to an expedient, adopted with a view to ensure agreement amongst the signatories.

Many experienced persons have suggested that the great evils arising out of the delay in paying wages would be best met by such an alteration of the law as would continue the services, provisions, and pay of the crew up to the day of final settlement. The effect of such a regulation would be, that the shipowner would endeavour, by every means, to shorten the time between the arrival of the ship and the payment of the crew. Such a system of accounts would in consequence be inaugurated, as would enable the master to calculate the wages of his men before arriving in harbour, and the corresponding allotment deductions, to be furnished by the agent on shore, could be subtracted in a few hours, so that the crew might be both discharged and paid off on the day of arrival. This would be both a reasonable and just arrangement, in the interest alike of owner and crew. It could not, at the utmost, add more than one day to the wages, for which services would

be given, whilst it would save seamen the unjust expense for board and lodgings now forced upon them whilst awaiting payment. Crimps or other persons encouraging seamen to leave their ships before being duly discharged might then be debarred the power of recovering debts contracted prior to discharge. And if the payment took place within the docks instead of at a public office outside, it would be possible for owners, Sailors' Home authorities, or other well-disposed persons to charter omnibuses to carry the crews from their ships to the railway stations, as is frequently done when men-of-war's men are paid off. Thus the crimps would be almost entirely evaded, and the deficient accommodation in Sailors' Homes obviated.

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*Report of the Committee of the Society for Improving the Condition of Merchant Seamen.* Harrison and Sons, 1867.

*Our Sailors' Wants, and How to Meet them.* By Henry Toynbee, F.R.A.S. Nisbet and Co., 1865.

*Report of the Sailors' Home, Well Street, London Docks, E.* 1868.

*Return relative to the Deaths of Seamen in the British Merchant Service during the year 1867.*

*Annual Reports of the Police Establishment, and the State of Crime, Liverpool.*

*Instructions for the Liverpool Police Force.*

[We gladly assist in spreading the circulation of this important paper from *Frazer's Magazine*, and shall add the remainder in our next number.—ED. N.M.]

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#### SHIP'S POSITION BY TWO OBSERVATIONS OF THE SUN.

Dartmouth, September 10th.

SIR,—The following method of finding a ship's position by two observations of the sun. was, at my suggestion, recently tried by an officer on board one of the ships employed in towing out the Bermuda Dock, and the results given by it were found to be very satisfactory:—A set of sights for longitude by chronometer was taken at about eight a.m., and another two hours or so after; each observation being worked out with the latitude by dead reckoning in which the ship was at the time it was taken. The first longitude was brought up to the time of the second observation by allowing for the run in the interval, and both longitudes were laid down on the parallel of the *second* latitude.

From each position, the sun's bearing (taken from Burdwood's Tables), was laid off with a protractor, and other lines were drawn at right angles to the bearing lines through the two points already laid down: then where these lines intersected was the true place of the ship.

To make this more clear we will suppose the following case:—At

eight a.m. to-day, being in latitude by account  $48^{\circ} 20' N.$ , we took sights for longitude, which placed us in  $9^{\circ} 30' W.$ , at the same time the sun bore  $S. 70^{\circ} E.$  We then sailed S.W. twenty miles till ten a.m., when a second set taken at this time placed us in  $10^{\circ} 15' W.$ : our latitude by D.R. was now  $48^{\circ} 10' N.$ , and the sun's bearing was  $S. 30^{\circ} E.$  The first longitude corrected for run was  $9^{\circ} 45' W.$  Now turning to the chart, the two longitudes were laid down on the parallel of  $48^{\circ} 10'$  (the second latitude) being marked (1) and (2). Through (1) was drawn the first line of bearing,  $S. 70^{\circ} E.$ ; and through (2) the second,  $S. 30^{\circ} E.$ ; also through (1) and (2) other lines were drawn at right angles to the bearing lines. Then where these second lines intersected was the true place of the ship at the second observation. The above method will be found very simple, and as there are no distinctions of cases, it may be easily practised by any one who can take and work out a chronometer. When the sun is not too high, the bearings may be taken with the Azimuth Compass, in which case they must be corrected for Variation and Deviation in the usual way. The second chronometer should not be taken until the sun's bearing has altered to the extent of three or four points, nor after it has altered more than twelve points. The nearer the bearings are at right angles to each other the more reliable will be the results.

I remain, Sir, yours faithfully, A. C. JOHNSON.

To the Editor of the *Nautical Magazine*.

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#### THE KIDNAPPING FOR QUEENSLANDERS.

SIR,—As a friend of the liberties of mankind, and consequently a foe of *all* oppressors, allow me to thank you heartily for your persistent exposure of the infamous practices of the kidnappers of Queensland. The barbarities detailed in your last Number, as perpetrated on the defenceless inhabitants of the islands in which the missionary has begun his noble work, must surely awaken the intense indignation of every British heart, and not a moment should be lost in sending out proper and efficient agents to put an end to such atrocious deeds.

The Governor of Queensland should be at once made answerable for his share in the detestable endeavours to originate such an aggravated form of slavery as that described in your two last Numbers. No necessities of *agriculture can* extenuate such horrible proceedings by the colonists of Queensland for the supply of labour, and the whole civilized world would cry out against the legislature of the mother-country if it could look with the *least* allowance on such diabolical treachery towards the unsuspecting savages of those distant regions.

Bitterly indeed are we made to feel that "the love of money is the root of all evil," and that it is becoming so fearfully rampant amongst some sections of Englishmen, as to extinguish all the sentiments of honour, humanity, and decency. But let us not cease to protest

against the nefarious deeds of the mammon-worshippers. Let the modern Moloch be overthrown, and his blood-stained myrmidons scattered without delay. Most truly yours,

A LOVER OF JUSTICE.

*To the Editor of the Nautical Magazine.*

#### THE KIDNAPPING OF SOUTH SEA ISLANDERS.

THE *Sydney Morning Herald* announces that the Governor of New South Wales, with the advice of the Executive Council, has appointed a commission to inquire into and report on certain cases of alleged kidnapping of natives of the Loyalty Islands in the years 1867-8, reported by the Governor of New Caledonia to the Secretary of State for the Colonies, and generally to inquire into and report on the state and probable results of Polynesian immigration.

According to the *Melbourne Age* there has been but one feeling of disgust and indignation among Victorians towards the practice of deporting Polynesian islanders and selling them into slavery under the pretence of "civilising" them, even before people were aware of the cruelty practised.

The arrival in Melbourne of Hugo Levinger, supercargo of a vessel in which three natives were murdered, during an attempt at kidnapping them off the Island of Paama, brought this feeling into practical effect. It adds, Levinger was put upon his trial for causing the death of one of the unfortunate Polynesians, the Crown retaining the power of prosecuting in the other cases should there be an acquittal. In the course of the trial the presiding judge intimated that if the jury did not find the prisoner guilty of murder there should be an acquittal, but the Attorney-General submitted that it was competent for them to bring in a verdict of manslaughter. The jury did convict him of manslaughter, and the point was reserved for the full court. Their honours ultimately upheld the conviction, and Levinger has been sentenced to seven years imprisonment. Two of Levinger's accomplices, Captain Hovell and a Polynesian sailor named Rangi, were convicted of murder in Sydney, and there sentenced to death; but the sentence has been commuted to imprisonment. No doubt this prompt visitation of justice will go far towards checking the evil, if it does not bring it to a speedy end. But this is not all. The Queensland Government, hitherto authorising the introduction of Polynesian labour, in ignorance of the vile things done under that guise, have cancelled the license issued to one of the most active agents.

#### THE SLAVE TRADE IN THE SOUTH SEAS.

A schooner, named the *Daphne*, has been captured in the South Seas by H.M.S. *Rosario*, with a number of Polynesians on board, who are said to have been kidnapped. The captain of the schooner was charged at the Melbourne Police-Court with the offence of kidnapping the natives, and Captain Palmer, of the *Rosario*, stated that he had

examined the ship's papers, which he found to be incorrect. There were five forms under the Polynesian Labour Act, for the transport of fifty-one natives to Queensland as labourers, but they were signed in the presence of interested parties instead of missionaries or others unconcerned. The prisoner had a permit from the Queensland Government to bring fifty labourers to that colony, but Captain Palmer found him at the Fijis, with a hundred natives on board, two-thirds of them naked, and the rest covered with bits of rag. Since this prosecution the Queensland Government have cancelled the permit granted to him. Unfortunately, the evidence before the magistrates was not sufficient to convict any of the culprits.

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### THE QUEEN ADELAIDE NAVAL FUND.

August 18th, 1869.

Dear Sir,—Gratefully remembering the many expressions of your kind interest and generous sympathy in the objects and progress of the Queen Adelaide Naval Fund, I am encouraged to hope that you will afford space in your important Magazine for the especial appeal, to which I feel it to be our indispensable duty to solicit your attention, and that of your naval readers on this occasion.

At our last meeting on the 12th instant (which if not strictly our twentieth anniversary is very nearly that interesting epoch) the following minute was universally adopted by the Ladies' Committee:—viz., "that the necessitous *unmarried* daughters of naval officers, having reached the age of seventy years, shall be considered *permanent annuitants* on the Fund, at the rate of £12 or £14 per annum: so as to make their income, which is *partly* derived from the Admiralty Compassionate Allowance, £26 per annum, or ten shillings per week."

This stipend, the Ladies' Committee feel to be the *lowest* reasonable income of such aged ladies; and they humanely desire to save to these distressed persons, the constant worry and anxiety of sending up fresh memorials every few months of their cases. By this plan of making them annuitants for the *remainder of their lives*, the time of the Committee will be greatly spared and the due consideration of new memorials rendered more practicable. This enlarged and improved mode of dealing with the cases of the aged and distressed daughters of naval officers, whose fathers (long since mouldered into dust) served their country faithfully, will, it is trusted meet with the approbation of *all* the friends of the charity, and awaken such generous sympathy in its objects, as to lead to the augmentation of its revenues by a large increase of subscribers both in the Navy and the British public generally.

Trusting that the suggestion will have the great advantage of your "good words" with all the readers of the *Nautical*, believe me to remain, dear Sir, yours, often obliged and faithfully,

A Member of the Ladies' Committee twenty years.

*The Editor of the Nautical Magazine.*



## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 503.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist. in Mls.	[Remarks, etc. Bearings Magnetic.]
59. Cape Ferro	Algeria	37° 4' 8" N. 7° 11' 8" E.	R.	218	20	Est. 15th August. Alternate red and white, at intervals of 30 seconds.
Naples	Italy W.Co.	St. Vincent Mole	...	...	...	Red flashes every minute. See Notice 32.
60. Para River	Brazil N. Co.	0° 25' 4" S. 47° 55' 0" W.	...	...	...	Corrected position of Vessel.
St. Antonio Bank	Brazil	Bahia	...	...	...	See Notice 60.
61. Farewell Spit	N. Zealand Cook Strait	40° 33' 3" S. 173° 1' 8" E.	R.	120	17	Once a minute.
C. Campbell	N. Zealand	41° 43' 5" S. 174° 18' 4" E.	R.	155	19	Once a minute.
Nugget Pt.	ditto Molyneux Bay	46° 27' S. 169° 51' E.	F.	252	23	
Manakau Heads	ditto S. Hd.	Beacon	F.	500	30	See Notice 61.
62. Beaver Reef	Australia	... ..	...	...	...	See Notice 62.
63. C. Rosa	Algeria	36° 57' 3" N. 8° 13' 9" E.	F.	418	12	Est. 1st September, 1869.
Curzola Port	Adriatic	Dalmatia	F.	14	5	Est. 1st July, 1869.
64. Roche Douvres	France	North Coast	F.	180	25	See Notice 110, 1868. Also Notice 64.
65. Russian Wreck	Baltic	... ..	...	...	...	In 38 fathoms. On line from Isle Sommars to Hogland, 7½ miles from latter.
66. Pontusval Point	France	North Coast	F.	42	10	Est. 15th September, 1869.
67. Tipara Reef	S. Australia	Spencer Gu.	F.	35	10	Est. 1st January, 1870, instead of present light. See Notice 67.
68. Quoddy Head W.	} U. States	America	...	...	...	See Notice 68.
Newbury Pt.						
Smith Point						
Windmill Point	Chesapeake Bay	N. America	F.	38	13	Est. 1st September, 1869. See Notice 68.
Pensacola	... ..	... ..	...	...	...	Notice 68
69. Tarifa	Spain	South Coast	...	...	...	See Notice 69.
70. Conningbeg	Ireland	South Coast	...	...	...	Light vessel drifted, and will be replaced.

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

No. 60.—BAHIA—EAST COAST.—*Buoyage on St. Antonio Bank.*—The north and south extremities of St. Antonio bank are each marked by a buoy. The northern buoy is *black*, and lies in  $3\frac{1}{2}$  fathoms water, S.S.E., about seven-tenths of a mile from St. Antonio lighthouse. The southern buoy is *red*, and lies in 4 fathoms water, south, about  $4\frac{2}{3}$  miles from St. Antonio lighthouse.

[*All Bearings are Magnetic. Variation 6° 40' W. in 1869.*]

No. 61.—*Caution.*—This light is only meant to benefit vessels accustomed to trade along the coast. It is not intended in any way to encourage vessels to attempt to enter Manakau harbour during the night, nor is it meant to encourage strangers to approach the coast. It is anticipated that the intended lights, described in Notice No. 61, will be lighted early in 1870; but more exact and detailed descriptions will be published when the works are more advanced.

No. 62.—AUSTRALIA.—*Existence of Beaver Reef confirmed.*—The following additional information, relative to Beaver reef, an outlying danger off Swan River, already reported in Hydrographic Notice, No. 10, dated 25th May, 1868, has been received from the Surveyor General's Department, Western Australia. The existence of the Beaver reef, which was reported to have been seen in 1864, has been confirmed by Captain Laing, of the schooner *Gift*, who passed it on the 15th of April, 1869, when the sea was breaking heavily and continuously on the danger. The reef appeared to extend about half a mile north and south; soundings were obtained in 15 to 18 fathoms, a quarter of a mile from the southern end, and its position agreed with that assigned to it in the above Hydrographic Notice, viz., about 52 miles, W. by S. (true), from the west end of Rottneest Island, or in lat.  $32^{\circ} 8' S.$ , long.  $114^{\circ} 32' E.$ , approximately.

No. 64.—The flashing light has eclipses every *four seconds*; and during foggy weather, a bell, which is placed in the upper gallery of the lighthouse, will be sounded at intervals of *three seconds*.

No. 67.—*Rocky Patch off Tipara Reef.*—That a rocky patch, having only 12 feet water at low spring tides, has lately been discovered. This danger lies N.W. by W.  $1\frac{1}{2}$  miles from Tipara light-vessel, and Mariners are hereby cautioned not to approach Tipara reef within the depth of 7 fathoms.

[*All Bearings are Magnetic. Variation 4° 40' E. in 1869.*]

No. 68.—UNITED STATES OF AMERICA.—*Coast of Maine—Fog Signal at West Quoddy Head.*—The United States Government has given notice, that a new steam fog whistle has recently been erected at West Quoddy light station, south side of entrance to Eastport Bay, and that it will be sounded during snow storms, and thick or foggy weather, for a period of *eight seconds* every minute, with an interval of *fifty-two seconds* between each blast.

*Massachusetts—Newburyport Lighthouse.*—Also, that the main light at the entrance to Newburyport harbour, Massachusetts, has been removed one-third of a mile to the north-east of its former position; and that from the 1st day of September, 1869, the beacon light hitherto shown was discontinued, and the above main light only exhibited.

*Virginia—Alteration in Light at Smith Point.*—Also, that on the 1st

day of September, 1869, the fixed light on Smith point, in Chesapeake bay, near the mouth of the Potomac river, was changed to a *revolving white* light, varied by a *red flash* once every *twenty-five seconds*.

*Fixed Light on Windmill Point.*—The light-vessel stationed at the south-eastern extremity of Rappahannock spit, off Windmill point, was removed on the exhibition of the new light on Windmill point; but a large black buoy, properly numbered, is now placed near the position formerly occupied by the light-vessel.

*Directions.*—Vessels drawing 18 feet water, or upwards, should not approach the lighthouse on the eastern side nearer than two miles; but vessels under that draught may approach the lighthouse on its north or south side to half a mile; whilst those of not more than 12 feet draught may approach it on the north, east, and south sides to two cables, but should not pass between it and the land at Windmill point.

*Florida—Change in Colour of Pensacola Lighthouse.*—Also, that the upper two-thirds of Pensacola lighthouse is now painted black, and the lower third white.

No. 69.—*Intended Alteration of Tarifa Light.*—The Spanish Government has given notice to the Moorish Government and to the International Commission of the lighthouse of Cape Spartel, that in order to prevent mistakes arising from the similarity of the lights at Cape Spartel and Tarifa, the latter light will be altered from white to *red*. This alteration will be effected by means of a screen added to the apparatus, which it is intended should project a shade about half-a-mile southward of the Pearl rock. The date when the above change in Tarifa light from white to *red* will be effected is not known, but further notice will be given.

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### THE COMBINED SQUADRONS.

THE report of the trials by our iron ships appears to fall short of that highly satisfactory nature which was desired. In many respects we have not yet found that perfection in iron that we attained in wood; but sufficient and undoubted evidence has established the immense superiority of the turret ship over that of the broadside in any weather. This fact we had long ago anticipated, and marvelled at the tenacity with which we have long been clinging to the latter and shutting our eyes in high quarters to the merits of the former. Let us hope that we shall not now realise the old saying, that "there are none so blind as those who will not see." Our space forbids the whole report and we must content ourselves with the following, which we find in the *Times*.

The evolutions were made at six-knot speed in the morning, but in the afternoon the rate of speed was reduced to five knots. This was the first occasion on which steam had been used since clearing the Straits of Gibraltar on the previous Saturday evening, fires having been kept banked and sail only used. The *Bellerophon* broke the

spindle of her escape valve during the evolutions and fell out of the column to which she belonged for a time, to repair the damage, rejoining afterwards; and the *Cruiser*, being unable to keep any position with the other ships when under steam, was despatched to the rendezvous appointed for the *Pallas* on her arrival from Gibraltar, 20 miles off Cape St. Vincent. The night drill, before calling the watch, was on this occasion shifting fore courses. The next morning was more brilliantly clear than the preceding one, and Cape St. Vincent, with the Serra de Monchique mountains in the background, loomed up with extraordinary distinctness on the starboard hand. Light north-westerly airs, just of sufficient strength to blow out the signal flags, prevailed, and the state of both wind and sea, in fact, was admirably suited for the work the fleet had before it—another long day's drill in steam manœuvres. These, like those of the previous day, require no detailed notice. All that may be said of them is, that the fleet looked magnificently warlike in many of the figures made, and the general execution of them was a great improvement on the first day's practice after leaving Gibraltar; but, on the other hand, considerable confusion, to say the least, was exhibited in some of them. Vice-Admirals Sir A. Milne and Sir T. M. Symonds, with several of the officers commanding ships in their divisions, and the commanders of the *Minotaur* and *Lord Warden*, dined by invitation with the Lords of the Admiralty on board the *Agincourt*. At ten p.m., almost before the two vice-admirals could have regained the deck of their flagship on returning from the *Agincourt*, the latter hoisted four vertical lights at the after-peak, and fired a rocket as a signal for the fleet to go to general night quarters and engage. The *Hercules* fired the first gun, and the engagement soon became general. For a short time each ship was intensely illuminated over every part of her hull, spars, and rigging. The fire from so many guns, however, soon covered the fleet in dense masses of smoke, and these, flame-fringed and pierced with long tongues of fire, were all that could then be seen of the action, which was thenceforward fought out to the end by each ship firing into the smoke around her as rapidly as possible. How steam tactics would have fared under such circumstances it would be difficult to say. A second rocket from the *Agincourt* brought the action to an end; magazines were closed, guns secured, hammocks again piped down, the watch called, and the fleet resumed its ordinary quietude for the night.

Friday, the 10th, was a great day with the fleet at target practice. The ships were spread out over a large space, and each sending out targets, made practice from her main deck ordnance, with rifle practice from the marines on the forecastle. With the ships at such distances from each other, I could see nothing of the shooting beyond that from this ship. Here the firing was exceedingly good, except when the ship got the roll of the sea abeam, and then the unsteadiness of her deck necessarily caused the shooting to become as wild as it had previously been true. There was only just such a breeze as any vessel might beat up to windward against under her royals, and a moderately

long swell rolled in from the westward, such as might be looked for in the finest of weather at sea, and yet, under these not very unfavourable conditions, here was a fleet of ships with their broadside guns rendered innocuous each time they got the swell of the sea on their beam. The great disadvantage of broadside-mounted as compared with turret guns was fully brought out, even on so fine a day, and there can be no manner of doubt that had the *Monarch* been an enemy, with her turrets and four 25-ton guns in working order, she could have steamed down on the fleet from her windward position and have sunk fully one-half of the ships before her own fire could have been silenced by her being sunk or blown up in her turn.

The drills of the combined fleet at sea terminated with the target practice of Friday, the 10th. During Saturday and yesterday the ships lay on and off the land, in three divisions, under easy canvas, and close hauled to light northerly winds, between capes Espichel and Roca, and occasionally heaving within sight from the mouth of the Tagus. A longish swell prevailed at times, and under its influence, combined with the lightness of the wind and the low rate of speed at which the ships were moving through the water,—from two to two and a half knots per hour,—the “rollers” of the fleet, the *Royal Oak*, *Pallas*, *Caledonia*, and *Lord Warden*, performed, with closed ports, some most extraordinary antics, the *Royal Oak* and *Pallas* at times nearly rolling their garboard strakes out of the water. The three great five-masted ships, with the *Monarch*, *Hercules*, and the *Inconstant*, at the same time rode the swells as steadily as seagulls.

At daylight this morning the fleet bore up for the Tagus, and crossed the bar outside at seven o'clock, and soon afterwards entered the Tagus in two grand lines, with the *Agincourt* leading in the centre, the lines being three cables apart, and the ships in line a cable and a half from each other. Sweeping slowly up to the anchorage off the city thus under the full glow of the morning sun, the spectacle, as the fleet opened round Belem Castle, must have been one of unprecedented beauty and grandeur from the shore. Salutes were exchanged during the run up the channel below the Belem Tower between the *Agincourt* and the forts on shore in honour of the Portugese and British national ensigns, and also with an American frigate lying at the river anchorage. About half-past nine the ships dropped their anchors simultaneously abreast of Alameda, and the most powerful iron-clad fleet in the world lay in quiet and imposing array a short rifle-shot distance from the principal squares and streets of the capital of the kingdom of Portugal.

*Conclusions.*—The more salient facts so far established by the present cruise are, in my opinion,—

1. That the efficiency of the Channel and Mediterranean Squadrons in steam evolutions—if their performances in that respect under the Admiralty flag represents their true *maximum*—is not at all commensurate with the cost of their annual practice in the two items alone of coals and wear and tear of machinery.

This may possibly be explained, or rather attempted to be explained,

by saying that the two squadrons would manœuvre better alone, or if only one Admiral was present and in command. Such an excuse would possibly not be accepted by the public if it even settled the question at head-quarters. The same laws of obedience and loyalty of service govern commanding officers to an equal extent as the seaman and marine.

2. The dangerously defective action, under certain conditions of wind and sea, or amount of helm given, of the balance-rudder principle.

3. The superiority in sailing to windward of the oldest over the latest produced of our ironclads. This position of affairs may, however, be reversed under the altered conditions of a stiff breeze.

4. The steadiest ironclad ships under steam or sail in the two squadrons are the *Agincourt*, *Minotaur*, *Northumberland*, *Hercules*, and *Monarch*. The most unsteady of all are the—1, *Pallas*; 2, *Royal Oak*; 3, *Caledonia*; 4, *Lord Warden*; 5, *Prince Consort*, in the order as numbered. The ship having the greatest inclination under sail is the *Inconstant*, but this defect, if it is considered one of great moment, can easily be rectified. With regard to the speed under sail alone of this handsome frigate no reliable inferences can be drawn from any comparison with other ships in the two days' trials, nor yet with the "test" vessel, the *Cruiser*, the latter being now an old craft, possessing no power under sail, and never having possessed any reputation in her palmiest days for speed except of the most moderate character. The only measure that can yet be taken of her speed under sail is in the figures given with the second day's sailing—in the total distance beat over by her to windward from the time of rounding the *Royal Oak* and the time she occupied in doing the work. It is the intention of their Lordships to give her a further trial previous to the Channel division of the fleet reaching Queenstown, and for this purpose the *Warrior* is ordered to be off Corunna about the 20th instant. The *Warrior*, however, with her now heavier armament and stores on board, floats about twelve inches (mean) deeper in the water than she did with her original armament. She was never so fast as to approach the present believed speed of the *Inconstant*, and probabilities are that the latter will sail away from her hand over hand.

5. The undoubted great superiority of the turret over the broadside principle in maintaining a continuous fire in a rolling sea.

The First Lord has signified his intention by signal to the fleet to give a cup to be rowed for by gunroom officers belonging to the ships of the Mediterranean and Channel squadrons, in service boats, in some boat races which it is contemplated to hold on the Tagus, on Wednesday, the 15th instant.

In conclusion of my present letter I wish to state that during this cruise the First Lord is making himself acquainted with numberless important matters connected with the ships, their organization, crews, and armaments, to an extent that fifty years' continuous rule at Whitehall would never have given him, and at the same time gaining his knowledge free from that strong professional prejudice which blights

the greater number of opinions tendered by the colleagues of a Civil First Lord, when given within the magic precincts of the four walls of the ancient Board-room.

[The regatta of boats that seems to be anticipated may come off, but we can never believe that officers of gunroom rank could ever descend to such a contest as is implied in rowing for a cup to be given by any one?—ED.]

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### THE HISTORY OF THE ISTHMUS OF SUEZ CANAL.

THE result long laboured for upon the narrow strip of land which joins Africa to Asia has, within the last few days, been accomplished; and, to quote a poetical phrase from a report presented to a body of shareholders, the "union of the waters of the sea of pearls with the waters of the sea of corals" has actually been effected. Our correspondent at Alexandria has supplied a description of this meeting of the waters, which took place in the bed of the Bitter Lakes, whither the Mediterranean had been brought by the completed section of the canal. It now only remains to put some finishing touches to the small section running from Suez to the lesser Bitter Lake, and M. de Lesseps' task will be finished, and in November the new highway to the East will be inaugurated in the presence of rulers of nations which had no existence when, fourteen hundred years before the Christian era, King Seti's "navvies" threw up the first spadeful of earth from the line marked out for the original Isthmus of Suez Canal.

The moment is opportune for a review of the history of this great undertaking, of which the French nation are so justly proud. The period includes a space of three thousand years, and the work done is colossal in its extent, but the leading incidents are few, and their recital may be brief. The idea of forming a through water communication across the Isthmus of Suez was familiar to the Egyptians under the Pharaohs, though, of course, with ends in view widely different from those with which the nineteenth century promoters of the undertaking have been animated. In those days the whole of the lakes which lie across the Isthmus were flooded. Nothing required to be done save to dig trenches, between each, and so connect them. King Seti I. commenced the enterprise, and a thousand years later (326 B.C.), Nechas worked to death a hundred and twenty thousand men in renewing it. The Romans and the Arabs, as they successively occupied the country, patched up and extended the canal; but in a more enlightened age, the Caliph Almansour, being at issue with his subjects in a province through which the canal passed, and being desirous of starving them into subjection, destroyed the route by which they were accustomed to receive provisions. This was in the eighth century, and the idea of connecting the Red Sea with the

Mediterranean slept for a thousand years, when it was re-awakened in the mind of a man for whom such a work had a peculiar charm. In 1798 Napoleon Bonaparte, then serving the French Republic as commander of the expedition to Egypt, proposed that a canal, capable of being navigated by sea-going ships, should be cut across the Isthmus of Suez; but he was met by the curious yet time-honoured objection that the waters of the Red Sea were not on the same level as those of the Mediterranean, and that the consequence of putting them into communication would be something dreadful. Bonaparte scouted this idea as being contrary to the scientific laws which govern the globe, but he, nevertheless, directed the commission of *savants* which accompanied the expedition to survey the Isthmus with the view of ascertaining the levels of the two seas. The result was astounding. Lissère, an engineer of high standing who conducted the survey, reported that one sea was higher than the other by several inches, and the idea of connecting them was thereupon abandoned.

The statement of the French engineers, though at first accepted as being the result of a special survey made under indisputably competent direction, was so directly opposed to the teachings of science, that presently it began to be hinted that there must be a mistake on one side or the other, and it was generally agreed that it was more likely to have been committed by the surveyors. In 1830 Lieutenant Waghorn, planning the Overland Route, re-surveyed the Isthmus of Suez, and settled the question by demonstrating an almost perfect equality of level between the two seas. At this time M. de Lesseps was serving his diplomatic apprenticeship in the French Consulate at Cairo, and the laying of the bugbear which had hitherto prevented engineers from seriously considering the pros and cons of a project for dividing the continents, suggested to his mind the possibility of carrying out the scheme. He felt a powerful "call" to the work, but it was plainly more than might be undertaken by a young man aged twenty-six, and but just started in life. M. de Lesseps, however, did not by any means abandon the idea because circumstances happened to make it impracticable at the moment. He carried it with him to Barcelona, whither he was shortly after removed, and where he gained great fame by his conduct during the siege of 1842. He kept it before him in Rome, where in 1848 he further distinguished himself by presuming to differ from his Government on the question of the French occupation of that city, and by honestly avowing his sentiments, and sacrificing his position thereto. In 1854 the opportunity for which he had long waited arrived. Mahomed Said, the Viceroy of Egypt, invited him to pay a visit to Cairo, and one day, whilst crossing the desert from Alexandria to the capital, M. de Lesseps opened out his scheme to his Highness. Mahomed was delighted with the idea, which he was shrewd enough to perceive was fraught with great advantages to Egypt, and he pledged himself to support the undertaking by every means in his power. It was in the beginning of November that this conversation took place, and on the thirtieth day of the same month M. de Lesseps was in possession of a viceregal



firman bestowing upon him the exclusive right to construct a maritime canal across the Isthmus of Suez.

M. Lesseps had reached an age at which most men begin to think of rest when he commenced the work for which he was born ; but if he had been twenty-five instead of fifty, he could not have set about doing it with more ardour. At the outset difficulties were no sooner overcome than others arose and filled the vacant places. It was necessary to obtain the Sultan's confirmation of the Viceroy's firman, and the Sultan was not greatly disposed to further an enterprise which, whatever became of the original shareholders, could not fail to add to the importance of Egypt—a dependency already too precocious to suit the jealous policy of the Porte. Then Lord Palmerston, possibly foreseeing an ulterior French "annexation" of Egypt, canal and all, set his face against the project, and was supported by some of our contemporaries, who in leading articles which M. de Lesseps carefully preserved in his desk, and now gleefully shows to his friends, styled the promoter of the scheme the "High Priest of the Egyptian Enterprise," and other funny names. Scientific men demonstrated the impossibility of the undertaking, and even Stephenson lent the weight of his great authority to crush it. But the energy of M. de Lesseps triumphed over all, and in 1858, four years after he had definitively taken the matter in hand, the subscription list of the *Compagnie Universelle du Canal de Suez* was opened on all the Stock Exchanges of Europe. Shares were taken up with encouraging alacrity, and on the 25th April, 1859, possession was taken, in the name of the company, of a narrow belt of sand on the northern coast of the Isthmus, washed on one side by the Mediterranean Sea, and on the other by the shallow waters of Lake Menzaleh.

The first point which the engineers under the direction of M. de Lesseps turned their attention to was the creation of a port for the ships which brought from Europe the machinery and the principal supplies of food for the great army of workmen. There was no choice of site. The starting point of the canal was fixed, and there must be the port, notwithstanding the fact that the water was so shallow that nothing bigger than a barge might approach within half a mile of the beach. The only thing to be done was to run out seaward breakwaters on either side of the space required for the harbour, and to deepen the enclosure. But before this could be done it would be necessary to land cargoes of provisions and of heavy machinery, and how were they to be discharged? Thus—An island was created at the limit to which the ships might approach; immense cranes were erected thereon, and by their means the imports were transhipped into lighters, which conveyed them to the beach. The building of the breakwaters was then proceeded with, stones being supplied from the quarry of Gex, near Alexandria; but this course was found to entail great cost and delay, and the men who had made the little island in the Mediterranean determined to make also the stone for the breakwater. They established a manufactory on the seashore, and by an ingenious process they moulded, of sand mixed with lime, blocks of

clay weighing twenty tons a-piece. These being exposed for a due season to the sun and air, became hard as granite, and of them are built the breakwaters, which, stretching out into the sea—one a distance of a mile and a half and the other of upwards of a mile, make the fine harbour of Port Said.

Whilst the breakwaters were being built and the harbour deepened, and a town growing up on the narrow belt of sand, the construction of the Canal itself was being vigorously pushed on. The course from sea to sea being definitely marked out the work was simultaneously commenced along the whole line, gangs of men being told off for stations fixed at equi-distances. Machinery of the most ingenious design and upon the vastest scale was introduced, and, with an unlimited supply of hardy workmen, the Canal was growing apace, when, in 1862, events occurred which threatened to put an end to the scheme altogether. Three years earlier, when the Sultan saw the work actually commenced, and perceived from the character of the men engaged in it that it was very likely to be carried on to the end, he ordered the Viceroy to send away the Frenchmen, and it was only upon the intervention of the Emperor that he withdrew the injunction. Now again in a manner more peremptory than before, he interposed, forbade the Viceroy to permit his fellahs to labour upon the Canal, and declared null and void the firman of 1856, which conceded to the company the lands necessary for the works. Before this mandate of his liege lord the Viceroy was powerless, the fellahs were withdrawn, and the works came virtually to a stand-still. Attempts were made to supply the place of the natives by an importation of European navvies, but under the sun which beats upon the sands of the Isthmus none but of the negro race can do a fair day's digging and live, and till the matter at issue was settled, the managers were fain to be content with holding the way already made. Again the Emperor came to the rescue, and being appointed arbiter, he early in 1864, effected an arrangement by which the works were resumed under pretty nearly the same circumstances as those under which they were carried on previous to the Sultan's interdict.

Here ends the record of the exceptional difficulties with which the promoters of the Suez Canal have had to deal. The history of the last five years would simply be a chronicle of daily progress, and is best summed up in the statement of the fact that the Canal is now ready for opening.

The Red Sea and Mediterranean continue doing their respective biddings. The belief in the water attaining its required height by the end of October gains ground day after day, and the mode of transit to be adopted is attracting attention. Information on this point has been gained, no doubt, since the recent sitting of the *Assemblée Générale* at Paris, on which occasion M. de Lesseps propounded his *plan de manœurement* for the shipping; but readers in general will necessarily continue looking to Egypt as the fountain head for news. Eight kilometres an hour is to be the regulation speed in the large sections having a length of ninety-five kilometres; seven kilometres

the maximum speed per hour in the small sections across a space of thirty-one kilometres ; whilst in the large and small bitter lakes ten or twelve kilometres will be allowed. It will therefore take about twenty hours to go from Port Said to Suez : and the speed, according to the opinion of the contractors, will not damage the banks of the Canal whatever the motive power of the ship may be.

Calculations, indeed, show that the crumbling of the sand from the ridges will not refill the excavations to an extent worth alluding to. Sailing ships having upwards of 500 tons burden are to be towed separately. Those of a lesser burden are to be towed in batches of twos or threes, or of four whenever their respective measurement does not exceed one hundred and fifty tons. Vessels of or under thirty tons burden are to pass through the Canal without being towed, their shape and draught permitting them to navigate along the sides without hindering the progress of the steamers or ships in tow. Strong westerly or easterly winds might inconvenience the navigation, and prevent a vessel of heavy tonnage from keeping at a sufficient distance from the banks. But westerly or easterly winds are rarely if ever strong in Egypt. The difficulty, moreover, could be overcome by diminishing the speed and by lowering the masts.

Although the Canal at the water line measures one hundred metres in its greatest and fifty-eight metres in its smallest width, it is nevertheless questionable whether the large vessels will be able to pass one another without making stoppages at the passing stations. The company has, however, provided for the contingency of ships running foul by establishing several such stations at Kantara and other places. But notwithstanding this precaution, it will probably be necessary for the large shipping to start at given hours. In short, should the Canal not prove sufficiently broad, it may be considered in the light of a railroad with one gauge only, and prevented, therefore, from running up and down trains simultaneously. Experience will soon solve this, and the remaining not less important matters at issue. Should the Canal, however, not prove wide enough, there will be comparatively easy means at hand to widen it. According to contract the materials which have served for the excavations are to remain after the completion of the present undertaking the property of the company. Thus a recurrence of large sums to be disbursed in purchasing machinery and so forth would be obviated. A portion of the materials will be brought into immediate use for the transport service. Forty-eight engines (of 35-horse power mostly) are to be adapted as tugs to run on the line which is being made on both sides of the Canal. It is unnecessary to dwell on every little and every great regulation which M. de Lesseps purposes enforcing for the traffic on his Canal.

I wish, however, before closing my letter to draw the attention of your yachting readers to the unprecedented and excellent opportunity the inauguration of the Canal offers for a cruise in these waters. This idea or suggestion is probably not a new one, but, nevertheless, not unworthy of repetition. I learn on good authority that there are to be races at Ismalieh. Why, then, should there not be an international

regatta on Lake Timsah as well? It is as perfect a lake for aquatics as can well be conceived; and if a few enterprising spirits were to take the initiative, the matter, no doubt, would soon be followed up by others.—*Daily News*.

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#### SEA-GOING AS A SPORT.

AMONG the ancient maritime races, and in Pagan times, when manly sports were (as they now are in England) honoured almost as religious exercises, and cultivated as an essential part of a liberal education, we find scarcely a trace of sea-going for amusement. Probably the rich Athenians had so much to pay for fitting out ships in the public service—the naval “liturgies”—that they would not care to spend more on their own account. There is no allusion to yachting in Aristophanes. The modern Greeks, we know, supply some of the best models of ship-building, and some of the smartest seamen in the world. Their predecessors—or to speak more accurately, the ancient and renowned fellow-countrymen of Pericles, of Thucydides, of Nicias—were bold and skilful seamen, according to the fashion of their age. But there was no such thing as shipbuilding or as sea-going, in the modern sense, in those days. The great naval battles of Athens were battles of boats: their principal manœuvre consisted of “bumping,” and all the combat was hand-to-hand. The famous sea-fight off Corfu was no more like a modern naval engagement than an encounter of launches and pinnaces might be. It was very gallant boat service. As to their seamanship and cruising, it consisted in creeping along the coasts from headland to headland under oars and occasionally something of a sprit or a lug sail.

The Romans cared little for naval matters, as the power of the pirates in Pompey's time would seem to indicate. They had a public amusement called *Naumachia*—a gladiatorial show on a lake, but no yachting, in the sense of keeping private vessels for pleasure and using them on the open sea. The *Navigiolum* was a “pleasure boat.” Mr. Folkard, in his most readable and complete treatise on “The Sailing Boat,” mentions a *Thalamegus*, which he describes as “a yacht or vessel of parade and pleasure.” But whatever the *Thalamegus* may have been, it was not a sea-going vessel: a mere sailing boat, such as is used on lakes and on the coast, is not a “yacht,” nor is a sea-going boat, such as a trireme or a galley. Horace, indeed, laughs at the poor man who is sea-sick in a “hired pleasure-boat,” by way of aping the rich man who is sea-sick in his “private trireme.” But an ancient Roman, like a modern Briton, might be sea-sick if he will in a rowing boat. Cicero charges Verres with receiving a ship as good as a “trireme” for an illegal present. But he does not say the ship was for the Proconsul's private delectation. Apicius, the immortal predecessor of Brillat-Savarin, hearing that the African oysters were good, went over to taste them, but, finding them unequal to their reputation, came back again in the same ship. He may have hired her, or bought her for the special purpose of going to taste the African oysters; but

Apicius was not a yachtsman as well as an epicure, like that worthy city alderman and baronet whose fine old yacht, the "*Phantom*" (a *Phantom* of somewhat "o'er-grown bulk") was, a quarter of a century ago, famous through the Royal Yacht Squadron for the most hospitable and most convivial of hosts and owners. There is, however, one distinctly memorable instance of a yacht voyage in classic times. Catullus, then a boy of eighteen, went in the train of the Prætor Memmius to Bithynia (about B.C. 58); and he made the voyage in his own yacht, under oars and sails. In some of his shorter poems, Professor Sellar remarks in his "*Roman Poets of the Republic*," Catullus expresses his disgust with his chief; his affection for his friends in the Prætor's train; his enthusiasm in visiting the famous cities of Asia; "his affectionate pride in the yacht which bore its master safe through the perils of the Euxine, the Ægean, and the Adriatic; his deep happiness on his return to the rest and security of his beautiful Sirmio."

Among the poems in which this side of his nature is most clearly revealed may be mentioned the dedication of his yacht to Castor and Pollux ... .. The lines, on his yacht,

Phaselus ille quem videtis hospites,

express with great simplicity and freshness the feelings of affectionate pride which a kindly nature lavishes, not only on living friends, but on inanimate objects, associated with the memory of past days of happiness and adventure. His fancy endows with a kind of life, as he dedicates it to the twin gods, whose star is auspicious to mariners, and allows it to rest in peaceful age on the fair waters of Benacus.

Modern yachtsmen will understand the singular tenderness of personal affection with which this charming gentleman and poet of Verona regarded his vessel when, on her return from the Black Sea, he laid her up in the calm blue waters of Lake Garda. There is something of a passionate sentiment in a man's love for his ship; and this, perhaps, even more than the erratic instincts, the long and uncertain absences, and the taste for sudden disappearances, sometimes attributed to yachtsmen, is apt to make some ladies implacable rivals of the beautiful "*Flirts*," "*Coquettes*," "*Mirandas*," and "*Beatrices*," which from May to September, divide the affections of husbands and dispute the admiration of lovers.

Yachtsmen addicted to the reading of the Greek drama may be permitted to pass by no too sudden or too forced a flight from the city of Poseidon and the Nereids to a country and a people as illustrious in the modern world for its horses, as unrivalled on the sea, as the Attica of Sophocles. An Englishman of the nineteenth century, entertaining some scholarly foreign lover of manly sports, at Ascot, at Melton, or at Cowes, might without pedantry or patriotic vainglory, apostrophise him, in a moment of festive elation, almost in the words of the Old Men of Colonos. "Welcome, my friend, he might sing or say, to the white cliffs and downs of this ancient land, famous for its horses of no mortal strain—born of the Sun and the Wind—and for the white winged skimmers of the seas. Here is the people that delights to contend on turf and wave for the prizes of speed, endurance, skill,

and courage ; here the horse is more than the comrade and the servant of man—he is the master of the man's existence, and often the rival of the woman's affection." " Surely," he might add in more prosaic strain, " Poseidon (who was the patron of saddlers, as well as of ship-builders) would have claimed this nation as doubly his own. He would have had temples all the country over and all round the coast, and a host of obscure but ardent worshippers, who, in these degenerate days, confine their devotions to the sacred columns of a sporting journal." For our own part, we do not profess to convert the luxurious landsman whose soul has often sickened o'er that atrocious middle passage between Dover and Calais, to a belief in the pleasures of sea life, for we have not the slightest hesitation in laying down as a fundamental law, that no one whose stomach is not absolutely sea proof should be admitted on board a yacht. Sea-sickness may be an infirmity on board a public vessel—on board a yacht it is a sin against good manners, we had almost said a crime. We have always regretted not consigning incontinently to the deep a friend (how we hated him ! ) who lay for twelve hours casting up his accounts in a jollyboat on a cutter's deck, and entreated us to throw him overboard. But we do protest against the suspicion of monotony on board a yacht whose owner knows how to live at sea.

In cruising on the home stations, a yacht, if not becalmed, may put her nose into some snug little harbour or other at least once every twenty-four hours. Suppose you are becalmed, you have all the comforts and resources of a country house, without the fuss of entertaining a select mob of indifferent guests. You have chat, books, whist, chess, the foils, or the single sticks ; a piano, or a guitar, if happily you can play or sing ; pistol shooting at a mark hung out from a yard-arm, or rifle shooting at a target if you are well off the land and there is no other sail in sight (or even gun practice if you are large enough to carry a pocket " Whitworth " or two) ; boat races and mutual morning and evening calls, and an exchange of invitations to breakfast or dinner, if you are sailing in company ; deep sea fishing ; and when you are tired of all these things, a dreamy doze under the shade of a sail (not unwelcome, perhaps, after the late hours and hot rooms, and incessant clatter of a London season), when you awake perhaps to find that the catspaw, for which the man at the helm was whistling just now, has freshened into a breeze, and the little lady is talking to it as she gathers way upon her, and bends and curtsseys to the caressing water under the swelling bosom of her sails. Suppose the dogwatch finds you still becalmed. Dinner is just over and the word is passed for coffee and cigars on deck. Meanwhile all hands are skylarking, or tripping it to a fiddle ; or there is a song with a rattling chorus, or a yarn, broken now and again with bursts of Homeric laughter.

Then the sunset and moonrise—a spectacle unsurpassed by Grieve, Telbin, or Beverly, and to be seen without paying for a stall and listening to worn out singers and the silly chatter of your neighbours, and without the obligation of staring at three rows of meagre fairy

figurantes. Then the glass of grog, and the serious and tender confidences of friend to friend and heart to heart, as you pace the deck together or lie cosily under the bulwarks, with that dear old parish lantern looking down on you so motherly as she lights you on your noiseless way! The yacht all snug under easy sail for the night, you turn in, and give orders to be called at sunrise. How's the wind and the weather, captain? Dead against us, sir, and a goodish bit of sea on ("I should say so from her antics!"), and the sun looks all for wind. Up comes the glorious sun, sure enough, full of fight; and the little lady, who at midnight was bending gracefully to a light wind abeam under a cloudless sky, is now closehauled and with two reefs down. Monotony, indeed! to the genuine yachtsman his sea life is a scene of incessant change and infinite variety. To him the chart, the log, the making and shortening sail, the fair and the foul wind, the calm and the storm, the beating and the bearing up, the hauling to and the casing away, the reaching and the tacking, the standing off and on, the getting underway and the shaping a course, and the working up to an anchorage in the quiet bay, when the night is as dark as a pocket, and the sea all aflame—all these and many more of the familiar phases and incidents of a cruiser's experience have for the yachtsman who owns a touch of the happy go lucky in his nature, and an eye for the romantic and the picturesque, all the wayward and wilful charm of a continual surprise.

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#### DEVIATION OF COMPASSES IN IRON-BUILT SHIPS.

WE have been invited to inspect the "Palinurus," which is a compass fitted with a moveable apparatus let into a circle in its face, for determining the deviation on an even keel or any angle of heel. The instrument is a compass in a box, the card of which moves with the action of the ship, but is provided with a stop, so that if a ship is running with the wind aft, she is watched till the compass lies horizontal with the surface. Having thus stopped the vibration of the compass, and ascertained the ship's bearing, the machine is set for variation by turning a screw at the south point. The latitude pointer is next set to the ship's latitude at the time of observation. The apparent time of the ship is then found, and the instrument is turned until the shadow of the edge of the sector, by the reflection of the sun, moon, or stars, cuts the time on an hour circle denoted by lines. The magnetic bearing is then displayed on the rim, and in the difference between that and the course by the compass is found the true deviation. The whole proceeding does not occupy more than two minutes. It appears to gain great favour in steamers, the masters of the *Alexandra* (s s), *Alabama* (s s), *Scandervia* (s s), *Aurora* (s s), *Chiltearn* (s s), *Dacia* (s s), *Paraguay* (s s), *Clyde* (s s), *Narva* (s s), *Apollo* (s s), and others, testifying handsomely to its merits. The instrument can be used for correcting a ship's course, for if there is much motion and vibration, and a doubt of the exact steering of the ship, the compass-box can be placed on deck, and a series of stops

made, without interfering with the binnacle or standard compass. By placing the sector upright the sights may be used. The sights may also be used for taking magnetic bearings. Deviation cards are supplied to ships, but they so frequently go wrong by attractions of one kind or another that they can never be trusted. Given with this instrument a clear observation, and the deviation is shown, by a mechanical contrivance which cannot err, almost immediately.

[We insert the above at request, but do not pretend to vouch for its accuracy in any of the particulars.—ED. *N.M.*]

#### THE APPROACHING HIGH TIDES.

By the approaching high tides, we allude specially to the Spring tides in the early part of next month. An ill founded notion has got into the public mind that the Spring tides of the 5th of next month are to be unusually high and therefore to be the cause of considerable mischief. The Astronomer Royal and others have been appealed to as to the truth or probability of such effect. The answer as we expected is, that nothing of the kind can arise from the Sun and Moon's attraction, and the official tide tables make no reference to any such undue height. But it may be assumed as perfectly true, that in reference to our own coasts a westerly or north-westerly gale occurring at the same period of the approaching Spring has done and would again do this. It would drift the tidal waters into channels and bays open to them, especially such as the Bristol Channel (from the peculiar funnel or contracting form of its shores), the gulf of St. Maloes, *a cul de sac* also, and such inlets of the coast, especially formed for heaping up the waters. Now should a quiet or calm state of weather prevail during and about the 5th of October, nothing of the kind could take place, but should a gale of wind prevail from any point of the compass between S.W. and N.W., or even further north at that period, a higher rise of the flood tide may be expected, and its rise increased in proportion to the strength of the wind; and as the season is celebrated for the occurrence of violent winds, the probability is great that such may occur. But should such an effect take place we shall set it to high winds assisting the operations of the sun and moon, and to the combined effects of these bodies by themselves.

An old correspondent has thus expressed himself on the subject, with whose remarks we entirely agree.

“That the moon will be in perigee, or its nearest distance to the earth, in the early part of next month, there is no disputing, and her being near the equinox at the same time, is also an astronomical fact; the sun being but a few degrees south of the equator at this period, is also true; and, acting in conjunction with the moon, in this position will no doubt cause the ocean tidal wave to rise above the mean level; but I do not think it can exceed two and a half, or three feet at most beyond the action of their combined influences at an ordinary spring tide, which is estimated by Sir Isaac Newton in his “*Principia*,” at eight feet six for the attraction of the moon, and one foot six for the



sun, making a mean height of ten feet, and he adds two feet more when the moon is in perigee, making it twelve feet. Now if we allow a foot augmentation for the moon's position on this particular occasion, we may call it an excess of one-third over ordinary spring tides; therefore in channels contracted in their upper parts, like the Bristol Channel for instance, or the bay of St. Malo, inside the Channel Islands, this additional rise of one third in the ocean tidal wave will increase as it advances in a quadruple ratio, so that at the mouth of the Wye or the Avon, and at Jersey and St. Malo, particularly if accelerated by a westerly gale, the tide may rise upwards of fifty or even sixty feet, which it has been known to do before now; but certainly not "fifty feet higher than ever known before." My own impression is that this mean additional rise of say three feet above the ordinary ocean tidal level will cause an additional rise of one-third over ordinary spring tides, unaffected by local gales of wind, and may be added to the normal rise at all parts of the earth; that is to say, if the mean height of ordinary spring tides with new moon, and uninfluenced by wind, be thirteen feet, as at this place (Starcross) we may add one-third to it, or say four feet more, making seventeen feet. The mean height of spring tides at Chepstow being forty-two feet, we may add say fourteen feet, making fifty-six feet; St. Michael's Mount, coast of France, sixty-seven feet; Plymouth, twenty-one to twenty-two feet; Portsmouth, twenty-one to twenty-two feet; Southampton, sixteen to seventeen feet; London Docks, twenty-three or twenty-four feet; and if a gale of wind should be blowing from the sea on to the shore, or up a river in certain localities, or there should be a very low barometer, no doubt the tidal wave will be raised still several feet higher; although in places where the wind may blow strong off the shore or down the river, or the barometer may be high, it will keep down the flood tide, but cause a very low ebb. In such positions the tide may not rise higher than ordinary springs, nor so high as such tides sometimes are when forced up by a gale of wind.

Under any circumstances it will be well for parties living on the banks of rivers or near the sea to prepare for an unusually high tide, by removing their valuables and furniture from the lower floors to the upper part of their houses, and looking out for squalls from the 5th to 8th of next month. Yours obediently,

"Starcross, Devon, 18th Sept., 1869.

"GEORGE PEACOCK,  
"F.R.G.S."

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#### THE FRANKLIN EXPEDITION.

At the last moment before going to press the following telegram by Atlantic Cable (French), arrives from New York, of the discovery of genuine relics of the Franklin party.

"New York, September 27th.

"Dr. Hall, the Arctic explorer, arrived at New Bedford yesterday from Repulse Bay, after an absence of five years. He discovered the skeletons of several of Sir John Franklin's party at King William's Land, and he brings numerous relics of the Franklin expedition."

THE  
NAUTICAL MAGAZINE

AND

NAVAL CHRONICLE.

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NOVEMBER, 1869.

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ON THE NECESSITY FOR COMPASS SUPERVISION *by the Government,*  
*and some obstacles to Mates acquiring a knowledge of Magnetism, etc.*

TO THE EDITOR OF THE *Nautical Magazine.*

IN a former paper a kind of promise was made that something should be said about our compasses being in a worse condition than our sextants.

There is an excellent paper by Mr. Rundell, secretary to the "Liverpool Compass Committee," in Volume 7 of the Transactions of the Institution of Naval Architects, read before the members and associates of that body on March 23rd, 1866, which furnishes a subject for some remarks, since it appears, that scientific men have the "game in their own hands," and they play it as they like. Perhaps this is because they are the only people who understand it, if it can be said to be understood, as yet, by any one.

They tell the public, especially the Board of Trade, scientific societies, shipowners, etc., all about the compass question, as it appears from their point of view. But let us look at it from the seaman's point of view, those numerous "webfeet" whose commanders a—*certain*—Local Marine Board deems unfit to be trusted with spirits on board their ships, but whom, other people think, ought to have the science of magnetism at their finger ends.

Surely there is a marked inconsistency in the requirements expected from these same "webfeet." One party requires they should have a fair scientific education, considerably above par; while the other practically tells them they are—low,—ignorant set of fellows, not fit to be trusted out of sight, even with a "bottle of brandy." So let us, Mr. Editor, endeavour to *express* the opinions entertained by the majority of sailors in the Merchant Service on this same compass question, as here discussed from *our* point of view: and we will at once refer to Mr. Rundell's paper. He tells us, that the Liverpool

Underwriters' Registry for iron vessels requires, that *all* ships classed by them, shall be furnished with at *least*, "one steering compass compensated, and one standard azimuth compass, placed so as to command the horizon over the weather side when the ship is heeling."

How is it, then, that a large iron ship, classed by the Liverpool Underwriters' Registry, was left by the pilot one evening at the N.W. light-ship (Liverpool), outward bound, *without*—a compensation steering compass on board, *without* having been swung herself, *without* having on board a table of compass deviations,—in fact—*without* any information whatever as to her magnetic condition, errors of her compasses, etc., and by way of compensation, if you please, her captain and officers had never been in the ship before, nor indeed a single person who was then on board of her?

Let us now, for a moment, try to imagine what *might* have been the fate of that ship had bad weather overtaken her. Let us see also, what would be the verdict on the unfortunate "skipper," when hauled up before the "beaks" for the loss of his ship, assuming that had such taken place. In fact we may suppose, a suspension of his certificate would have been the result. Without being uncharitable, perhaps a suspension of his owner's business would be the proper remedy for this state of affairs.

But let us not confine ourselves to *one* ship in this condition; why, Mr. Editor, don't be alarmed when you are told that hundreds of ships leave Liverpool in a similar condition with regard to their compasses, and that *ALL* of them are registered by the "Liverpool Underwriters' Registry for Iron Ships." Practically, therefore, the rule as stated by Mr. Rundell is a dead letter; it is systematically evaded; it is ignored entirely and completely!

The fact is, Sir, that the attention of the Board of Trade, scientific societies, and all persons who are averse to the Government interfering with our compasses, or matters connected therewith, should be directed to this important subject. Let them tell us, how we can compel grasping, unprincipled owners, whose only object is money, to equip their ships in a fair and honest manner. Let them also imagine the mental state of the captains alluded to; aye, hundreds of them who are placed in a similar position, and any one of whom in reality may not know whether his ship's head is north or west when he may be left at the N.W. light-ship in thick weather, *without* ever having a chance of obtaining an error of his compass.

Those gentlemen, "who sit at home at ease," and say we are a set of ignorant people, unfit to be trusted with a bottle of brandy, cannot realize such a position; it is beyond their comprehension, just as it appears to be the fact, that there may be honest, sober shipmasters, who are gentlemen, well educated, and in mental acquirements and intelligence very much superior to many of their owners.

Again, I will ask, how are we to compel such owners as these to equip their ships to a minimum of safety, if the Board of Trade will not interfere. Ready enough is that Board, with its Court of Inquiry, on unfortunate captains who get into scrapes. Why not try their

hands on some of the owners, who, from our point of view, are the indirect causes, in very many cases, of the losses of ships, and exactly as has been shewn in a former paper, is the necessity for the Government to interfere and oblige those unprincipled owners to give us good beef and pork to keep us in health, so too shall be shewn here is the same necessity for supervising our compasses, so that, as at present, our lives may not be left at the minimum of safety.

No one seems to care one straw about the real safety of the sailor. —It must be distinctly understood here, that he is referred to in his normal condition of safety, not when he is actually shipwrecked on our coasts, where he has the chance of being saved by one of the numerous and splendid life-boats, established by our humane and philanthropic countrymen and women, and for which we ought to be everlastingly grateful. But these remarks more especially apply to the safety provided for him by his employers, and secured to him, such as it is, by the Government. He is obliged over and over again to go to sea in some leaky, overladen ship *WELL insured*, but which every honest sailor knows is not fit to go to sea: in short—every life on board of her is in manifest danger. As a parallel case, let us take the workers in a cotton factory. Observe how earnest is the Government in watching that no one shall be injured by the machinery, and how the mill owner is pounced upon if it is not all carefully railed in, so that the workers are sufficiently protected. Contrast this great care with the safety sanctioned by the Government to the 310,000 persons constituting the Mercantile Marine of this country. Is the factory operative in more danger from machinery which he sees, than the sailor in an overladen iron ship, the faults and failings of which he does not see; the compasses of which may be many points in error, even to ten points, as in the case of the *City of Baltimore*, recorded by Mr. Towson, at page 14 note, in his “Practical Information on the Compass, etc.?” From *our* point of view we have a right to consider the latter in much the greater danger, from the fact, that the sailor is entirely ignorant of his position; he does not see it like the mill worker, therefore he cannot avoid it; the ship may be running straight, direct into danger, through no fault of the commander, but from a culpable neglect and omission of the *owner infinitely greater and more reprehensible than that of the mill owner!*

The true state of the case is, we don't get the *Times* and the great leading journals of the day to advocate our cause, and thunder forth the rights and wrongs of seamen. If an unfortunate factory worker be crushed by machinery, the whole country is up in arms against the mill owner, and nothing seems too bad for him. But we sailors, what do we get?—When we are sent to the bottom by wholesale, from causes absolutely within ordinary human control?—Why, we get something like this:—“The *Neglected* sailed from Liverpool, September 9th, 1869, bound for *Insurance*, and has not since been heard of.”—Pleasant intelligence for the British public! Brief, but emphatic!—Heard of? no,—nor yet cared for, by those to whom we have a right to look to for protection. Of what use to us is telling

us that the insurance offices are the natural remedies and correctives of this state of things. The answer is—that the competition among insurers is so great\* that practically an owner can send his ship to sea as deep in the water as he pleases, aye, and as inefficiently manned too, and equipped and stored as he has a mind to do! Should the ship be lost, and the insurers resist payment on the plea that she was unseaworthy, it must not be forgotten that the burden of proof lies with them, an extremely difficult matter, seeing that the vessel with her unfortunate crew is at the bottom of the sea!

As this paper of Mr. Rundell's may not have been seen by the bulk of our profession, let us reproduce some of it.—He says :

“When preparing the last report of the Liverpool Compass Committee, now six or seven years since, I was constantly impressed with the thought that, while laborious experiments were being made in certain selected iron vessels of the merchant navy, while compass observations made in those ships in port and at sea were being discussed, and while other observations to be made at sea were being waited for, the great majority of commanders of iron vessels were going on without assistance, and were finding, by experience, modes of overcoming the very great difficulties of their position. It is to the lasting honour of the masters of the merchant navy, that they did and still do, so constantly and so successfully, combat the complicated and unforeseen deviations to which the compass in an iron ship is liable, and this in spite of the alleged malpractice, and the unwarranted assertions of interested compass adjusters. There has been far too much of vague assertion concerning the number of iron ships lost through compass errors. Those who have carefully watched the records of wrecks and casualties will agree with me that comparatively very few disasters can be traced with certainty to this cause. It is admitted that some iron ships have been lost from unsuspected compass deviation, that some have been wrecked through *the omission of owners to have the ship swung before leaving port,*† and some from ignorance of the grossest kind in their commanders. But it is also true that the percentage of loss from these causes is extremely small, too small to sensibly affect the premium of insurance on iron vessels, and that, as a rule, they are as successfully navigated as wooden ships. I do not say, as regards compass management, that they are skilfully navigated, that proper care has been taken to reduce to a minimum the magnetic errors which perplex the commanders of iron vessels. But that success has been attained by constant watchfulness and extreme caution.

“These remarks bring me to two other topics included in the recent correspondence :—The supervision of compass adjusters. The education and examination in magnetism of the masters and mates of iron vessels.”

\* \* \* \* “The improvement of compass adjusters is, however,

\* The case of the *London* in our Volume for 1866, is a fearful proof of this.—ED.  
 † The italics are ours.

a matter of small importance compared with the instruction of the masters and mates of iron ships in the elements of magnetism and the practice of compass adjustment. In fact, masters are now sometimes called upon to perform, at sea or in foreign ports, and under difficulties, what the compass adjuster does quietly in port. A vessel sails with a cargo of machinery, and returns with a cargo of cotton; whether her compass has been corrected with magnets, or by means of a carefully observed table of errors when she first leaves port, of what use will either be on the return voyage? Or, take an East India voyage (and I calculate that between 200 and 300 iron ships of more than 1,000 tons each make this voyage yearly),—and let us trace the ship's progress part way. An adjuster has compensated the steering compass in the ordinary way, and the standard compass is either corrected by magnets, or by a table of errors, or both, as may be required by her master. By this adjustment the dangers of the English Channel or the Irish Sea are avoided, and it may be that no compass errors of importance are observed until the ship is well south, say 'running down her easting,' in lat.  $38^{\circ}$  to  $40^{\circ}$  S. Here the captain observes six or seven points of error in the steering compass. This is a little embarrassing, but probably three points are cancelled by variation, and he may only have to steer S.E. to make a true east course. But the men at the wheel complain that the card is not steady, or that it rests in any direction,—the compass has no directive power. The master is then compelled to do something, and he tries 'shifting his magnets.' It is useless to say that the commanders of iron vessels ought not to alter the position of the magnets, which have been fixed by the adjuster; as they continually do so, and often through urgent necessity,—the true remedy is, to instruct them how to do it effectively. This much of the practice of adjustment is absolutely necessary to their position, and there seems no valid reason why they should not be instructed in the process, and their ability in this respect be tested, and the result be endorsed upon their ordinary certificates."

"The Liverpool Compass Committee were so convinced of the necessity for instructing masters and mates in the elements of magnetism, that in February, 1861, they addressed the Board of Trade on the subject; and, twelve months after this, again wrote to the Board as follows:—I quote the letter verbatim, as a part of the history of the subject, and as shewing the views of some of the leading ship-owners of Liverpool:—

"Liverpool, 25th March, 1862.

"To F. H. Farrer, Esq., Secretary Marine Department Board of Trade.

"Sir,—I am directed by the Liverpool Compass Committee to respectfully refer you to their letter of February 13th, 1861, and to your reply (2,661) under date of March 14th, 1861, in which you state that—'The recommendation of the Committee, with regard to the voluntary examination of masters and mates in questions relating to the magnetism of iron ships, will receive the consideration of this

Board.' In again asking the attention of the Lords of the Privy Council for Trade to this subject, I am directed to quote the following from the Astronomer Royal's letter to the Board of Trade, of March 21st, 1857, as printed at the commencement of the Compass Committee's first and second Reports :—and generally, I would submit for consideration, whether it is not proper that a knowledge of the method of correcting the compass, and adjusting the correcting apparatus, should be required in the captains of iron ships. The Compass Committee are strongly impressed with the conviction that a number of the officers of the mercantile marine would willingly prepare themselves for a voluntary examination of the kind proposed : and that such an examination would tend much towards the safety and the skilful navigation of iron ships and steamers. Should the Lords of the Privy Council for Trade think favourably of the recommendations which have been made by the Astronomer Royal and by this committee, I am directed to further suggest that masters and mates who pass the proposed examination should be granted a certificate, or should have this fact endorsed upon their certificate of competency, and have some distinguished mark placed against their names in the Mercantile Marine List.

" I have honour to be, Sir,

" Your obedient servant,

(Signed) W. W. RUNDELL, Secretary."

Then Mr. Rundell continues :—

" Whatever differences of opinion may exist as regards the possibility, or the utility, of inspecting the compass outfit of iron vessels, or on the supervision of compass adjusters, I trust that the verdict of this Institution will be entirely in favour of an extension by the Board of Trade of their present system of granting, after examination, certificates of competency to masters and mates. This system has confessedly, done much to raise in intelligence the officers of the merchant navy. The vast increase which is taking place in our fleet of iron vessels, and the present agitation respecting the management of their compasses, show that something is required. The plan suggested by the Astronomer Royal, supported by the Liverpool Compass Committee, and recently brought forward by the Royal Society, by aiming at the instruction of the navigators, takes the most direct step towards attaining the desired end—namely a more easy, safe, and skilful navigation of our iron ships : and it is in the power of the Board of Trade to immediately commence this good work." So says, Mr. Rundell.

It will be seen that the gist of Mr. Rundell's paper is to induce the Board of Trade to raise the standard of examination of masters and mates especially with reference to the compass. Now much as we seamen commanders desire to see our profession elevated, we nevertheless take decided objection to this proposal of Mr. Rundell's, and simply on the principle of free trade. At the present time we think the Liverpool shipowners get far more value out of their masters and mates than they pay for. Therefore we emphatically protest against

being further taxed by a demand on our education and intellect, unless they will pay an equivalent and commensurate remuneration. Doubtless they would be very glad to see Mr. Rundell's suggestion carried out, with the addition of finding our own compasses, and paying the expenses of swinging the ship. They would not be surprised at anything from persons who take the trouble to officially libel us, and make a report to the nation that we are unfit to be trusted with spirits on board. We thank them. Such is *our* view of the subject, and as it is one which is *not often* placed before the "Lords of the Privy Council for Trade," perhaps we may be over sanguine and ambitious if they should find the present paper worthy of their notice.

Perhaps no one has done more than Mr. Rundell or Mr. Towson towards giving us the best practical information on the compass. Their labours have been great, and we herewith tender our mite of thanks. They are men of much influence in Liverpool, good influence; and we sailors are about to take the liberty of directing their attention to a great evil; one which does most effectually prevent the advance of knowledge and education of mates, especially with regard to the compass. The Board of Trade, the Royal Society, all scientific bodies and men, including probably Mr. Rundell and Mr. Towson, and the public at large appear to be profoundly ignorant, that nearly all the chief mates in Liverpool ships receive the munificent sum of—30 shillings—per week while in that port. Let this be repeated in large characters, such that our shore cousins may easily see—30 shillings—a week, all told—nothing more—no board wages, and please spell it out thus:—thirty shillings a week! There is a necessity for this repetition, because the amount is so disproportionate to the service that the public would be certain to say:—"Nonsense, that cannot be, it must be a typographical error surely." No, Sir, it unfortunately is a very unpleasant fact, as many thousands of our first class chief mates can vouch for. If that is not one of the most effectual barriers to the advance towards a scientific education in masters and mates especially with reference to the compass, take us as ready for a lunatic asylum. How can you expect men of education, men able to find co-efficients A, B, C, D, and E, telling you all about permanent and subpermanent magnetism, semicircular and quadrantal deviation, etc., etc., to the satisfaction of Mr. Towson. How can such persons come forward as mates for the merchant service, when the most necessary co-efficient of all is wanting:—viz., £ s. d.? He had better go and take a crossing in the streets than work for thirty shillings a week. Surely the shipowners of Liverpool should be ashamed of themselves. Yes, Liverpool, for after a long and extensive acquaintance with London, 30s. a week given for a chief mate's services were never heard of. *Five shillings* per day, absolutely less than the riggers get, and always less than any mechanic. And this is the return for the services of a man who is expected to carry a good coat on his back, to appear respectable, to have the charge and care of sometimes *not less than* £100,000 worth of property. A man who has to pass a public examination before he can earn his livelihood in that



capacity,—one who is visited with severe punishment if he commits himself, and who is further expected to acquire a fair scientific education, far superior to that which would be required of a clerk on shore. This is the man whose important services are remunerated with the munificent, the liberal sum of thirty shillings per week. Surely, Liverpool will wipe out such a disgrace as this. Can Liverpool really suffer it to become permanent? Liverpool is renowned for her gigantic commercial progress, for her superb public buildings, for her munificent charitable institutions, for her princely merchants, and her liberal support of all charities. Has she not justice or charity to mete out to her merchant officers and seamen?

It is not possible to believe that such men as Mr. Graves, Mr. Rathbone, Mr. Horsfall, Mr. Brocklebank, Messrs. Lamport and Holt, Mr. Bates, and Messrs. Bibby and Co., allow *only* thirty shillings per week to their chief officers. The last two named firms are noted for their liberality to their masters and mates. In such a case, surely they will use their influence to induce other merchants to allow their mates, at least, their sea wages while in port. Why should a mate, who has eight pounds per month and his board at sea, be reduced to thirty shillings a week without board when he arrives in Liverpool? Such treatment is incomprehensible, and let us hope that Mr. Rundell and Mr. Towson will use their influence to improve this condition of affairs. It is a stigma on Liverpool, indelible it may be, but pointed out as one yet to be remedied, if not by this, still with some further reasoning in these pages. Can those Liverpool gentlemen imagine a mate with thirty shillings a week leaving a family at home, while he is away? What must be his feelings when he is put to his wit's end to supply those little necessaries of even his little ones. Then let Mr. Rundell, or the Liverpool Compass Committee, tell us if that man is fit to grapple with those co-efficients of A, B, C, D, and E, etc. Mr. Rundell himself would break down in such a case. And maintaining such views, the Board of Trade has acted wisely in not raising the standard of examination required from mates.

Much as our profession is loved and should be elevated, all the efforts of our best men will be ineffectual so long as the Liverpool shipowners so persistently keep it down. And Liverpool may depend on this, that it is useless to expect a higher scientific education from mates with such prospects before them. From whence is it that we are to look for the mercantile service afloat for recruits. What educated man would like to see his sons adopt a profession where they are so systematically ill treated? No!—If Liverpool cannot treat them better than she does, let them rather be in their graves, than that they should become mates of Liverpool ships on thirty shillings a week! Such a remuneration for the services of a mate is disgraceful. The attention of all our noble and wealthy merchants in Liverpool is respectfully called to this subject, that there may be, after all, some other aim and end in this world than to make money. There is a duty to our fellow-men which no one can ignore, and as they kneel in their finely cushioned pews on a Sunday, they should remember the words of

St. Paul, who says, "Masters, give unto your servants that which is just and equal; knowing that ye also have a Master in heaven."

Being in entire ignorance of whom the Liverpool Compass Committee consists, it may be inferred that there are no shipowners in it, because the matter is entirely in their own hands. Let them take steps to raise the pay of their mates,—to give them in port their sea wages, with an allowance for board, and most assuredly a higher standard of education will follow, and it would not be necessary persistently that they should memorialize the Board of Trade to that effect. Let them do so to those firms who pay only thirty shillings per week; ask them if it is a fair and just wage for the performance of an important and trustworthy duty: and might not the Mercantile Marine Service Association lend its services in this direction.

Enough, perhaps, for the present is here said to prove that there is the most urgent necessity for Government supervision over our compasses, and the no less urgent necessity for a powerful moral force being brought to bear on Liverpool merchants, who pay thirty shillings a week to the chief mates of our finest East India and colonial trading ships. Imperfect as these expressions may be here, they may yet win the united endeavours of all good and liberal minded men about Liverpool, who wish to see the masters and mates of that gigantic seaport second to none in the kingdom; and that their social position may be much improved for the benefit of themselves and their country. For such desirable objects these sentiments are here the first instalment of the humble endeavours of—

QUOD VERUM TUTUM.

*At Sea, July 20th, 1869.*

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BRITISH MERCHANT SEAMEN.

*By a Commander, R.N.*

*(Continued from page 540.)*

THE Government relieved the shipowner of the responsibilities attendant on the settlement of wages by the institution of shipping offices, in which all engagements are agreed upon and terminated, and therefore the odium of evils connected with the system of payment is in some degree transferred to the Board of Trade. But by a peculiar division of authority, whilst the responsibility rests with the Government, the actual power is exercised by the Local Marine Boards. These chiefly consist of antiquated sea-officers and small shipowners, the representatives of the worst nautical traditions, and especially so of that antagonism which existed in the worst times between employer and employed. Whatever measures an enlightened public opinion may suggest commonly meet with resistance from these Local Boards, and the feelings which they embody are apt to descend to their

subordinates, whose interest lies rather with the local powers than with the central responsible authority. The personal experience which these gentlemen naturally gain of the questions we are discussing, gives to their opinions an overdue weight, which seamen have some reason to deplore. Hence it happens that the officials who were appointed for his protection, are not always looked upon by the seaman with a friendly eye, nor is the crimping interest in any great degree disturbed by the exertions of these local powers.

It is not alone the delays attending the payment of wages which works into the hands of crimps, but also the amount of money accumulated in the owners' hands, which is now paid in a lump, at the very time most convenient to the crimp. What other class of workmen are kept, as in the first instance cited by Mr. Greatorex, eighteen or twenty months; or, as in the second case, ten months, without their wages? What becomes of their families meanwhile? Nobody, least of all his employers, seems to think the sailor has a family. Indeed many good people think he ought not to have a family; that the laws of God were not meant for the sailor, but that he should give reins to his passions like a beast. This view is defended on some show of expediency, though all experience proves that most of the diseases of sailors spring out of their vices, and that respectable married seamen are better behaved, stronger in body and mind, more capable of exertion, and more willing to work in emergencies than their necessarily diseased comrades, whose undermined constitutions are apt to give way under climatic changes, or succumb to malarial influences. Many of the coasting seamen are married, and they are the hardiest and the hardest worked denizens of the sea. Surely, then, it is reasonable to enquire how it is that a man, with a family dependent on his exertions, is kept ten months or twenty months out of his earnings? and why he receives the whole sum at such a time, and in such a manner, that it goes in one lump into the hands of the crimps? It is these large payments of back wages which make it worth the while of thieves to devote themselves to this special branch of ruffianism. If the seaman's family could receive a moiety of his wages monthly in his absence, should he so desire, as is invariably the case in the Royal Navy, the crimp's trade would be so much the less profitable. When one thinks of the sufferings which are entailed upon the families of seamen by the refusal to give them a moiety of the wages of the husband and father at his request, and then sees how this money, of which they are thus heartlessly defrauded, is thrown, as it were, by the owner into the hands of the crimps, it is impossible not to cleave these two evils under the same head.

It not unfrequently happens, that parishes are called upon to contribute to the support of the thus pauperised families of seamen, even when a considerable amount of wages has accumulated in the hands of their employers, some of which the seamen may be desirous of "allotting." The Merchant Shipping Act has, as usual, an inoperative specific for meeting this contingency, and compelling the owner to give an "allotment note," or "monthly note," or "half-pay,"

as it is variously called. The section on this subject requires that the sailor's wife should enter the workhouse, or receive out-door relief, and that the guardians should then recover the outlay from the recalcitrant owner. The Report of the Committee for Improving the Condition of the Merchant Seamen recommends that, on the complaint of the parish authorities, police magistrates should be empowered to enforce the periodical payment of a certain limited sum to the wife or family by the shipowner, provided he fails to show that an "allotment note" has been granted, or that the money due to the seaman amounts to less than one month's wages, or if voyaging beyond the two great Capes, to less than two months' pay. And in case it should be found that the owner had paid away more than had been earned by the seaman (owing to his sickness, death, or desertion), then, in that case, the owner shall, upon the order of a magistrate, be reimbursed by the parish in which the seaman's family reside. This would certainly be an improvement on the law as it now stands, but there would still be grave doubts as to the parish authorities feeling any warmer interest in the seaman's family than his employer; and if they failed to take action, either because of the trouble or fearing the possibility of having to reimburse the owner, the starving family would be no better off than at present. We are driven, then, to enquire into the motives of the owner in declining to pay the seaman's family a reasonable moiety of his accumulated wages.

The interest upon the wages of the crew of a large ship on a long voyage, is a considerable item, which falls to the share of the owner so long as they are unpaid. This consideration does, no doubt, weigh with many employers, and would in itself, suffice to deter a grasping speculator from granting allotment notes to his men. But we cannot ascribe so unworthy a motive to the mass of shipowners who refuse such payments, nor is the objection, in any case, capable of defence. We believe that the plea commonly made on their behalf is, the fear of desertion on the part of the seaman. The plea is not without weight, but it is quite evident that the amount of weight attached to this plea is exaggerated when ten or twenty months' wages, or £20 to £50 are allowed to accumulate. There is no part of the world in which seamen can desert, from which news of the desertion could not be received in less than two months; hence two months' wages in hand would suffice to prevent an overpayment of allotment money. And it may be ruled that, in cases of desertion, the price of the necessary telegram be charged against the deserter's wages, more than a few days need hardly elapse between the desertion and its report to the owner.

When we enquire into the causes of desertion in foreign or colonial ports, we find that grave suspicion exists on this head against the employers themselves, whose officers are stated, in some trades, to purposely drive their men, by irritating or tyrannical conduct, to desert, when there is a likelihood of their ships being detained. By this means the expenses of the ship are reduced. Another fertile source of so-called desertion at colonial ports is to be found in the

**Advance Note**, which, by throwing a month's wages, often at a very high rate of pay, into the hands of the crimps, makes it their interest to entice seamen to desert, or to drug their liquors and convey them, in a state of intoxication, on board the new ship when about to proceed to sea. These are two principal sources of desertion quite within reach of correction.

There are, however, other incitements to desertion, such as the high wages or rich prospects of the gold countries, and other exceptional ports. The prevalence of desertion tends to degrade seamen by inducing a want of self-respect and a vagabond-like, unprincipled character. It was at one time not uncommon in the Royal Navy, but the introduction of pecuniary and matrimonial ties to their own country and service, and an improved and moral character, have done much to destroy that habit, except amongst a few worthless individuals, whose departure is commonly looked upon as a public gain. The best stay to desertion will be found in moral elevation, provident habits, and matrimony. The allotment note being only payable to the immediate relatives of the seaman, is itself a first step in that direction. On the contrary, the advance note, with some advantages, is attended with many evils tending to demoralise the seaman. It is, as we have seen an encouragement to desertion in colonial ports, and both at home and abroad it is found to be, in the hands of the dissolute, an encouragement to the crimp.

In the prospect of obtaining a month's wages in advance, the thoughtless seaman squanders his past earnings, and runs into debt to the amount of the expected advance. Then when embarked, he feels that during the first month he is working in the interests of his natural enemy, the crimp. To desert during the first month is, under such circumstances, only to cheat the crimp, and sailor morality sees in that only the play of "diamond cut diamond." Even if opportunity do not arise for deserting during that period, the diseased débauchée, suffering the consequences of the crimp's artifices and feeling himself to be working in the crimp's interests, often becomes a lazy, troublesome, and discontented servant. On the other hand, to the respectable seaman, whose family are denied an allotment note for a monthly allowance of wages, the advance note is a great boon; whilst it affords also the means of procuring a fresh outfit of clothes. This latter object could be effected, by the captain taking a slop-chest to sea, and then the substitution for the advance note of a monthly note, payable to a near relative, would at once discourage the crimp, and support the family. When the advance note is given, it must necessarily defer the period when a full month's wages are in hand, with a surplus for the payment of the allotment note, until about three or more months have elapsed. For these reasons many experienced officers are in favour of the general introduction of slop-chests, and the substitution of half-pay notes for the month's advance of wages.

Whilst the owner should be obliged to give an allotment note in every reasonable case, he should not be liable to loss. This end might be accomplished if every seaman having a "very good" conduct

certificate were entitled to allot a given portion of his wages to a near relative, at the discretion of the shipping master. The signature of this officer to the note should commit the Government to any overpayment the owner might make in consequence of the death or desertion of the man, provided always, that it was proved that proper measures had been taken to recover the deserter, and for the immediate stoppage of the allotment. To cover the risk incurred by the Government, a sufficient percentage might be charged on all allotments so countersigned, thus forming a sort of insurance fund against loss. This crying evil would thus be met at the cost of those seamen who profited by its removal.

We have already pointed out the loss of labour and the danger to the ship, arising out of the practice of unmarried seamen embarking in a diseased state induced by the immoralities of the shore; and thus going out of reach of medical aid in an unfit condition for the exposures and exertions of life at sea. The constitution so undermined renders the men liable to all sorts of diseases, and in the absence of medical men, the contents of the medicine chest are apt to be employed without skill, adding to the possible dangers of the complaint, the no less critical danger of poisoning. In the "Return relative to the Deaths of Seamen in the British Merchant Service during the Year 1867," only twenty-seven deaths are directly ascribed to diseases of the urinary and genital organs; but of the 2,043 deaths, exclusive of those arising from accidental or violent causes, we have little doubt that, in the great majority of cases, the diseases originated in or were accelerated by vicious indulgences. The tabulated causes of death are those alleged by the masters of the vessels, without any medical or other enquiry, and grave doubts must consequently exist as to the truthfulness of the return.

But the medical returns of the Royal Navy enable us to form a fair judgment of what is likely to occur in a service in which a far more dissolute body of men, with contagious and other diseases upon them, are taken to sea in ships without a medical staff. We have, therefore, little hesitation in pronouncing these 2,043 deaths by disease to be, in the majority of cases, accelerated by sensual indulgence; just as we have still less hesitation in ascribing the majority of the 3,188 deaths which are registered as accidental, to causes which a court of law ought to be called upon to investigate. It was probably the consideration of these circumstances which induced the Committee for Improving the Condition of Merchant Seamen to "most earnestly recommend, that the application of the provisions of the Contagious Diseases Act be extended to the water-side parishes of the chief mercantile seaports," and that men offering themselves for shipment in foreign-going vessels should be medically examined, as is "universally done in the Royal Navy." The latter suggestion has since become the subject of abortive legislation in the "Merchant Shipping Act, 1867." In that Act the advantage of medical inspection of seamen is acknowledged, but it is made dependent on the voluntary action of the "Local Marine Boards," bodies from whom the sailor can expect no

consideration or assistance, and whose chief office appears to be the obstruction of useful reforms.

How the Board of Trade could have expected that part of the Bill which depended for its application on the will of such well-known obstructives to be other than the dead letter which it has proved, is difficult to understand. Even if this first obstruction were overcome, a second one is provided in the rule that the medical inspection shall, in each case, be dependent on the special application of the, perhaps, highly-insured owner or his deputy, the master, who must pay certain fees to the Mercantile Marine Fund. Then, to securely prevent all possible application of the Act, it is ruled that the seaman himself, who knows that his employment depends upon his hiding his diseased and unfit condition, is required to be a consenting party to the medical examination. In the case of the Royal Navy nobody has any choice in the matter; every applicant for employment must consent to be medically examined, or give up the idea of going to sea, and the necessity for such inspection is shown in the number of cases in which rejection follows. If that be so, in a service in which each ship carries one or more surgeons, how much more essential must it be when men are to be taken away for months out of reach of all medical aid!

The other recommendation of the Committee, for the extension of the Contagious Diseases Act to the water-side parishes of the chief commercial seaports, would confer upon merchant seamen the same benefits which have accrued to men-of-war's men from that Act. There appears to be a peculiar necessity for the extension, arising from the frightfully diseased condition of the female crimping agents, and the large number of continually changing persons to whom they convey the contagion. The Act has, where applied, been accompanied with moral influences which have been instrumental in rescuing many of the pitiable objects from their degrading existence; and we might hope that the wretched women who infest the watersides of our chief commercial seaports might also receive moral benefit as well as physical relief. It is to be regretted that this recommendation did not receive adoption in the Act of 1867, nor receive that attention from the shipping community to which it is entitled.

Whilst, however, we thus endeavour to protect seamen from the consequences of their vices, we should not shut our eyes to the cause of them. We have already noticed that there exists amongst the higher ranks in the sea service an idea that seamen should not marry, but ought to gratify their animal passions without restraint, as the saying is, by "having a wife at every port." The gentlemen who advocate this practice are not necessarily dissolute or ungodly men themselves, and it is somewhat strange that they should so entirely set at nought the law of God, which, without respect of persons, announces that "whoremongers and adulterers He will judge." That the seventh commandment will ever continue to be set at nought by both landsmen and seamen may be very true; but upon what principle can Christian gentlemen, professing to be disciples of Him who was "holy, harmless, and undefiled," boldly advocate the practice as right,

proper, and necessary to other Christian men in a particular calling in life? If such violent abuse of a holy command, to which dire penalties are annexed by a pure God, be an essential part of a sailor's calling, then we have no hesitation in saying that it is an outrage on Christian principle to become a sailor at all; and that it is the duty of every God-fearing man to enter a protest against boys or men going to sea.

The father of lies has had far too much to do with the governance of both the royal and mercantile navies, and it is only necessary to reduce his sophistries to plain English, and to bring them to the bar of public opinion, to meet the universal reprobation which they deserve. This has been most intelligently and fearlessly done by that excellent officer Captain Henry Toynbee, in his "Sailors' Wants, and How to meet them," in which he takes married seamen into his special favour. This monstrous principle—that seamen ought not marry—lies at the root of most of the customs and regulations which have grown into use at sea, from which all the immorality, improvidence, and recklessness of sailors flow. And as it would be monstrous to foster profligacy with one hand, and religion with the other, we have in this dissolute principle the germ of that ungodliness for which sea-officers and their employers are responsible. How could officers, or owners, and Local Marine Boards who hold such views, take the lead in encouraging seamen's missions in port, and vital religion at sea, without a conscious contradiction, which would do violence to even a callous conscience? whereas these gentlemen are often, in other respects, very respectably religious individuals, and fathers of well brought-up families. "These gentlemen," writes Mr. Charles Dickens, "have a vague notion that blackguardism and efficiency go together, and that all contrary effort is cant. 'You'll curb their spirit, sir, and take the dash out of 'em; besides, you'll never do it, sir, believe me.' Now, all this is very melancholy and absurd, and must be got rid of before the condition of English seamen can be improved." Those who know how deeply this dissolute principle is rooted in the system of managing seamen, will understand the importance which Captain Toynbee attaches to its exposure and contradiction, and with what indignation it has been received by those who are responsible for its continuance. "These sentiments which you have expressed," writes a seaman to Captain Toynbee, "are unpalatable to the majority of shipowners in England. They do not wish to see sailors become sober, prudent men; if they did, sailors would soon know their rights, and, knowing them, would not hesitate to demand them. What greater evil could befall the Jews, crimps, publicans, and prostitutes of London, than to see the sailor become a prudent, thinking animal?"

Captain Toynbee espouses the opposite principle to that generally in favour amongst employers of labour at sea. He says: "It is an ordinance taught by the Bible, that men and women should marry, and it is also taught by world-wide experience, that any restraint upon a wholesome *prospect* for marriage injures both men and women, by depriving them of one of the greatest safeguards to the youth of both sexes." Again, he says: "It will be universally allowed, that the



*prospect* of a happy marriage is the best state for all young men and women, preventing much vice, even if they do not marry in the end; and in spite of all difficulties, sailors, and I believe soldiers also, who are married, are the steadiest men. It, therefore, becomes the duty of every Christian, and the interest of the nation, to do all in their power to improve the position of the army and navy in this respect, for no other earthly means can help them out of their almost insuperable moral difficulties. No doubt the long continuance of the present bad system has done much to demoralize both the men and the women for whom we are pleading, just as long slavery makes a nation almost unfit for freedom; and time will be required to raise them to a higher moral standard." To this prospect of honourable marriage, when his time comes, Captain Toynbee adds that of keeping his wife and family respectable. "It is of the very first importance, it is striking at the very root of the evil, to induce sailors to look forward to honourable marriage with a respectable woman. Now, unfortunately, as few can expect it, they are often led into early vice; and, with others who are married, their profession exposes them and their wives to very great difficulties. I honestly confess that I think nothing but the very highest Christian principles could enable any man or woman to act rightly under the circumstances in which many sailors and their families find themselves placed."

If this desired end is to be achieved, the system of allotment notes, by which a portion of the accumulating wages of the absent husband may, at his desire, be transferred from the owner to the seaman's family must be encouraged. And the family of the seaman must be safely and comfortably housed, and some little thought bestowed upon them by his employers. Even in the Royal Navy seamen are required to go to distant parts of the world for four or five years together, without any care whatever being bestowed by the Government on the families of their employées. Many are the sad stories of poor women thus left by their husbands in dangerous neighbourhoods, betrayed to their ruin by designing ruffians. Even the limited recognition given to the soldier's wife is denied to that of the man-of-war man by the Government. This is simply a relic of the past, in which sailors were not supposed to have wives, but to content themselves with breaches of God's law, such as are still in favour amongst the leaders of the Mercantile Marine. The difficulties of the sailor's wife are indeed great, but they would be far from insuperable if she had the smallest recognition from the *employer*. Chief amongst these difficulties are the denial of the allotment note and the absence of fitting house accommodation. Heretofore we have been providing Homes for unmarried sailors, but the married man and his family have, as we have seen, failed to receive recognition either from the employers, or from the George Peabodys or Miss Burdett Coufts of the philanthropic world. Of the necessity of such married-sailors' Homes, Captain Toynbee writes: "During my last voyage I talked over this subject with eight married men in the crew, and found that their own wives were favourably circumstanced, being allowed their husbands' half-

pay, and earning something themselves, and most of them living with their friends. But they could all tell a sad tale of widely different cases; of sailors' wives at public-houses all day long; of wives *left without half-pay*; of one of these latter even forced to pawn her wedding ring, yet keeping respectable; and, most numerous of all, of women going utterly wrong during the absence of their husbands. Now, this was *mainly caused* by the helpless state in which they were left, not by the fact of the husband being absent ten months of the year; for this latter happened to the wives of the eight to whom I spoke, yet they, in their happier situations, continued faithful to their husbands. Therefore, if we improve their circumstances, we may save many a man and woman from leading a miserable and vicious life, and at the same time increase the number of steady seamen."

Another well-informed authority on this subject, the Reverend Dan. Greatorex, says: "I have never known, neither have I ever heard of a sailor's wife misconducting herself, if she was a respectable woman *before* he married her. They will bear the greatest privations. They generally try to get needlework, washing, or charing. I visited a family two days since (before 14th December, 1866), the woman covered umbrellas at two shillings per dozen, and if regularly employed can earn two shillings per day of sixteen hours; but if she earns four shillings per week it is as much as she can get regularly. There were five children; eldest, a boy, earns two shillings per week; four younger ones had *six* articles of clothing between them, no shoes, no socks; the woman only *three* articles upon her, stays being one of them. They were almost starving; her husband was paid off at Melbourne, having quarrelled with his captain. The family must have suffered terribly during the year, yet her character is unimpeachable. Six other families live in the same house. They are always packed far closer in the houses they live in than they could possibly be in any 'Homes.'"

It has been proposed to meet the wants of married sailors by the construction of model lodging-houses, or rented barracks, at each of the great commercial seaports, for the exclusive use of the families of those who are actually serving at sea. Vacancies, if any, might be temporarily occupied by the widows or families of deceased seamen, but they should be required to vacate them when the first-named applicants come forward. Though it would not be advisable to fill up vacancies in this way too readily, as seamen frequently go from one port to another, and it may be desirable in certain cases that their families should follow them, and find the best accommodation at the new port which they can afford, the object to be kept steadily in view being the protection of the families of seamen actually afloat. These married-sailors' Homes might contain single rooms with the usual offices for the accommodation of families in which none of the children are more than seven or eight years old, for a sum of two shillings per week; and also sets of two and even of three rooms for those who can afford to pay more. School-rooms, recreation grounds, bath and wash rooms with drying accommodation might form part of the scheme. A superintendent on the premises being charged with the care of the

whole, might often prove useful in their semi-widowhood and half-fatherless condition by advising them in difficulties, and being a medium of communication between them and the employers of their husbands or the possible ones of themselves.

The "Improved Industrial Dwelling Company" has been able to build such dwellings (without, however, the contemplated superintendence, etc.), and return five per cent. on the capital invested. But this percentage is not sufficient to induce ordinary investors, who desire the highest rate of interest in the market, to come forward. Philanthropic gentlemen have, however, been found willing to embark money in the company at this rate of interest, for the construction of dwellings for the special use of their own employées. The company avow themselves ready to erect similar blocks of buildings, on condition of a subscription for shares amounting to about one half the cost. It is, however, to be remembered that this five per cent. return has been received upon model lodging-houses, which command higher rents than could be paid by sailors' wives and families; and that the proposed married-sailors' Homes are intended to be of a somewhat lower class, paying a lower rent than those which have been hitherto built. Whereas the usual cost for the erection of family homes, giving two rooms to each, is £2500 for every twenty families, it has been computed that the proposed married-sailors' Homes, with one room to each family, let at 2s. per week, could be built to yield the same percentage at the rate of £7000 per hundred families. But with the contemplated additions, it is not likely that this money could be made to return more than three per cent., even if the superintendent's and school-master's and mistress's salaries were, as is proposed, furnished from other sources. Such a return cannot be reasonably expected to attract speculators, but if unmarried-sailors' Homes have been built without any pecuniary return whatever being expected by the donors, might we not hope that some philanthropists exist with the heart, if not the depth of pocket, of George Peabody, who would be satisfied with such an abundant moral return for their outlay, as the builders of the unmarried-sailors' Homes have received? £10,000 would be the maximum outlay on every hundred families, supposing the project to receive its fullest development on a philanthropic scale, and that the rents were applied to the supply of mental and spiritual training, and to the erection of accommodation for an increased number of families. Large as this sum is, it is not so large as many other sums annually bestowed by large-hearted men on benevolent objects. But if the scheme must be made to pay its three per cent., then the schools and superintendence, etc., must be provided from other sources, and it would speak ill for the wealthy shipowners and merchants of England, if, the want once acknowledged and their attention once fixed upon it, they failed to see it supplied. In March, 1863, the Bengal Chamber of Commerce addressed a letter to the Lord Mayor of London, stating that the attention of the commercial community of Calcutta had been called to the necessity, first, of "providing Homes for the wives and children of married seamen; second, to the establishment of a Benefit

Fund for pensioning aged and decayed seamen." They requested his lordship to convene a meeting, with a view to drawing attention to these subjects. The Committee add, "not only will the families of seamen benefit, but great advance towards the moral improvement of the sailor will be gained by assuring to him, when absent, the comfort of his family. Further, the Committee believe that the demoralising scenes so often witnessed in foreign ports, would greatly diminish."

A meeting of merchants, shipowners, officers, etc., was accordingly called at the London Tavern, on June 5th, 1863, when, in the unavoidable absence of the Lord Mayor, Sir James Duke, bart., M.P., presided, at which Captain Toynbee recommended, amongst other things, that a company should be formed to build "a Home for Married Sailors," to be managed purely on business principles, the rent going towards the repairs and interest for the money expended; the additional wants, which are peculiar to the families of absent sailors, being made a matter of pure charity from those who benefit by the husbands going to sea. After much favourable discussion, an influential committee was formed, including merchants, shipowners, and officers of the Royal and mercantile marine, who subsequently commenced the formation of a limited liability company, with a capital of £20,000 for building Homes for married sailors, and they also undertook to get up a Benefit Fund and Life Insurance, to which every sailor might subscribe. Unhappily, at this juncture, the exigencies of his profession took Captain Toynbee to sea, and in his absence the whole scheme fell to the ground. Since this abortive attempt, much experience in the construction of industrial dwellings has been gained by Sir Sydney Waterlow's efforts, and the Peabody Committee, etc., which show that the undertaking is not so very difficult of realisation as it may have appeared in 1863; and we may hope that if the friends of seamen are led to realise to its full extent the importance of the object to be attained, a second attempt will not be so readily abandoned.

Mr. W. Henty, who, as a member of the Committee for Improving the Condition of Merchant Seamen, devoted his special attention to this subject, rightly says, that "until comfortable homes are within their reach, most seamen are virtually kept from marrying. The want of such homes, in conjunction with other causes, render the contingencies that now affect the married life too great for most to venture on, and are too often found, when entered upon, to result in disruption of the family ties, in consequent vice and misery."

One of the first effects of the encouragement of marriage will be that of lengthening sailors' lives; and the fact that widows and orphans will be involved in their deaths, may make it necessary to be a little less reckless in squandering lives at sea. Marriage and sobriety will at once produce a marked effect on the return of deaths from disease; a little attention to sanitary rules on shipboard will produce a like result; and the law must take measures to reduce those in the columns headed "accidental(?)." The combined influence of these three, in some measure, preventable causes, upon the longevity

of the crews of foreign-going ships, results in the break down of their health after the early age of 35 years, whilst the expectation of life does not extend beyond the 40th or 45th year. Of the 5,283 deaths which occurred at sea in 1867, only seven were of men over 60 years of age, 106 were over 50 years old, and 459 were over 40 years, whilst no less than 2,443 were between 20 to 30 years of age. These numbers include officers, stewards, and others who cannot be classed for comparative purposes with *bonâ fide* seamen, and it is not impossible but that a more careful return would disclose that the greater ages belong to these collateral classes. We have already called attention (see *Fraser's Magazine*, vol. lxxv. p. 265) to the reckless violation of the most elementary sanitary rules; and (vol. lxxix. p. 171) to the so-called "accidental" deaths, which account for three-fifths of the whole number, and stated our reasons for believing that the best life-saving apparatus would be a court of law, to investigate the cause of death in every case of "accident," such as is employed when a landsman's life has been suddenly terminated. If the legal protection which is afforded to the sufferers from colliery explosions, railway collisions, builders' negligence, or the other manifold causes of sudden or unnatural death on shore, were extended to British subjects at sea, our life-boats would find much less occupation, our newspapers less painful tales of unnecessary gallantry at sea, and we should not have to record 3,188 deaths by accident in 1867. Let then, wives, employers, and lawyers be encouraged to do their duty, and we shall have far less disease, fewer accidents, and a longer span of life at sea.

We are contemplating, in the destruction of crimps, and the erection of married-sailors' Homes, a complete change of principle, which implies the introduction of provident habits, the formation of Pension Funds and Life Insurance and Benevolent Funds, based on a Government guarantee, and managed by its officers. For we must not suppose that we can change the old pernicious system of vice and ungodliness without introducing a new system suited to the requirements of honesty and morality. Men who spend their lives at sea, must have their provident savings managed for them by those who stay at home; but from their ignorance of money matters they are apt to be misled by designing persons, or still more frequently, their affairs are apt to get into negligent or ignorant hands, by which they are so mismanaged as to bring ruin upon all concerned. For these reasons the objections entertained by seamen to Benefit Funds, etc., are based on practical experience of their inutility, quite as much as upon that recklessness which has been heretofore too much encouraged in them. Much has been successfully done by the unmarried-sailors' Homes to promote provident habits amongst foreign-going seamen; and by their wives to the same end amongst coasting seamen. Coasting seamen, being more at home, are better able to look after their own affairs, and they have formed various funds of this sort, with more or less success; but it is generally felt amongst foreign-going seamen, that schemes of this kind are too precarious, when under private management, to be depended upon; whilst we need hardly add that the whole crimping

influence is strongly exerted against Savings' Banks, Benefit Societies, and Provident Funds of all kinds.

One most important effect of such provident habits would be the prevention of desertion, an evil of which we have already spoken, and the deterring seamen from quitting the service of their own country. as both their accumulated money and their families must, in either case, be given up.

It has been suggested that the Pension Fund and the Life Insurance should be so far associated that seamen should have the power of transferring all or a portion of their money to the Life Insurance, if at any time they wish to provide for a near relative, or of transferring it from the Life Insurance to the Pension Fund for their own benefit. The age at which such pensions should begin would be dependent on the adoption of the life-preserving measures which we have recommended. In that case, pensions might begin at the age of thirty-nine or forty, as in the Royal Navy, with the privilege of receiving an increased pension if its receipt was deferred to a later age. For the purposes of such calculations it is to be hoped that the Registrar General of Seamen will be able to procure more reliable and more full death returns, including the number of persons employed during the year, and the voyages upon which the deaths occur. It is strongly recommended by many experienced officers, that a minimum subscription to these funds should be rendered compulsory. It is argued, that such compulsion would be acceptable to seamen generally, whilst a purely voluntary subscription would fail, in consequence of the efforts made by crimps, and others, to prevent the more thoughtless seamen saving their money. It has also been suggested, that when an allotment note is not accepted the advance note of which we have previously spoken might be granted, provided it was made payable into the Pension or Insurance Fund as an additional subscription, but otherwise the payment of wages in advance to be suppressed.

Another measure which the proposed increase of matrimonial conveniences would suggest is the formation of a Marine Accidental Insurance, on the same principle as the Railway Accident Insurance Association. A traveller by railway can, by the payment of three-pence when taking his travelling ticket, ensure the receipt of £1,000 to the relative named, in the event of his death during a single journey, irrespective of distance; or in case of his being totally disabled by injuries received during the journey, it will entitle him to £6 weekly; or if the injury sustained be of a partial character, he becomes entitled to £1 10s. per week whilst so disabled. The sum of five shillings will ensure £200 to a railway traveller in case of death by accident, whilst travelling any distance any number of times within a whole year; and it will ensure him proportionate sums during total or partial disability arising from similar causes of injury. It is suggested that, upon a similar principle, a sum of £25 could be insured to the family of a sailor in the event of his accidental death, by the payment of 1s. 6d. or more, according to direction, duration, and season of the voyage; or, in case of his suffering accidental injuries a proportionate

allowance. It would become the care of the wife to see that, at the time of his engagement, he paid the requisite sum to the shipping master. In the event of his accidental death, the sum named would be about equivalent to that now received out of the Greenwich Hospital Fund by the relatives of men-of-war's men in like circumstances, and it might suffice to set the widow up in some way of earning a livelihood. The insurance of effects is another object deserving attention, though we have before recommended that when ships have been lost through default of the officers or the equipment, seamen should have a claim upon the owners for loss of their property, in the same manner that passengers now have. The establishment of the cause of shipwreck ought, therefore, to be the first concern; and this as we have already shown (vol. lxxix. p. 175), "can only be accomplished by the institution, in every case of a proper trial before the ordinary courts of law. The prosecutions in such courts would, it is believed materially affect the tables on which life insurances would now be calculated; we should, moreover, still require more accurate and detailed returns from the Registrar General of Seamen, as to the particular voyages and times of the year in which insurance risks are to be expected.

In conclusion: a change of moral principle appears to be called for in the treatment of seamen. This can only be effectually brought about by raising the tone of the officers; arousing the employers to a sense of their moral responsibilities as regards the families as well as the person of their servants; and such a re-constitution of Local Marine Boards as may lead them to take a higher view of their functions, or as may result in the transference of their powers to the responsible body, the Board of Trade.

So far as the suppression of the more obtrusive and successful action of crimps is concerned, this has been effectually attained at Liverpool by the co-operation of the Local Marine Board and Mersey Dock and Harbour Boards, in the joint surrender of the oversight of the docks and river to the municipal police. With the object of preventing crime, the police have adopted measures for the conveyance of passengers and seamen, with their baggage, from the shipping in the docks, without the intervention of crimps. Cab-stands and licensed porters being thus provided, constables have been appointed to exclude crimps from the docks, pier-heads, and wharves altogether. If the London Local Marine Boards and Dock Companies be equally sincere in their desire to remove the disgrace which now attaches to their failure, it is very unlikely that the metropolitan police will offer any objection to undertaking the task which has been so well accomplished by the municipal force at Liverpool.

But, successful as the repressive measures adopted at Liverpool have proved with respect to the docks and river, they have not destroyed the crimping system in the town; for we learn that 1279 sailors were apprehended for drunkenness during the last year.

To destroy the crimping system altogether, we must take away the necessity out of which it grows; and to this end it is suggested:—

1. That the wages, provisions, and duties of seamen should be continued up to and include the day of discharge ; and that the payment should take place within the docks, from whence the crews could be taken, if they desire it, to the railway stations, without loitering in the immediate neighbourhood.

2. That respectable boarding masters, living in certain districts, be licensed by the police.

3. To reduce the value of robberies on seamen, and to make provision for their families in their absence : that monthly allotments of wages to near relatives should be compulsory on the owner in the case of all " very good " charactered seamen who are desirous of obtaining the indulgence. That the signature of the shipping-master to the allotment note should render the Government liable for over payments, provided proper measures are taken to recover deserters and report desertions. To meet this responsibility a percentage to be charged to the seaman on every allotment note countersigned by the shipping master.

4. Advance notes to be discontinued whenever allotment notes are granted, and in other cases should not be issued except as additional subscriptions to Life Insurance or Pension Funds.

5. That Life Insurance and Pension Funds be established by the Government in connection with shipping offices ; a minimum payment to which should be compulsory.

6. That an optional Insurance Fund should be formed against accidents at sea during given voyages, on the payment of the requisite premium, similar in principle to the annual premiums of the Railway Accident Association.

7. That an association be formed for the construction of Seamen's Family Lodging-houses, or Married-Sailors' Homes, for the especial use of the wives and children of those who are actually serving at sea.

8. The State having provided for the spiritual needs of all its subjects above low-water mark, but left those whose homes are outside the boundaries of our parishes and dioceses wholly uncared for, it is essential that other provision be made for the extension of Christian teaching to our seamen.

All thinking seamen are agreed that the moral dangers to which, as a class, they are exposed when in port, are far more destructive to health, and contribute far more to the shortening of life, than all the so-called perils of the deep. However much we may surround them with safeguards, and exercise a practical supervision, all such efforts must fail of complete success, if we continue to ignore the true basis of morality, soul-saving, life transforming Christianity. We do not under-estimate what is being done by the Thames Church Mission, the Mersey Seamen's Mission, the Seamen's Mission, and other excellent missionary societies, when we point out how desultory their best efforts must be, how rarely foreign-going seamen receive their instructions, and what ill-timed opportunities they have of impressing religious convictions upon ignorant and demoralised seamen. Much, doubtless, is thus done in port, but this great and good work cannot be efficiently



conducted until owners and officers agree to do it in the quiet times on shipboard at sea. It is satisfactory to observe that the shipowners of Liverpool liberally support the Mersey Mission, but it is equally sad to observe that the Thames Church Mission, and Seamen's Mission, and other associations, are chiefly worked and maintained by naval men and civilians wholly unconnected with the mercantile marine. It is also a happy sign that the British and Foreign Sailors' Society has induced 432 captains to hold public prayers on board their ships, and to avow their proclivities by hoisting a white flag with a blue star when in port on Sundays. Many others who have not thus registered their names are restoring this ancient Christianising custom, and we are not without hope that the higher tone of moral duty which has of late years been revived in the Church on shore may, ere long, find its way into the Church afloat. We have more faith in the fair dealing, thoughtful consideration, and high principle which true religion brings with it, than in compulsory legislation. But in the meantime we must be glad of any measures which may give to well-conducted seamen and their families reasonable protection, and snatch the others from those degraded habits, moral and physical, which have made British merchant seamen a byword and a reproach throughout the world.

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#### THE WRECK REGISTER AND CHART FOR 1868.

As the year rolls round, and in the midst of great storms, this sad tidings of disasters at sea, the Wreck Register, makes its appearance, and brings afresh to our recollection the scenes of desolation witnessed on too many parts of our coast last winter. And there was probably never published by the Board of Trade a more doleful though instructive record of shipwrecks in one year, than the one that has been issued within the past few days.

Yet it is satisfactory to find that no gales of remarkable duration and violence occurred during the past year, such as took place in 1866 and 1867; and that the number of wrecks is accordingly less than in those years. The records of the fearful storms of last January, when some half-dozen life-boat houses were demolished, are not included in this return; but we fear that the accounts of those gales, when published, will be found more sad than any that have occurred within living memory, not excepting the storms that wrecked the *Royal Charter* and the ship *London*.

It appears that the number of wrecks, casualties, and collisions from all causes on the coasts of the United Kingdom, and in the surrounding seas, reported in 1868, is 1,747. This is fortunately 343 less than the number reported in 1867 (2,090), and 113 less than the number reported in 1866 (1860). It seems that the number of ships lost or damaged in the 1,747 wrecks, casualties, and collisions reported in 1868, is 2,131, representing a registered tonnage of upwards of





427,000 tons. The number of ships in 1868 is less than the number in 1867 by 382. The number of ships reported is in excess of the number of disasters reported, because in cases of collision two or more ships are involved in one casualty.

The following short statement shows the annual average of wrecks reported since 1850, divided into three periods of five and one of four years:—1850, 660; 1851, 1,269; 1852, 1,115; 1853, 832—making a total in those four years of 3,876 wrecks and casualties, and giving an average each year of 969. In 1854, 987; 1855, 1,141; 1856, 1,153; 1857, 1,143; and 1858, 1,170. Total in five years, 5,594, or an average annually of 1,118. In 1859, 1,416; 1860, 1,379; 1861, 1,494; 1862, 1,488; and 1863, 1,664. Giving a total in the five years ending 1863 of 7,441, and an average in every year of 1,488. In 1864, 1,390; 1865, 1,656; 1866, 1,860; 1867, 2,090; and 1868, 1,747. Total for the five years to the end of 1868 of 8,743. The average number of wrecks annually in the same period being consequently 1,748.

It will thus be seen that the number of wrecks reported during 1868 is just below the average for the last five years, but is in excess of the average of all the years previous to that period. With the exception of the numbers reported in 1867 and 1866, the largest number of wrecks ever reported in one year is unhappily given to the past year.

Undoubtedly these 1,747 shipwrecks in one year on our coasts appear a very large number. Yet it should be constantly borne in mind that our great commerce receives every year fresh development. As the Registrar-General at Somerset House accounts for the increased number of deaths in the metropolis and other large towns by the increase of the population, so we may safely account for the large number of these disasters at sea, by the great increase every year of ships frequenting our coasts and narrow seas.

The *Register* takes note of the most fearful gales that occur in given years. Thus what is called the Royal Charter gale of 1859, wrecked 343 ships. In three months in 1861, there were 460 wrecks; in three months in 1862, there were 540 vessels lost; and in the gales of six months of 1863, 930 ships came to grief. Again in November, 1864, there were 264 wrecks; and yet the total number of wrecks in that year was 274 below those of 1863. In 1865, the gales of January, February, March, October, November, and December, gave 766 wrecks; in the following year (1866) the gales of the corresponding months consigned 793 ships to destruction. In the West of England the gale of the 11th of January in that year will never be forgotten. In Tor Bay alone 61 vessels were wrecked on that day, accompanied by the loss, as far as could be ascertained, of 35 lives. In 1867, the heavy gales of January, March, April, October, November, and December, added 980 wrecks to the list. Thus when it is manifest that whenever any storms take place on our coasts, we can most safely conclude that it is attended by fearful shipwrecks and loss of valuable lives. It is, however, consolatory to know, with equal

certainty, that at such periods every possible effort will be made by our noble life-boat crews and others to save life, whenever it is possible to approach the distressed sailor.

Some of us will remember that one of the most serious gales of the year 1868 occurred on the 22nd and 23rd of August, a month in which our inland population crowd at our sea sides, and in which our shores are seldom visited by heavy gales. The number of wrecks and casualties reported during that month was more than double the number recorded during the same month in any previous year.

The gales of 1868 were chiefly from the following directions, viz. :— January, from S.S.W. and S.W. ; February, from the S.W. and W. During the months of March, April, May, June, and July no heavy gales were experienced. The August gales were from the S.W., S.S.W., and N.W. ; September, E. and S.W. ; and December, from the W., S.W., S.S.W., and S.E.

Of the 2,131 ships wrecked in 1868, 1,801 are known to have been ships belonging to Great Britain and its dependencies, with British certificates of registry, and 272 were foreign ships. Of the remaining 58 ships the country and employment are unknown. Of the British ships, 1,317 were employed in the British coasting trade, and 484 were employed in the (over sea) foreign and home trade. Of the foreign ships, 20 were employed in the British coasting trade.

Of the total number of wrecks (1,747) reported in 1868, 379 were collisions, and 1,368 were wrecks and casualties other than collisions. Of these 1,368 wrecks and casualties other than collisions, 527 were wrecks resulting in total loss, and 841 were casualties resulting in partial damage more or less serious. The whole number of wrecks and casualties other than collisions reported in 1867 was 1,676 ; and that number was more than the number reported in any year since 1858. But 1,368—the number of wrecks and casualties other than collisions in 1868—is less than the number of wrecks and casualties in 1867 by 308.

Of the 527 wrecks—*i.e.*, total losses from causes other than collisions—265 happened when the wind was at force 9 or upwards (a strong gale), 71 arose from defects in the ship or in her equipments (and of the 71, no less than 46 appear to have foundered from unseaworthiness),—87 appear, from the reports made by the officers on the coasts, to have been caused by inattention, carelessness, or neglect ; and the remainder appear to have arisen from various other causes.

Thus, excluding collisions, 158 total wrecks last year are clearly and directly traceable to the carelessness and indifference of man. It is also a remarkable fact, that from these very casualties the greatest loss of life takes place, inasmuch as the wreck is sometimes instantaneous, arising from the rottenness of the ship, bad anchoring gear, and other prolific sources of mischief, rendering it hardly possible for any succour from the shore to arrive in time to save the lives of the crews.

We learn again that of the 841 casualties—*i.e.*, partial losses from causes other than collisions—487 happened when the wind was at

force 9 or upwards (strong gale), 123 arose from carelessness, 82 from defects in the ship or her equipments, and the remainder appear to have arisen from various other causes.

It is really a disgrace to us as a nation, to learn from this authentic record that the total number of ships that foundered, or were otherwise totally lost on our coasts from unseaworthiness, unsound gear, etc., in the last ten years, is 482; and the number of casualties arising from the same causes, during the same period, and resulting in partial damage, was 531. We have no record of the loss of life from these wrecks, but it must have been frightful.

Again, there were 131 wrecks and casualties to smacks and fishing vessels, in 1868. It is always a fatal proof of the severity of a gale when fishing smacks are lost. But excluding these 131 fishing smacks, the number of vessels employed in the regular carrying trade that have suffered from wreck or casualty during the year was exactly 2,000. If this number be again subdivided, it will be found 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. For the six years ending 1868, the number is more than half.

In 1863, of the collier class, 989 vessels were lost; in 1864, 844; in 1865, 934; in 1866, 1,150; in 1867, 1,215; and in 1868, 1,014; making a total, in six years, of 6,146 vessels lost, in too many cases, from clearly preventible causes. The loss of life from these very disasters can only be counted by thousands!

It should, however, be borne in mind that the storm often proves destructive to ships of all classes and all ages. Thus, in the ten years ending in 1868, disasters to comparatively new ships bear a very high proportion to the whole number, for 176 wrecks and casualties happened to nearly new ships, and 297 from three to seven years of age. Then there were wrecks and casualties to 420 ships from seven to fourteen years old, and to 653 from fifteen to thirty years old. Then followed 267 old ships, from thirty to fifty years old. Having passed the service of half a century, we come to the very old ships, viz., 35 between fifty and sixty years old; 28 from sixty to seventy; 9 from seventy to eighty; 8 from eighty to ninety; and the ages of 238 are unknown. In former years we have had, when unattended with loss of life, to rejoice over the destruction of ships of one hundred years old and upwards; but this year no casualties have been reported to vessels of known greater age than ninety years. The officers of Coast-guard and Customs, in their wreck returns to the Board of Trade, frequently call attention to the state of rottenness, and of want of repair of some of the ships above twenty years old. Even at the age of twenty-five to thirty, it sometimes 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, or being saved by a life-boat.

The classification of these disasters in this Register is very clearly given, and calls for a public acknowledgment. We accordingly find that of the 2,131 vessels lost or damaged in 1868, 86 were rigged as

ships, 150 were steam ships, 594 schooners, 312 brigs, 250 barques, 243 brigantines, and 197 smacks; the remainder were small vessels rigged in various ways. Of the 2,131 vessels referred to, 989 did not exceed 100 tons burden, 772 were from 100 to 300 tons, 248 were from 300 to 600 tons, and 122 only were above 600 tons burden.

From the table showing the parts of the coasts on which the wrecks and casualties happened, it will be seen that as usual the greatest number occurred on the East Coast. The numbers are as follow :—

East Coast, 823; South Coast, 202; West Coast, 427; N.W. Coast of Scotland, 64; Irish Coast, 189; Isle of Man, 22; Lundy Island, 16; and Scilly Isles, 4.

From the accompanying Wreck Chart, the wrecks thus delineated can be brought vividly before the mind's eye. The same Chart also shows us the numerous life-boats that are now happily found in these scenes of desolation and despair, bringing succour, often under the most trying and perilous circumstances, to hundreds of sailors, who, in their absence, must inevitably have perished. Yet, notwithstanding all these noble and continued exertions on the part of our life-boats' crews, who, in many instances, are prepared to face death themselves, if a brother's life is to be saved, we record with the deepest regret that the loss of life on or near the coasts of the United Kingdom, in 1868, was 824!

We appeal again to shipowners themselves to help the efforts and the noble work of the NATIONAL LIFE-BOAT INSTITUTION, and, no less meritorious, that of the Board of Trade, in respect of its thoroughly efficient rocket apparatus, to reduce this death-roll by every means in their power. Riches gathered at the waste, apparently, of so much human life cannot, one would imagine, yield to the possessor any lasting benefit. Apart from the untimely end of these 824 poor creatures, let us reflect for a moment on the widows and orphans and aged persons and relatives who were thus made desolate in one short year; and these would have been quadrupled had it not been for the unceasing and successful exertions of the NATIONAL LIFE-BOAT INSTITUTION, the Board of Trade, shore-boats, and other means, in saving last year alone the lives of thousands of shipwrecked sailors on our coasts.

Again, we observe that the number of lives lost in 1868 is 509 less than the number lost in 1867, but is, unhappily, in excess of all other years excepting 1867, 1866, 1861, and 1859 (the *Royal Charter* year), when the number reached 1,647. The lives lost in 1868 were lost in 196 ships; 141 of them were laden vessels, 42 were vessels in ballast, and in thirteen cases it is not known whether the vessels were laden or light. 164 of these ships were entirely lost, and 32 sustained partial damage. Of the 824 lives lost, 262 were lost in vessels that foundered, 86 lives were lost on board vessels in collision, and 409 in vessels stranded or cast ashore.

Nearly 90 lives were lost in fishing-boats alone. We trust the loss of life from fishing-boats will be diminished year by year as the

qualities of the safety fishing-boats of the NATIONAL LIFE-BOAT INSTITUTION become known and appreciated by our fishermen.

The remaining 67 lives lost were lost from various causes, such as by being washed overboard in heavy seas, by explosions, etc.

Whilst the greatest number of wrecks happened on the east coast of England, the greatest loss of life during the ten years ending in 1868 occurred in the Irish Sea. The number of lives lost in the Irish Sea during the ten years is more than double the number lost on any other part of the coasts.

The winds most destructive to shipping during the past year were as follows: N., 53; N.N.E., 46; N.E., 88; E.N.E., 56; E., 61; E.S.E., 35; S.E., 64; S.S.E., 56; S., 74; S.S.W., 160; S.W., 223; W.S.W., 144; W., 120; W.N.W., 108; N.W., 116; and N.N.W., 55. Showing that westerly gales are more destructive than easterly gales; the most destructive being from south-west.

The following table distinguishes the wrecks in 1868 according to the force of the wind at the time at which they happened: thus 661 happened when the wind was at force 6 or under, that is to say, when the force of the wind did not exceed a strong breeze, in which the ship could carry single reefs and topgallant sails; 154 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 835 happened with the wind at force 9 and upwards, that is to say, from a strong gale to a hurricane.

Force of Wind.		Vessels.
Calm ... ..		17
Light air. Just sufficient to give steerage way ... ..		21
Light breeze	} With which a ship with all sail set and clean full, would go in smooth water	1 to 2 knots 3 to 4 knots
Gentle breeze		
Moderate breeze		142
Fresh breeze	} In which she could just carry in chase full and by	Royals, etc. ... ..
Strong breeze		Single reefs and T. G. sails ...
Moderate gale		Double reefs and jib, etc. ...
Fresh gale		Tripple reefs, etc. ... ..
Strong gale		534
Whole gale, in which she could just bear close reefed main-top-sail and reefed foresail ... ..		195
Storm. Under storm staysail ... ..		53
Hurricane. Bare poles ... ..		53
Variable ... ..		...
Unknown ... ..		97
Total ... ..		1,747

It appears that there are at present 210 life-boats on the coasts of the United Kingdom belonging to the ROYAL NATIONAL LIFE-BOAT INSTITUTION, and 40 to local boards. The rocket and mortar apparatus



stations now number 279, and are under the management of the Coast-guard and the Board of Trade.

During the year 1868, and the first nine months of 1869, 969 lives (besides 35 vessels) were saved by the life-boats of the National Institution alone, and 558 by shore-boats and other means, for which it granted rewards. A sum of £4,036 was expended by the Institution in the same period in rewards for saving life; and £33,000 on its various establishments round the coasts of the British Isles.

In the presence of facts like these the Life-boat Institution need have no misgiving in respect to pecuniary support whilst it pursues vigorously and successfully the great and national objects for the promotion of which it was established.

It is peculiarly encouraging to find that in proportion as the sphere of the operations of the Institution has increased, its Committee of Management and Officers become deeply sensible of their great and responsible duties, and of the high trust which the British public has reposed in them. Its local Branches, and the sailors who are ever ready to man the life-boats, fully participate in this feeling of responsibility; and so long as this mutual feeling is maintained and fostered, the cause of suffering humanity cannot fail to gain by the well-directed efforts of the Life-boat Institution.

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#### FORBES'S PROPOSED SAILS FOR SHIPS.

HAVING in our last number given the reader an account of the important proposal of our correspondent, Mr. Forbes, to remodel entirely the system of managing and setting the sails of ships, the annexed sketch is added in which is shown a ship rigged according to those proposals. We do not intend discussing the conditions which might be foreseen, wherein the advantages, or failings of his method might be traced, yet we are satisfied that the former are sufficiently apparent to justify us in recommending a trial of the whole system. For we have seen enough in it, to induce the belief that not only has he secured in it one great object (a reduction in the risk of life), but we believe also that the sails are better set, flatter, *losing no wind at the foot*, so common at present, and that they require a lesser number of hands for their management than is required by those of the present system. We have no doubt that these are facts that will be hereafter established, and although the merchant shipowner would be the man to first take the advantage of it, when it is considered what sails are, Government ships (which are never the first to try new schemes) would find out the great advantage above mentioned;—one that would leave more hands free to manage the ship's armament.

However, these things may be, whether the plan turn out successful or not, our own duty, as journalists, of promulgating the system is

done. As we have already said, its own merits alone must be its support, and those which we could enumerate are not a few. Therefore, in taking our leave of it, we cordially wish it that success which, in our opinion, it so richly deserves.

A few words more may yet be added in reference to the present drawing.

The reader of these pages, who is a seaman, need not be reminded of those standing or leading stays, which he sees in their places here; and which have been already described to him, with their reference to the former drawings in our October number.

These leaders or jack stays (as they may be called), marked *a* in Plate I., are fast at their upper ends, but are to have means for being slackened or tightened (by lanyards or otherwise) at their lower ends.

The spars *b* are attached to the sails, and must be strong, leaving the space as represented in the drawing, between them and the yard above them, for clearance of the stays, etc.

To take in a course, the process would be to slack down the tricing lines and haul on the downhauls; double in the sail at the outer cringle of the head to the lower end of the leading stay, and the sail is subdued.

When sails are reefed (a process very seldom necessary with this rig), the space between the head of the sail and the yard is merely increased: nothing more.

To reduce sail when scudding, or in squally weather, lower away more or less until the squall is over, hauling the head cringle down to the lower end of its leading stay, and the sail will be reduced as represented in the drawings.

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## DESCRIPTION OF THE SHORES OF THE STRAIT OF SAN BERNADINO, PHILIPPINE ISLANDS.

[Translated from the *Anuario de la Direccion de Hydrografia*, Ano VII., Madrid, for 1869.]

### CONTINUATION OF THE COAST OF LUZON.

(Continued from page 519.)

CONTINUING from Catananan towards Mulanay at the distance of a mile from the shore the depths would be from nine to ten fathoms on a sandy bottom, and between Point Ajus and the western one of Mulanay there is a bay in which good anchorage may be had.

What is called the port of Mulanay is nearly a triangular bay, the longest side of which is the opening, about two-thirds of a mile across; in the interior angle or head of the bay there is a large river on the southern bank of which is the town of Yendo. In mid-channel the depth is three fathoms, and on each side stones. From the S.E. point of the bay a rocky reef extends well out that sometimes uncovers at low water.

*Coast between S.E. point of Mulanay and Bondog Head.*—Between the S.E. point of Mulanay and Bondog Head there are four points, the coast included between that of the port and that which follows forms a small elbow in which a reef is concealed. The land is mountainous, and shore covered with mangroves with patches of sand. At the distance of a mile and a half from it the depth is 15, 18, 20, and 25 fathoms, and all the small intermediate points have reefs off them.

*Coast between the two first points.*—The coast between the first and second point trends nearly S.S.E., and close to the second there is an opening formed by the separation of the mountains and a river falls into the sea. Half a mile from this the depth is 14 and 16 fathoms sand and mud, and the shores about the third point are fringed with reefs some rocks of which are dry.

*Second and third points.*—The second and third points form a bay about a mile and a half deep, the shore of which is rocky.

*Mountains between Mulanay and the second point.*—The mountains which from Mulanay form the coast as far as the second point, afterwards make a short turn to form the head of a bay.

*Coast between the opening of the second and third points.*—From the said opening as far as the third point the coast is low with several hills towards this point. The beach is partly mangrove and sand. The depth at half a mile from it is 30 fathoms sand. With the third point about E.N.E. half a mile from it, the bottom is stones diminishing from 30 to 10, and from 10 sandy to 4 fathoms rock.

*Bondog Head.*—The headland of Bondog has several open bays with sandy shore and excellent anchorages on sand about them. The depths gradually decrease so that at a short distance from the shore there is 10 fathoms. There is a river close to and on the heights and plains of the country, the former covered with trees and the latter with grass, there are large herds of deer, and they are frequently seen but very difficult to kill.

The pilots of the Strait differ much as to which of the points belongs the name Bondog. Some say it is the height to the north of the most southerly point of the Headland; others that it is the high mountain which is on the W.N.W. part of the said point: but in order to distinguish this locality, consider it the southernmost point of the head, and so name it accordingly. This and all the part to the N.E. is rocky, but the lower ground soon follows, and continues as far as point Arena, affording good anchorage, only requiring attention to a rocky shoal about E.N.E. of point Bondog, about two miles from it, and only one from the nearest part of the shore.

From point Arena to the southward of the bay of Sombacogon the sandy shores follow, and in navigating along them a vessel may anchor anywhere, excepting near the strand, where it is rocky.

*Bay of Sombacogon.*—The bay of Sombacogon is next seen where country boats resort for anchorage, but there is a large rock in the midst of it, leaving a channel between it and the shore. In the N.W. part of the bay is the town of the same name. The north point of the bay has a reef extending from it to the S.E. in a semicircular form,

under which there is good sheltered anchorage in four fathoms; fine sand.

*Island of Atibija Ban.*—The shores of this island, which are to the N.E. of the bay, are very foul. But towards the southern part on the western side there is a small space where anchorage may be found in 16 fathoms, sand, free from rocks to the west, but very rocky to the east. The shores of the island, between its north and south points, form a continuous series of rocky shoals, and so unequal is the depth, that in one place four fathoms are found to one of distance (sic).

*Bank of Island Atibija Ban.*—The north point forms, in the reef itself, a bay with a sandy bottom, with four and five fathoms water. The island in this part is particularly woody. To the northward of it there is a bank of sand about a mile across, the surface of which is about two feet above water. It is rocky on all sides, and the strand even is a reef covered with sand, called Palad.

*Bearings* :—Between it and the island there are 10 and 15 fathoms shells and sand. It is of an irregular figure, its greatest length being north and south. This bank may be found with the northern point of the port of Puzgo, N.  $51\frac{1}{2}^{\circ}$  W., and the north point of the island S.  $13^{\circ}$  E. It may be seen from a great distance, and even at night sufficiently far for avoiding, especially if the sky be clear.

The north point of the bay of Sambacogon, with its northern part, forms a bay which is scattered over with a multitude of rocks which extend out nearly to the channel. But they form together a shoal of three fathoms, and the marks for it are point Arenas, S.  $7^{\circ}$  E., and point Gorda to the northward of Puzgo, N.  $21^{\circ}$  W.

*A bank of five fathoms.*—Running to the S.E. for the island from the same shoal, a bank of sand is found at a short distance, with but five fathoms on it. But none of these banks impede the navigation of the channel, as a vessel has not to work by the wind. The direction of it appears N. b. W., and the depth about it is from 25 to four fathoms, muddy sand.

*Port of Puzgo.*—The port of Puzgo is very narrow in the direction of N.E. and S.W., but it is long enough from north to south. At the northern mouth it is about a mile across, but it soon contracts, so that at about the middle of the length of the port the channel is reduced to a hundred yards, but afterwards it increases inwards.

From the southern mouth or interior to a short distance from the narrow or neck of the port there is five and a half to eight fathoms sand or mud, but in order to attain it, it is necessary not to leave the channel which is very narrow. In the interior which is tolerably extensive there is as much as four fathoms.

*Palad Shoal.*—About S.E. of Puzgo is the Palad Shoal, to the south of which a vessel may cross the bay, there being plenty of water.

*Port of Pasacao.*—The port of Pasacao on the east coast of the bay of Ragay is between two heights, and the whole coast afterwards as far as point Macoto is formed of sandy beaches with good anchorages. Between the river Pasacao and the little bay of Macoto there is another

little bay at the foot of the high ground. It is even capable of receiving large vessels, but affords little shelter from north to south-west.

*Point Macoto.*—N. by W. from point Macoto there is a shoal about half a mile from it and about half a mile in extent. It may be seen from a great distance, for although it does not uncover it has so little water over it that it appears like a large green and white patch. In the channel which it forms with the point there six and seven fathoms.

*Bay of Macoto.*—The bay of Macoto has an islet off its western point: it has a clean strand and is bold. From the shore towards the eastern part of the entrance a reef extends which is too near the mouth and which must be avoided by vessels going in to the westward. It affords no shelter from S.E. and south.

*River Donzol.*—From the said bay to Marigondon there is good anchorage everywhere excepting off the point where some rocks extend off a quarter of a mile to the bar of Donzol which is but a brook. But it throws out a sand bank a short half mile from the strand with very little water on it.

*Port of Putiao.*—The channel into Port Putiao is in the middle of the mouth leaving the islet off the point on the left hand. But it is necessary to enter lead in hand and with small sail to keep the channel, for there are rocky shoals on both sides which dry at low water. In the mouth there are 25 to 10 fathoms mud.

*Port of Parlatuan.*—The port of Parlatuan has scarcely three fathoms mid channel although it has five and six inside. To get into it a vessel must be towed and sound to keep the channel and avoid the rocks which appear at low water at above half a cannon shot, and it is necessary to be very careful if requiring to enter into Bagatao.

#### DESCRIPTION OF ISLE BURIAS.

The island of Burias has no other harbour than that formed by its northern head with the island of Busin. In the channel there are some good bays with no less good holding ground and sufficient depth even for large vessels. In particular towards the middle there is a space of eight and nine fathoms muddy bottom, where a vessel may lie entirely protected from wind and sea. The land of this port has but little supply of water.

In a bay which is about one-third the breadth of Silango entering by the N.E. mouth on the south side of a mountain in the northern part of it there is a rivulet, from which water may be obtained even in dry seasons, that is very good.

The western mouth of the port has a very narrow channel and hence is dangerous for vessels to enter and leave; but that to the eastward is better, for in spite of its want of width owing to its low points and the reefs not being very extensive it is easy to find its middle as the wind is quite fair for entering.

*Port of Busin.*—This entrance may be known by the headland of the island of Burias which is higher than that of Busin, and has some

yellow patches between the woods, and moreover the part of the coast of Silanga forms some very abrupt heads.

*Entrance.*—Coming from the S.W. part of the strait much care is required to keep clear of a rocky shoal to the north of Isle Raza which commences at two leagues outside of it and the extent of which is unknown. By day it may be known by the colour of the water. The entrance by the south of Anima Sola is more free from care. For besides the shoal to the S.W. of the same islet which is of no great extent, by keeping from it and sounding her way a vessel may come to an anchor in case the wind or any circumstances prevent her from taking Silanga. It is an anchorage that may be useful to a vessel that is desirous of immediate shelter.

*Deceptive mouth.*—The island of Burias at about the middle on its eastern side has beaches in the vicinity of which a vessel may anchor. The whole of its western shore is sandy, with some dangers, as banks, and especially about the Deceptive mouth, but they do not extend far out. The said deceptive mouth is north-east and south-west of isle Sibugan, and east by north and west by south of the northern head of Romblon.

*To recognise the Boca Enganosa.*—Coming from west to east from the island of Burias, being low and somewhat flooded, this part of the island may be mistaken for the channel which it forms with Masbata, a mistake which in thick misty weather of the vendavals has occasioned the loss of some vessels. In order to avoid this mistake it must be remembered that from the small channel which is formed by the head of Bondog and the north point of Burias, to the south of this deceptive mouth is at the highest land of this island; and that the other portion from the said mouth to the southward has a much lesser altitude and the middle part of it bears from the peak of Albay N. 38° 37' E. The island is only inhabited by some few natives who have occasionally had huts on the north part of it although some distance from the shores of Silanga.

#### DESCRIPTION OF THE PORT OF SORSOGON.

The port of Sorsogon is decidedly the very best to be found in the whole Strait of San Bernadino. It has three mouths by which it may be entered. But that formed by the island of Bagatao and Malumahuan is adapted for the use of large vessels: for the little channel between the island of Luzon and the shoal thrown out by the isle Malumahuan, although with five and six fathoms in it, is exceedingly narrow: and the same may almost be said of the little mouth to the east of isle Bagatao. Even to enter by this in a launch, the shore of Bagatao must be approached, because it is clear, and which cannot be said of the opposite shore.

*Isle Bagatao.*—This island has at its southern port a sand bank of considerable extent with 12 to 14 fathoms good holding ground, so that a vessel overtaken by bad weather, and unable to make a port, may find some refuge here, taking care to observe that the said sandy

bottom on nearing the mouth of the port is not so good, being mingled with stones.

*Anchorage.*—When inside the port a vessel may anchor where suitable. If large she must not approach the vicinity of Sorsogon, for from the third part of the extent the depth decreases 20 fathoms. But there is the satisfaction of knowing that the whole of the ground is mud, and that in the event of touching it, a vessel cannot do herself much harm.

*Provisions.*—Within the port of Sorsogon there are several towns at which rice and beef may be had in abundance, also fowls, etc., and vegetables, but no flour.

*Coast from Sorsogon to Point Bulac.*—The coast of Luzon from the entrance of Sorsogon and the channel of Bagatao to point Bulac consists in some parts of broken ground, but mostly of sandy shores, which with a gentle slope affords good anchorage at a proportionate distance, even for large vessels. More than half the distance between Bagatao and Bulac there is a small scarped height which indicates a place from whence a sand bank stretches off, which is here tolerably extensive with only six feet of water over it.

*The river and town of Bulan.*—The town of Bulan (formerly Gate) has a river, the bar of which has but five feet on it at low water. Within this, however, it is navigable with but little change of depth. The town is seated on the right bank at a short distance inside. On the bare sandy point which extends out a tolerable distance is a Bantayan or some kind of fort.

*Point Angas.*—From that point the coast trends about S.E. by E., consisting of low sandy land. Point Angas is the first elevated point seen, and between the two points is the bay of Otabe, not very extensive in land, but of moderate depth and sandy bottom.

*Bay of Butag.*—Point Angas forms with that of Barugo next to it a deep bay called Butag. Its western point has a reef off it, which faces the shore containing the port, and the eastern point also has a small reef, and in the direction of the two points there are 16 to 18 fathoms. The shore of the bay is mountainous in some parts towards the shore and well wooded, and the depth of the water in it admits of vessels of all kinds.

*Bay of Marinap.*—The bay of Marinap follows this, formed by points Barugo and Lipata, also fit for any vessel, and the shore consists in part of sand and mangroves.

*Isle Cavaruan.*—Point Lipata forms a small shelter which terminates in that of Cavaruan, and this gives its name to another bay, the east point of which is point Tagiran.

*Point Tagiran.*—This point of Tagiran is formed by a small hill which belongs to the high mountains of the Cordillera. It looks as if cut off horizontally at its summit, in which there is a small tolerably even meadow, which being of a lighter green than the rest of the coast renders it visible from a great distance. At about 20 fathoms from the point there are three or four rocks separated from it, and at the fort there is a depth of five fathoms, sand.

The point has on its eastern side an elbow, with a river of the same name and a sandy bed. A high headland follows of stone and sand, covered with trees called coroncoron, which forms a bay to the eastward of it, of small extent, but tolerably deep. The bay of Suac is formed by the point of this name and that of Amanbaghon to the eastward is navigable, and has a sandy bottom. It has also a river, but difficult to get water from. Amanbaghon makes a small elbow, which terminates to the eastward in point Bares. From this point as far as Manbahung, and from this to Tinablan (rather Langao) the coast is irregular, forming two elbows, which take the names of their points.

*Port of Tinablan.*—The first forms the western part of the port of its name, and remote in a headland close to point Bunut. It is also at the mouth of a river, which falls down the valley between two high mountains, one of them being on each side of the little port. It has 15 and 16 fathoms in its entrance, but not more than four inside. The bar has so little water on it that a large boat can only get into it at high water.

*Point Bunut* is of some height, but not so high as the adjacent land; it is like a table with a cogonal upon it, while others have trees on them down to the water's edge.

*Bay of Babatgun.*—From this point, as far as the bay of Babatgun, the whole coast is fringed with rocks, making the ground very unequal; but at a short distance from it they disappear.

*Anchorage between Sorsogon and Point Culasi.*—The whole of the coast, from the entrance of Sorsogon to point Culasi, there is anchoring ground in case it is required, with this remark, that as far as the bay of Butac the shoal ground extends further off, and from that bay to the southward and eastward, at a mile off, there is a depth of 25 to 30 fathoms, but all good holding ground. The anchorage at Babatgun is in a semicircular bay, the two points of which are east and west of each other. There is a little cove in the western part which is covered by the western point. The shore is very bold, for at less than a boat's length from it there are five fathoms water, sand, coral, and stones. The coast extends out to the westward. The point is formed of shingle, and throws out a reef to some distance, of which vessels should be very careful, particularly with a flowing tide; for running as it does very strong from Tielines Strait, it sets them directly on it. The bottom, from one point to the other, is 20, 18, and four fathoms, sand and coral. From the centre, towards the western cove, there are 19, 18, and 16 fathoms not far from the strand.

*Calantas Shoal.*—This is formed of rocks, that dry *sueltas*, or black guijjarros, and coral. At its northern head it forms a little islet very easy. Its greatest extent and shoalest water is to the S.E., and at a short mile from it in that direction there are nine fathoms, which increases gradually to the southward. The same depth is found close to the northward of the islet, increasing considerably at a short distance from it.

*Eddies about this shoal.*—The flood tide setting to the westward, and the ebb to the eastward, occasioning much eddy and breakers, which make it appear that the islet is formed of white sand.



*Strait of Ticlines.*—From point Culasi to the northward commences the Strait of Ticlines. The western coast is formed by beaches of broken coral or mangroves, mostly with coral reefs.

(To be Continued.)

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ROYAL NATIONAL LIFE-BOAT INSTITUTION.

A meeting of this Institution was held at its House, John Street, Adelphi, on Thursday, 7th October, Thomas Chapman, Esq., F.R.S., vice-president, in the chair. There were also present Sir Edward Perrott, Bart.; W. H. Harton, Esq.; Rear-Admiral Sir W. H. Hall, K.C.B., F.R.S.; John Griffith, Esq.; Captain Richards, R.N., F.R.S., Hydrographer of the Admiralty; Captain De St. Croix, Admiral M'Hardy, Colonel Palmer, and Richard Lewis, Esq.

The minutes of the previous meeting having been read, £7 2s. were granted to pay the expenses of the City of Bristol life-boat the *Albert Edward*, in going off and saving the crew of four men from the French lugger *Isabelle*, of St. Malo, which struck, and afterwards became a total wreck, on the Doom Bar Sand during a furious gale of wind from the N.W., early on the morning of the 12th September. The life-boat *Western Commercial Traveller*, stationed at Cadgwith, on the Cornish coast, had also put off during a gale of wind from the W.N.W. on the same day, and assisted to save from destruction the brig *Phillis and Mary*, of Blyth, which was observed in a disabled and helpless state near the Stag Rocks. £11 5s. were voted to pay the expenses of the Arklow life-boat, the *Arundel Venables*, in going off during a strong gale from the W.S.W. and bringing safely ashore the officers and crew, consisting of twenty-one persons, from the screw steamer *Hellenis*, of London, which struck, and afterwards became a total wreck on the Arklow Bank, on the 15th September. The master of the wrecked vessel spoke in the highest terms of the admirable manner in which the life-boat was managed under the difficult circumstances she had to encounter. The thanks of the Institution, inscribed on vellum, were voted to John Cummins, the coxswain of the Arklow life-boat, for his skilful and highly meritorious services in that boat. The sum of £38 4s. 10d. was also granted to pay the expenses of the neighbouring life-boats at Cahore, Courtown, and Wicklow, in putting off to the assistance of the same vessel. There was likewise granted £6 10s. to pay the expenses of the life-boat *Jane*, stationed at Worthing, in going off with the view of saving the crew of a fishing smack, which was observed in distress about five miles off Worthing during a strong S.W. wind and heavy seas on the 19th September. The life-boat's crew boarded her, and found her abandoned. They afterwards brought her safely into harbour, and made no charge on the fishermen for thus saving their vessel.

There was also voted £7 16s. to pay the expenses of the life-boat *Chellenham*, at Burnham, Somerset, in going off during a strong wind and heavy sea early on the morning of the 21st September, and rescuing the crew of three men from the schooner *Prudence*, of Watchet, which, in attempting to make the port too soon on the tide, struck the ground on the south side of the channel, and dragged over the sands for about three miles, till she finally brought up at the back of Sturt Island. The same boat also assisted on Sunday last in safely bringing in to Bridgewater, a Dutch schooner, which had stranded on the Gore Sands in a heavy sea. There was also granted £6 to pay the expenses of the tubular life-boat *Willie and Arthur*, stationed at New Brighton, in putting off in tow of a steam-tug, and rescuing eighteen persons from the barque *Empress*, of Prince Edward's Island, which had gone ashore on Taylor's Bank, during a strong north-westerly wind, on the 26th September.

The services of the life-boat *Quiver*, at Margate, in putting off during a heavy gale on the 12th September, in reply to signals of distress, and saving, in conjunction with a steam-tug, the schooner *Lady Anna*, of West Hartlepool, and her crew of five men. The vessel had lost her anchors, and had her sails blown away. Also the services of the Dungarvon life-boat, the *Christopher Ludlow*, in putting off to the assistance of the yacht *Emetic*, of Dunmore East, county Waterford, which had dragged her anchors during a strong gale from the south-west, and was fast drifting towards the shore at Ballinacourty early on the morning of the 28th September. Also the services of the Wexford large life-boat, the *St. Patrick*, in going off in reply to signals of distress from the ship *Electric Spark* of Boston (United States), which went ashore at Blackwater Head during a strong wind from W.S.W., on the 26th September. The assistance of the life-boat was readily accepted by the captain for the ship, which had struck on a rock early that morning near the Saltees, and was in a sinking state, having fourteen feet of water in her hold. The life boat subsequently took off twenty-one of her crew, and the master's wife, and placed them in safety on board the steam-tug *Erin*. The ship afterwards became a total wreck.

The life-boats at Cahore and Courtown had also put off with the view of rendering assistance to the same ship. The life-boat *Appleyard*, at Salburn, brought ashore one man from the schooner *Bonnie Lass*, of Wick, which stranded on the rocks off Saltburn, on the 30th September. Also voted £12 to pay the expenses of the Fraserburgh life-boat the *Havelock*, in putting off during a S.S.E. wind, early on the morning of the 4th October and saving seven of the crew of the steamship *Viking*, of Dundee, which had stranded off Broadsea, near Fraserburgh. The vessel afterwards became a total wreck. The third service clasp was presented to Richard Johns, chief boatman of the Coastguard at Tramore, Ireland, and coxswain of the life-boat placed there, on the occasion of his retirement from that station in acknowledgment of his general gallant services in saving life from shipwreck.

The recent services of the *Hans Busk* life-boat at Ryde were

alluded to at the meeting in terms of admiration. The benevolent donor of the boat has long been known as a warm and steadfast friend of the life-boat cause. There was granted £107 4s. 9d. to pay the expenses of the life-boats of the Institution stationed at the Lizard, Broughton Ferry, Rhyl, Courtmacsherry, Eastbourne, Appledore, St. David's, Lowestoft, Pakefield, Southwold, and Ilfracombe, for various services to vessels in distress during the recent heavy gales.

Altogether the Institution's boats had saved ninety-four lives and five vessels during the storms of the past month. Various rewards were likewise voted to the crews of different shoreboats for saving life from wrecks on our coasts. Payments amounting to upwards of £3,000 were ordered to be made on various life-boat establishments.

The Emperor of Austria had presented a donation of £25 to the Institution, and various honorary rewards to the coxswain and some of the crew of the *Appledore* life-boat, in acknowledgment of the services rendered on the occasion of the wreck of the Austrian barque *Pace*, on December 28th last. A benevolent gentleman, signing himself "Benjamin," had also sent the society a liberal contribution of £100. A legacy of £1,800 had been received from the executors of the late Mrs. H. Richardson, of Greenwich, for the purpose of forming and permanently supporting a life-boat station. The late William Sinclair, Esq., of Sowerby, had also bequeathed to the Institution £200 free of duty.

The committee expressed their sincere regret at the decease of Alexander Boetefeur, Esq., who had been for many years an active member of the committee of management of the Society. He had also been a munificent supporter of the life-boat cause. New life-boats had recently been forwarded by the Institution to Salcombe, Sidmouth, Porthoustock, Mevagissey, Llandulus, Port Isaac, Duncannon, and the Isle of Whitehorn, and at each place demonstrations had been organised to welcome the boats to their stations.

In many instances the railway and steam-packet companies had readily granted the life-boats a free conveyance to their destinations. Reports were read from the inspector and the assistant-inspector of life-boats to the Society on their recent visits to different life-boat stations, after which the proceedings then terminated.

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#### LOSS OF THE BARQUE *Douglas*, AUSTRALIA.

SIR,—I feel assured that although we are some 16,000 miles apart, and utter strangers to each other, that under the circumstances stated below you will cheerfully allow me space in your valuable periodical for a few remarks on the wreck of the *Douglas*.

On the 5th of last June the schooner *Storm Bird* arrived in this port from Caledonia, having on board the crew of the barque *Douglas*, who were picked up by her on a raft about ten miles W.N.W. of Middleton

Shoal. You will find by the Captain's report that he struck on the 8th of May, and soon after constructed a raft on which he left with his crew on the 12th, on the 19th it seems they fell in with and were kindly received on board the *Storm Bird*.

On the 14th of June the Colonial Government steamer *Thetis* arrived here from Sydney and almost immediately after an opinion was pretty freely expressed to the effect that the *Douglas* was wrecked on Elizabeth Reef, and that the wreck the Captain saw ten days after he left his own vessel was the *Douglas* and that he did not know her.

On the 16th of June I addressed a letter to one of our local papers, the *Newcastle Pilot*, on the subject, and finding no further notice taken of the wreck I forwarded a letter each to the *Empire* and *Evening News*, Sydney papers, on the 23rd of June; all these papers I forward you by this mail.

On the 8th of July, Mr. Gowland (vide his report) proceeded, to use his own words, "to examine into the matter," and on the 12th of same month he returned to Port Stephens, and immediately after forwarded his report to Head-quarters in Sydney.

Now as I consider myself (with all proper humility) to be one of (to quote Mr. Gowland's very polite words) "the few of the more intelligent Masters in the Mercantile Marine," may I beg you will permit me to offer a few remarks on this gentleman's report.

He commences by stating that he entertained very little doubt that the ship was lost on a shoal well known and clearly defined on the chart, named Elizabeth Reef; and on proceeding in the *Thetis*, on the 8th, to examine it his suppositions were confirmed by finding the *Douglas hard and fast* on the south-east extremity of the coral ring—the extremity of a ring!

Then he goes on to state that he was unable to land owing to the heavy surf that was breaking, and then gives a description of a wreck at a third of a mile distant.

It seems to me that Mr. Gowland started on his cruise determined to find the *Douglas* on Elizabeth Reef—if his suppositions were confirmed by his finding the *Douglas* hard and fast on the reef why give a description of a wreck which he found there, and which he gives as a proof of its being the *Douglas*. He certainly like myself had some grave doubts on the subject—indeed he has signally failed to prove that the wreck he saw on the reef was that of the *Douglas*; indeed I fear he was ordered on a little excursion which was distasteful to him and which he perhaps considered interfered with his Imperial duties.

In paragraphs one, two, three, four, he is very minute in his description—but here I think is the weakest point in his report—Mr. Gowland got into position off the wreck at four p.m., well, at five in these latitudes at this time of year the sun is not very far from the horizon, and it is impossible for any one at this particular time of day with a vessel between him and the glare of the evening sun to say what colour her yards and masts were at the distance of a third of a mile.

In paragraph 4 he states that the lower rigging was *wire*, and the

forestay and the topmast backstays *apparently* rope, now if he was near enough to distinguish the one, why not the other.

If he was near enough to distinguish her wire rigging, why not be enabled to state whether a boat was hanging on the davits, or turned over on a round house, or, as he states, *on the gripes*. This paragraph is rather obscure.

Paragraph 6.—“The courses had been set, and not taken in, as the leech and foot roping of the sail is still standing, frame like, hauled on board.” Well, I can only observe that a man who has pluck enough to construct a raft under such circumstances, and start for mid-ocean, has too much of the sailor about him to leave his tack and sheet on board. Immediately he struck he would certainly haul his courses up; at all events before he finally left her. This statement of Mr. Gowland’s must go for what it is worth.

Human nature is human nature all over the world, and if Mr. Gowland had gone in search of the *Douglas*, without having previously seen, or heard a description of her, the nautical public would have been better satisfied.

Mr. Gowland has previously stated that he found the *Douglas* hard and fast on the south east extremity of the *coral ring* encircling the reef; in paragraph 9, he reports the barque on the south east extremity of the *reef*. This is not a very happy statement. Then he goes on to state that “her rudder was unshipped, and with these exceptions, to all *appearances* as perfect as when she left the port.”

Now, Mr. Editor, the *Douglas* was a barque of 392 tons register, built in America, date uncertain. And I ask you whether it is likely that a vessel of her class and description, striking on such a dangerous reef, and coal laden, would keep together for such a time, viz.: from the 8th of May until the 10th of July, for be it remembered that the Elizabeth reef is so situated as to be subject almost nine months out of the twelve to stiff south easterly gales, and such winds blowing on the south east portion where Mr. Gowland saw this wreck, would not allow a wrecked vessel to remain there a fortnight, much less two months.

Then Mr. Gowland gives a description of the reef. Well, to a casual observer or reader this would appear all pretty well, but when we know that Mr. Gowland was only in position off the reef an hour before dusk, it will be seen at once that he had not sufficient time to acquire such a knowledge of the reef.

In the next paragraph he attempts a colouring to his report, but this colouring will not hide its weak points; neither will the fact of its being addressed direct to His Excellency the Governor do away with its inconsistencies. But Mr. Gowland seems to forget his office; he ought to know that we have no well defined description of this portion of the Coral Sea, particularly with regard to the prevailing currents, and he should have taken an honest pride in endeavouring to give his brothers of the Mercantile Marine his every help in assisting them in their dangerous occupation, particularly in these very partially surveyed waters, and not have left the reef so soon, and returned with such a vague report.

I have been much in coral water, and have always found, particularly in the evening, the ultra-marine tint in deep water, and the murky indigo hue in shoal, but even then these tints and hues change with the atmosphere. I hope Mr. Gowland did not intend this observation as a guide to navigators frequenting these very uncertain waters.

Mr. Gowland states that this locality has been critically examined by H. M. S. *Herald*; if so, why have gone in search of an "imaginary vigia?" The fact is, this gentleman would have us believe that within a radius of a glorious uncertainty there are no dangers but Elizabeth Reef and Middleton Shoal. I doubt it, and I feel more and firmly convinced that Mr. Gowland has not discovered on what reef the *Douglas* was lost, nor has he accounted for the fact of the raft having been fallen in with ten miles W.N.W. of Middleton Shoal.

Then follow a number of asterisks, under the brightness of which we of the Mercantile Marine are supposed to be so dazzled as to be incapable, with a few glorious exceptions, of knowing where we are either by day or by night, on shore or afloat. I may inform Mr. Gowland that we accept nothing blindly, and are very good observers of time, seasons, and manners; and he has yet to learn that the great majority of Masters in the Mercantile Marine are both socially and intellectually on a par with any officer afloat; his acquaintance with them must indeed be shallow, and savour rather of the murky indigo.

Now comes a most amusing part of his report. Just fancy a vessel leaving London, Liverpool, or Glasgow bound to China, India, or Australia, and the captain so utterly unpractised in his profession as to depend upon falling in with either a man-of-war, or a *floating time ball*, to tell him where he is, or how he is to steer. This floating time ball arrangement tickles my fancy much—Oh! shades of Dampier, Cook, La Perouse, and De Bougainville arise, and witness this wonder of our age, this floating time ball.

Mr. Gowland must be fully alive to the gullibility of John Bull, and fancies no doubt that the Gull species not only abounds on Elizabeth Reef but in Australia generally—for I find in the *Sydney Illustrated News* of the 5th of August (which I forward by this Mail) there is a sweet pretty picture of the "*Douglas* wrecked on Elizabeth Reef, the *Thetis* going to the relief—from a sketch by Lieut. Gowland, R.N.;" and in page 232 you will find a nice sensational paragraph on the *Thetis'* visit to Elizabeth Reef; really all this, putting joking aside, is too bad.

However for the present, Mr. Editor, I have done with the *Thetis*, and only trust that no one will be foolhardy enough to go to the Elizabeth Reef in search of the spars and stores of the poor old *Douglas*, whose remains, wherever they may be, are now, I should fancy, in such a decomposed state as to render them wholly unfit for a *post mortem*,

Pray forgive this long letter—from the commencement I have alternately felt annoyed and amused at the circumstances attending the yet mysterious affair of the wreck of the *Douglas*; the question

*Where was she wrecked?* to this date remains unanswered. In addressing you on the subject, no doubt the matter will be taken up in the proper quarter, for really this coral sea, this great highway, requires a thorough survey.

I am, Sir,

Your obedient servant,

Newcastle, New South Wales,

August 10th, 1869.

F. ALDRICK.

To the Editor of the *Nautical Magazine*.

[We readily give insertion to this paper, if only with the object of setting the question involved in it at rest. The position of the Elizabeth and Middleton shoals subject them evidently to a strong current varying easterly and westerly, as is abundantly shewn in our volume for 1852. So that there are many circumstances to be taken into consideration arising from current alone. But we have received the paper too late in the month to do this, and shall return to it with what opinion we may be enabled to form, in our next number.—ED.]

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#### ISTHMUS OF SUEZ CANAL.

SIR,—I have just read the extract given in page 550 of the *Nautical* from the *Daily News*, but the accounts of the works of the Isthmus are so contradictory, so utterly irreconcilable with each other, and those on one side are so marvellous as regards the quantity of dredging and dry excavation recently executed, that I must be excused from trusting to the recent statements that the canal is either executed to its former proposed depth of eight metres (twenty-six English feet), or that the canal is already filled to the same level throughout.

I suppose that it will be found out that the junction of the two seas, now spoken of, is nothing more than the water of the Red Sea dribbling into the Bitter Lakes through the temporary narrow and shallow cut which was long since completed; and of which we, many weeks ago, heard that its sluices were opened to allow the water of the Red Sea to fall into the Bitter Lakes; the said cut being first filled by the tidal water of spring tides which is locked in, and then slowly discharged into the Bitter Lakes by the opening of the sluices at its north end. I believe it was through this ditch that "a man-of-war" was said to have passed into the Red Sea. Was the man-of-war of greater draught than a man-of-war's launch? I rather think—not.

Why am I so sceptical? Why so bitter against the navigation of the Bitter Lakes? Solely because experience has shown me the difficulty of forcing a passage through marine sands to a depth of twenty-six feet at low water. We have an example in the Tyne,

where only to secure a little channel through its bar for a few hundred feet in length, they have dredged for the last ten years, lifting of late years to the extent of from four to five million tons annually, and have not yet secured even the depth of three fathoms.

I distrust these accounts of paid advocates, as I told the assembled Members of the Institution of Civil Engineers at the discussion on the reading of General Sir William Denison's able paper on the Suez Canal, and that I was not to have palmed upon me by Mr. Hawkshaw a statement that the saline deposit from evaporation was only "a trifling cake of about six inches in thickness," when I well knew, that the borings which had been taken had reached thirteen feet six inches in thickness without piercing through it. I make light of the account of "M. De Lesseps having recently gone from sea to sea in a small steamer in thirteen hours," simply because I believe that the craft must have steamed through the temporary shallow and narrow cut before alluded to, and that she did not pass through the rock cutting for the real Suez Canal between Chalcross and Suez; and, possibly, the intended grand opening in November will turn out to be no other, and ships of large draught of water will be advertised to put off their visit to a more convenient day.

I place some faith in Mr. Bramley Moore's recent account of his visit to the works, as detailed at the public meeting at Liverpool, from which we learnt that there were at least six miles of rock cutting between Chalcross and Suez in a very unsatisfactory state, so much so that he did not believe it to be possible to complete the work by the time advertised. Nevertheless, that rock cutting is not one of the real difficulties of the measure, but these are to be found in the trouble of keeping clear a channel of nine metres in depth at the Mediterranean and Suez harbours, the slipping in of the sandy soil of the canal banks, the loss of water by evaporation, and lastly, the want of sufficient tidal influence to prevent the measure being at any time other than what my late revered friend Robert Stephenson described it as likely to prove, "a stagnant ditch," and too costly in its execution, and maintenance, ever to prove remunerative to its undertakers.

It is however but justice to the talented French engineers so long engaged in the great works of the present Khedive of Egypt, and his predecessor, that, as originally designed by them, the Suez ship canal was quite a different object, having been proposed by them to be formed with entrance locks at either end, and the canal itself filled with water from the Nile, and thus giving the additional advantage of irrigation over a vast extent of country.

It seems just now to be the fashion to have faith in the Suez Canal Scheme, but my long revealed opinions remain unchanged, that it never will be used by ships of large draught.

I am, Sir, your obedient Servant,

W. A. BROOKS,

*Member Institute Civil Engineers.*

*October 5th, 1869.*

*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, E.C.]

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 546.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist. in Mls.	[Remarks, etc. Bearings Magnetic.]
71. Bosphorus	At Black Sea Entr	Light Vessel	F.	28	15	Est. 8th September, 1869. See Notice 71.
Ortona Port	Italy Coast	42° 19' 7" N.	F.	26	9	Est. 1st September, 1869.
Mole Head	Adriatic	14° 24' 5" E.				
72. Bank off	Pulo Laut Strait	... ..	...	...	...	See Notice 72.
North Watcher	... ..	... ..	R.	...	22	Revolves one a minute. Est. 9th June, 1869. Light Vessel.
Lucipara	Channel	... ..	...	...	...	See Notice 72a.
Rhio Strait	Pan Reef	... ..	...	...	...	The beacons removed.
73. Ruytingen	Red, one	51° 12' 9" N. 2° 12' 1" E.	R.	33	11	Est. September, 1869.
Dyck	Two	51° 3' 1" N. 2° 3' 5" E.	F.	34	11	" "
Snouw	Red, one	51° 3' 5" N. 2° 12' 6" E.	F.	33	11	" "
74. Conningbeg	Ireland	Off Saltee Island	...	...	...	Light Vessel replaced.
75. Charente R.	France	... ..	F.	45	16	Upper Light Red. Est. 1st Oct., 1869. See Note 75.
North Bank	... ..	... ..	F.	45	11	Lower Light Green.
Charente R.	France	... ..	F.	44	9	Upper Light Red. Est. 1st Oct., 1869. See Note 75.
South Bank	... ..	... ..	F.	17	9	Lower Light Red. " "
76. Cape Mixeno	Gulf of Naples, N. Side	40° 46' 6" N. 14° 5' 3" E.	R.	292	20	Est. 1st Oct., 1869.
77. Trieste Bay	Grado Light Vessel	Position altered	...	...	...	N. $\frac{3}{4}$ W. 2470 yards. Flashes irregular.
Sottile Point	Trieste Bay	... ..	..	...	...	Light intended on 1st Oct., 1869.
78. Rio Janeiro	Harbour	A rock in	...	...	...	See Notice No. 78.
79. Caldy Island	Bristol Ch.	... ..	F.	...	...	Renewed with Dioptric Light.
Carnarvon Bay	Wales	... ..	...	...	...	See Notice No. 79. Proposed light.
80. Barrack Rock	Dingle Bay	... ..	...	...	...	See Notice No. 80.

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

No. 71.—The position of the light-vessel, as given, is in lat. 41° 29' N., long. 29° 9' East from Greenwich, or 15 miles North from the entrance of the Bosphorus. From the light-vessel—Karabournou light bears W. by S.  $\frac{1}{4}$  S. 22 miles; Shillee light, S.E. 28 $\frac{1}{2}$  miles; Anatoli light, S.  $\frac{1}{4}$  W. 16 miles.

No. 72.—This bank has  $2\frac{1}{2}$  fathoms water on it, and lies with Cape Pagatan N.E. by E., and Cape Kandany Aver W.  $\frac{1}{4}$  S. Position, as given, lat.  $3^{\circ} 47' 45''$  S., long.  $115^{\circ} 42' 9''$  East from Greenwich.

72a.—Also that it is the intention of the Government to place a light-vessel near the spot at present indicated by a buoy, which marks the outer edge of the shoals by the Lucipara Channel.

No. 73.—Respecting an intended alteration in the lights and buoys between Calais and the Belgian frontier, on the North coast of France, the French Government has given Notice that the following alterations have been made:—

LIGHTS.—*Ruytingen* light-vessel is painted red, and is moored in 8 to 11 fathoms at low water, N. by W.  $\frac{1}{4}$  W. from Dunkerque lighthouse, in lat.  $51^{\circ} 12' 52''$  N., long.  $2^{\circ} 12' 9''$  East from Greenwich.

The *Dyck* light-vessel is painted red, and is moored in about 11 fathoms at low water, N. by W.  $\frac{1}{4}$  W.,  $3\frac{1}{4}$  miles from Gravelines lighthouse, in lat.  $51^{\circ} 3' 8''$  N., long.  $2^{\circ} 3' 29''$  E.

The *Snow* light-vessel is painted red, and is moored in 11 fathoms at low water, E.N.E., 5 miles from Gravelines light, in lat.  $51^{\circ} 3' 32''$  N., long.  $2^{\circ} 12' 35''$  E.

*Directions.*—The Snow and Dyck lights kept in line will indicate the position of Dunkerque roads. The Dyck lights in line with the revolving light of Dunkerque, will indicate the direction to Dunkerque roads when coming from the westward. The Dyck lights when kept a little to the left or to the eastward of the fixed light of Gravelines, will lead through the passage between the western point of Out-Ruytingen and the small bank to the westward of it. The line between the fixed light at Gravelines and the Ruytingen light passes through the channel between West Dyck and Middle Dyck and the In-Ruytingen and Out-Ruytingen shoals.

No. 75.—*Note.*—The light on l'île D'Aix in a line with the Upper light (red) on the north bank will lead  $1\frac{1}{2}$  miles northward of the Rocher d'Antioche and will be useful in navigating the Pertuis to and from the Bâde l'île D'Aix.

*Directions.*—Vessels entering the Charente in the night should keep the red and green light on the North bank in a line until the two red lights on the South bank are in one: keeping the last mentioned lights in line, will lead to the anchorage of the Port des Barques. A ray of red light visible from the upper light tower on the North bank will indicate a near approach to the anchorage.

[All Bearings are Magnetic. Variation  $19\frac{1}{2}^{\circ}$  Westerly in 1869.]

No. 78.—Information has been received of the discovery of a small rock by Squire T. C. Lecky, Lieutenant R.N.R., commanding the Steam Ship *Halley*, near the Isle das Enchadas (The Coaling island) in the harbour of Rio de Janeiro.

The rock 50 feet across, steep to with 15 feet over it, is E. by S.  $\frac{3}{4}$  S. about a cable from the jetty on the east point of the Isle das Enchadas.

Vessels are recommended to pass outside, or to the eastward of Baixo das Feiticeiras.

No. 79.—CARNARVON BAY.—*Intended New Light-vessel between Bardsey Island and South Stack.*—Early in December, 1869, a light-vessel will be placed between Bardsey island and South Stack.

The light will be a *revolving* light with *red* flashes at intervals of *twenty seconds*, in the order of *two white* and *one red*.

The light-vessel will be moored in 30 fathoms at low water springs, S.S.W.  $\frac{3}{4}$  W.  $12\frac{1}{2}$  miles from the South Stack lighthouse.

[*All Bearings are Magnetic. Variation 23° Westerly in 1869.*]

No. 80.—A rock, long known by fishermen in the neighbourhood to exist as the *Barrack rock*, on the north side of Dingle bay, has recently been examined by Staff Commander E. K. Calver, and its position determined.

It is about two-thirds of a cable across, with  $4\frac{1}{2}$  fathoms on it at low water springs; S.E.  $\frac{3}{4}$  S.  $2\frac{1}{2}$  miles from Thunder rock (south of Vickillane island), and S.W. by W.  $\frac{1}{2}$  W.  $5\frac{1}{2}$  miles from Slea head, and breaks in rough weather.

#### THE QUEEN ADELAIDE NAVAL FUND.

In our last number (page 543) is a letter informing us of a resolution arrived at by the Ladies' Committee of this Institution. The discretion of that resolution appeared to us questionable, on account of the acknowledged slender means of the Fund (as appears by a few late annual reports of the General Committee), that show good reason for doubting whether the Society (if such resolution were adopted) could reasonably pledge itself to a course which its resources hereafter *might not enable them to fulfil*. Yet, as we had no right to do this, it was allowed to appear. Perhaps the above fact has already become evident to the author of the letter referred to:—whether or not, we counsel its suspense, and shall at once look on it as a lapsed effusion of a generous mind: and can only hope that the publicity it has acquired by appearing in these pages may be the means of obtaining a fresh addition of friends and supporters of the *Queen Adelaide Fund*, of whom it is so much in need.

We may add, that until the resolution referred to had been confirmed by the General Committee, its announcement was, to say the least, premature. Indeed we have heard that no such resolution as stated within inverted commas, in our correspondent's letter, appears on the Minutes, even of the Ladies' Committee!

#### THE INEXPLICABLE SEA MONSTER—PART BEAST AND PART FISH.

[The following account appears as it stands in a Sandwich Island paper, and would go far to account (if all be true and which we cannot doubt) for the reports which appeared a few years ago of the sea serpent. We have ourselves given some of these accounts, and

one in an early volume of this work from an ancient statement of a northern navigator. No doubt naturalists are puzzled by the creature here described: but of this strange fish we anticipate further accounts hereafter.—ED.]

In a number of *Harper's Weekly* appeared a detailed description, with an illustrative engraving, of what we are compelled to call an indescribable sea monster, "part beast and part fish," which had just been captured, under circumstances of great excitement, near Eastport, Me. The size of the monster, its strange form, and the peculiar way in which it was caught, aroused the incredulity of a portion of the community to such an extent, for a time, the reputation of the Harpers—the greatest publishers on the continent, and as noted for their integrity as for their business sagacity—was shaken! We give here the descriptive article from *Harper's Weekly*, taken from page 648 of the volume:

#### A WONDERFUL FISH.

This curiosity of natural history, caught "down East," near Eastport, Maine, a few weeks ago, has attracted so much attention and excited so much wonder, even among naturalists, that we give a representation of it in the accompanying illustration. The *Bangor Daily Whig* gives the following detailed description of this fish:

"The strange animal recently captured near Eastport, meagre reports of which had reached us, arrived in this city a few days ago, and has been on exhibition, during which it has been visited by our citizens, all of whom have expressed their wonder as well as the remarkable size of the monster as at its anomalous character. This animal, part beast and part fish, is over thirty feet in length, and girths twenty-one feet. It has one enormous dorsal fin, two side belly fins, and a broad shark-like tail. About one-third of its length from its tail, in connection with small fins, it has two huge legs, terminating in web feet. Its mouth makes a line five or six feet in length, the whole extent of which is set with innumerable small teeth, very much resembling in size and shape the kernel of a species of sharp pointed pop-corn. It has a series of gills which overlap each other like the flounces once the style in ladies' dresses. Its immense body, which was estimated to have weighed when captured about eleven tons, had no frame work of bones, its most solid portions consisting of cartilage, incapable of preservation. Its skin is dark and tough, like that of the elephant and rhinoceros.

"There is no record of his species, and to none is it a greater wonder than to naturalists, whose attention is being drawn to it. Among others who have had the opportunity of seeing it is Professor Baird, of the Smithsonian Institution at Washington, who is as yet unable to place it in the known lists of the animal kingdom. It is indeed a veritable wonder calculated to excite popular curiosity, and to invite the researches of the scientific.

"At various times during the past fifteen years a strange monster, believed to be a huge serpent, has been reported seen in Lake Utopia,

in New Brunswick, just across the State line; but as these reports in each instance rested upon the testimony of but one or two individuals, they were generally discredited. Latterly however, the reports and the number of witnesses had so increased as to take the story out of the realm of fiction. On Sunday, August 3, the monster was discovered near the shore on the west side of Eastport Island, where Passamaquoddy Bay is connected with Lake Utopia by a marsh a quarter of a mile long. Being attacked by musketry, it struck for the marsh, and probably for the lake, which was undoubtedly its home, and before being rendered incapable of locomotion, it had worked its way with its fins and legs a number of rods. The report of its presence at once spread to the town, attracting a large number to the spot to aid in its destruction. It received some seventy musket balls, and although attacked in the forenoon, it exhibited signs of life the following day.

"Thus the north-eastern point of our State, with the assistance of New Brunswick, has the honour of producing the nearest approach to the veritable sea-serpent, which is destined to make a popular sensation wherever exhibited. It is to be at Portland during the forthcoming State Fair, and is thence bound for Boston, New York, and other principal cities."

The discovery of a monster of such marvellous peculiarities, and unknown to science, at once attracted the attention of scientific men—among these, Professor Baird, of Washington; Professor Hamlin, of Waterville, and Professor Stanley, of Bates College. These gentlemen confess that the monster is too much for them—they do not know what it is, where to classify it, or what name to give it! It is simply one of Nature's biggest freaks. Perhaps it is the sea-serpent. Of course the Down-Easters have been in a state of bewilderment. That a monster so long that it could not be laid across Nassau-street unless head and tail went into the shop windows; of such circumference that, were the framework strong enough, its skin could be used for a lifeboat, and with a mouth in which a few children could find shelter—that our Maine friends should have a call from such a stranger is reason enough for a "sensation."

The article in the Bangor paper, which *Harper's Weekly* copies, omits to state that the monster, whose hide had resisted 70 bullets, was at last "brought to" by a broadside of spikes from a cannon!

If the Messrs. Harper or the eminent Professors still find the public incredulous, it may comfort them to know that Mr. Wood has placed the monster on exhibition for a short time in his Museum, corner of Broadway and Thirtieth-street.

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#### CAPTAIN HALL'S ARCTIC JOURNEY.

CAPTAIN C. F. Hall, the Arctic explorer, who has just returned to New Bedford from a five years' search after the remains of Sir John Franklin's companions, has written an interesting letter to Mr. H. Grinnell, giving the details of his cruise, together with the un mistake-

able evidences of the fate of Sir John and his party. Although the evidences found are conclusive as to the fate of the party, Captain Hall is confident that if a large and well-organised expedition should spend one summer on King William's Land, where records "beyond doubt" are buried, the complete history of the fate of Franklin's last expedition would be found.

These manuscripts are supposed to be buried in a vault a little inland or eastward of Cape Victory, the captain at one time being within seventy-five miles of there; but a stampede of the natives accompanying him as an escort forced him to retrace his steps. From the imperfect description given by the Esquimaux of the condition of Crozier's party of 105 men, the captain is satisfied that they were suffering from the scurvy, as nothing but sickness would have kept so experienced an Arctic traveller as Crozier from the game which was in abundance within seventy-five miles of where he and his party perished. The relics brought back number about 150, and were as many as could be conveniently carried, although there were hundreds of them in possession of the natives. Those brought back were obtained of the natives through the (with them) all-powerful agency of presents—a needle being considered a fair equivalent for a silver fork or spoon.

It is not at present the intention of Captain Hall to prosecute further the search for the remains of Sir John Franklin. His great desire is to reach the North Pole, and to accomplish this end an effort will probably be made to obtain Government aid in fitting out and manning an expedition to start next summer. The magnitude of the undertaking almost precludes the possibility of obtaining aid from private individuals, and no society could bear the expense of it. Already he is impatient of civilized life, and is beginning to revolve in his mind plans for such an expedition. Captain Hall returns in the best of health.

In regard to the North-West Passage, Captain Hall writes:—"The same year that the *Erebus* and *Terror* were abandoned one of them consummated the Great North-West Passage, having five men aboard. The evidence of the exact number is circumstantial. Everything about this North-West Passage ship of Sir John Franklin's expedition was in complete order; four boats were hanging high up at the ship's sides, and one was on the quarter-deck; the vessel was in its winter housing of sail or tent cloth. This vessel was found by the Ook-joo-lik natives near O'Raily Island, lat 68° 30' N., long. 92° 8' W. early in the spring of 1849, it being frozen in, in the midst of a smooth and unbroken floe of ice of only one winter's formation. From certain evidence I have gained both at Ig-loo-lik and King William's Land, there must have been a dog of the greyhound species belonging to one or the other of the two ships. I only know this through native testimony. It is quite likely that some one in England can tell whether there was a dog on board either of these ships when Sir John Franklin left in 1845.

To complete the history of Sir John Franklin's last expedition, one

must spend a summer in King William's Land with a considerable party, whose only business should be to make searches for records which, beyond doubt, he buried on that island. I am certain from what I have heard the natives say, and from what I saw myself, that little or nothing more can be gained by making searches there when the land is clothed in its winter garb, for the Esquimaux have made search after search over all the coast of King William's Land, on either side, from its southern extreme up to Cape Felix, the northern point, for anything and everything that belonged to the companions of Sir John Franklin, and these searches have been made when the snow had nearly all disappeared from the land. My sledge company from Repulse Bay to King William's Land consisted of eleven souls, all Esquimaux. Although they are as untameable as eagles by nature, yet by their aid alone I was enabled to reach points otherwise inaccessible, and when there to gain much important information relative to the fate of Sir John Franklin's expedition. I tried hard to accomplish far more than I did, but not one of the company would, on any account whatever, consent to remain with me in that country and make a summer search over that island. Could I and my party, with reasonable safety, have remained to make a summer search on King William's Land, it is not only probable that we should have recovered the logs and journals of Sir John Franklin's expedition, but have gathered up and entombed the remains of nearly 100 of his companions, for they lie about the places where the three boats have been found, and at the large camping place at the head of Terror Bay, and the three other places that I have already mentioned.

In the Cove, west side of Point Richardson, however, nature herself has opened her bosom and given sepulture to the remains of the immortal heroes that died there. Wherever the Esquimaux have found the graves of Franklin's companions they have dug them open and robbed the dead, leaving them exposed to the ravages of wild beasts. On Todd's Island the remains of five men were buried, but after the savages had robbed them of every article that could be turned to any account for their use, their dogs were allowed to finish the disgusting work. Wherever I found that Sir John Franklin's companions had died I erected monuments, then fired salutes and waved the Star Spangled Banner over them in memory and respect of the great and true discoverers of the North-West Passage.

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#### THE CITY OF OSACA.

THE City of Osaca is one of the oldest in the Empire, and bears the not very moral reputation of being "the Paris of Japan." The streets are wide and clean; the houses, like all Japanese houses, are low, of one storey and a half, open in front in warm weather, and closed in winter by paper shutters. The shops are large and filled with many curious goods. The city for a great portion of its extent, is intersected by canals, and some travelled ones found a great similarity to Venice, al-

though the sunny, shallow, dirty canals of Osaca bear little resemblance to the romantic descriptions of the dark, deep, solemn channels through which Venetian gondoliers scull their black boats. The sides of these Osaca canals, far from being shut in by the high walls of lofty palaces, are bordered by the less interesting but more valuable saki distilleries, for this city makes and sends annually to the different ports of Japan millions of gallons of saki. It is estimated that more than 1,500 pinks sail from Osaca to the single city of Yeddo, carrying the saki and soy to supply the wants of the numerous inhabitants of this city. This trade, which is now in the hands of the Japanese exclusively, must sooner or later become the possession of foreigners, whose vessels can make the trip to Yeddo and back in thirty days, against the 100 of the lumbering junks. These two manufactures—saki and soy—are the principal products of the city, but there are to be found there fine lacquer and a peculiar sort of red China much prized by the Japanese. Beyond this there is little to be bought and nothing of permanent use to foreigners, although when the port is opened some enterprising men may discover some articles worth exporting. The city has been the head-quarters of the Tycoon during the recent war, and he has still continued his residence there, since it is, by reason of its proximity to the capitol of the Mikado, much more convenient for the settlement of the difficulties at present existing.

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#### NARROW ESCAPE OF THE *Jean Bart* AND *Obligado*.

The French line of battle ship *Jean Bart*, and training brig *Obligado*, narrowly escaped shipwreck on the night of June 5th, on the Bell Rock, off Cherbucto Head, Nova Scotia. The *Jean Bart* with the *Obligado* in tow, was bound for Halifax, and when near Sambro Lighthouse one of those dense fogs set in, which are so common in the locality at this season of the year, that invaluable monitor (when shall we adopt them in England), the fog trumpet of Sambro warned the captain that danger was near. It was then decided to haul in for the entrance of Halifax Harbour, and anchor in twenty fathoms.

The engines were slowed until the speed was reduced to four knots an hour, and when the presumed bearing of Sambro placed the ship clear of all danger a northerly course was steered for the anchorage. After the lapse of a short interval it is highly probable, that the captain felt the danger of running near a coast, in a depth of water, when the slightest error in the position, would certainly lead the ships amongst the dangerous outlying reefs of Sambro, or Cherbucto. Whatever may have been his reasons however, the course was altered to east, and the ship immediately afterwards ran up on the Bell Rock, until fifteen feet of water was under the fore chains, the vessel's draft being twenty-four. The *Obligado* immediately cut the tow ropes, sheered off, and fortunately cleared the reef sufficiently to anchor in safety.



On examining the position of the *Jean Bart*, she was found to be afloat from the fore chains aft, and swaying slightly to the swell which the south-east wind rolled directly on the rock. The night was so foggy that it was not possible to ascertain where the ship was stranded: opinions were divided between the Bell Rock and the Sisters. The heavy steam launch and boom boats were hoisted out without confusion, and to the horror of the French captain he at once sent seventy cadets on board the *Obligado*, in order to be prepared for the worst. The screw was kept turning astern, the guns and heavy weights brought aft, and an anchor laid out on the quarter. In the interim a pilot boat came off from Catch Harbour, and under the guidance of one of her crew, a lieutenant, was immediately despatched in a cutter to the English Admiral at Halifax. He reached the Admiral at one a.m., and H.M. ships *Dart* and *Minstrel* were at once ordered to *feel* their way down if possible, as the fog and darkness still continued. This was successfully executed, but on arriving at the place they were gratified to find that the old ship had launched herself from her perilous position at low water, and anchored to await the lifting of the fog. At noon she entered Halifax leaking slightly, and after undergoing a temporary repair sailed for France under convoy. Her escape was certainly marvellous, for had the slightest protuberance of the rock entered the bottom, she would have been held in her perilous position until the increasing swell had broken her up. What to Englishmen would appear a singular ceremony occurred immediately after the ship had floated off. Every officer walked up to the captain, shook his hands, and congratulated him on saving the *Jean Bart*. And well he merited their congratulations, for few under such discouraging circumstances of darkness and fog, would have been so successful.

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#### PROPOSAL TO ILLUMINATE BEACONS BY ELECTRICITY.

FOR some time past Mr. T. Stevenson, C.C., has been engaged in prosecuting a series of experiments with the view of testing the practicability of illuminating beacons and buoys at sea by the electric light, produced by means of a battery on the shore. These experiments have been attended with a remarkable degree of success, and last night they were conducted at Trinity in presence of deputations from the Board of Trade, the Trinity-house, and the Commissioners of Northern Lights, who are at present on their annual tour of inspection. The gentlemen present were Mr. Shaw Lefevre and Mr. Farrer, secretaries to the Board of Trade; Captains Fenwick and Nisbet, elder brethren of the Trinity-house; and Bailie Miller, Edinburgh; Lord Provost Sir James Lumsden, Glasgow; Provost Watt, Leith; Provost Yeaman, Dundee; and Sheriff Cleghorn, Commissioners of Northern Lights, with Mr. David Stevenson, C.E., and Mr. Alexander Cunningham, secretary to the Board. With the view of having this new and important application of electricity thoroughly tried, Mr. Stevenson has had a submarine cable laid between the East Breakwater of Granton Harbour and the

Chain Pier at Trinity. The operator occupies a station near the centre of the breakwater, and the light is shown at the point of the pier, the current being thus transmitted a distance of fully half-a-mile. The experiments began about eight o'clock in the evening, and passed on most satisfactorily. The light, which is shown in front of an ordinary holophote reflector, was marked by that intense brilliancy which is characteristic of the electric light. It was seen to be thoroughly under the control of the operator. The flames were emitted with a rapidity which caused them to assume almost the appearance of a steady light, and again they came at intervals—one every one, ten or fifteen seconds, Mr. Hart, North College Street, who has supplied the electrical apparatus, officiated as operator; and Mr. Thomas Stevenson explained to the deputations the various ways in which this application of the electric light might be advantageously employed.

[The foregoing is no novelty, having been done by the present Admiral Sheringham, when he was surveying in the neighbourhood of Portsmouth.—*Ed. N.M.*]

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#### GREENWICH HOSPITAL.

THE Lords of the Admiralty have decided that the following shall be entitled to the benefits of Greenwich Hospital:—All naval and marine pensioners who have been granted naval pensions for life. All seamen and marines who have served ten years continuously, or with short intervals. All seamen and marines who, having served less than ten years, have been within six months discharged or invalided on account of diseases or wounds contracted in or by the service. All seamen and marines who, having served for less than ten years, were at any rate discharged on account of disease or wounds contracted in or by the service, and who, from the date of their discharge, have been infirm or helpless, or permanently or temporarily unable to maintain themselves. All other seamen and marines whose claims may be considered special and exceptional, not coming within the above-mentioned classes. Their lordships have clearly defined the regulations under which men will be received into the various infirmaries and hospitals, and wind up their statement by clearly announcing that no individual while an indoor patient shall be permitted to marry.

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#### THE LIGHTING OF ST. GEORGE'S CHANNEL.

THE Board of Trade are taking active measures for lighting some of the most dangerous points in connection with the navigation of St. George's Channel. Early in December next a new light vessel will be placed between Bardsey Island and the South Stack. The light on board the new vessel will be a revolving one, with white and red flashes, at intervals of twenty seconds, in the order of two white and one red. The light vessel will be moored in thirty fathoms at low water springs, twelve miles and three quarters S.S.W.  $\frac{3}{4}$  W. from the South Stack lighthouse. This new vessel will be a great boon to sea-

men navigating the channel, and is especially intended to facilitate the navigating of St. George's Channel, and to indicate to vessels their position when they may be influenced by the indraught of Carnarvon Bay. All the bearings are magnetic.

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#### OPENING OF A DRY DOCK AT COLONIA.

THE following has been forwarded for publication by the Board of Trade :—

“ Monte Video, June 25th, 1869.

“ Sir,—I consider it my duty to give you the information of the inauguration, at the Port of Colonia, in this republic, opposite to Buenos Ayres, on the 20th instant, of a dry dock for the repair of ships. The description of this work, according to the printed account, is that the dock is capable of landing, high and dry, vessels of 1,000 tons burthen; the present length of the cradle is 230 feet, and capable of being extended, and there is what is called a submarine railway attached, extending a distance into the water of 650 feet. Should the working of this enterprise succeed, it will abolish the necessity of sending every vessel that may require docking to Rio de Janeiro, a distance of 1,200 miles. “ I have, etc.,

“ J. ST. JOHN MUNDO, *H.M. Acting Coasul General.*”

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#### OPENING OF THE ISTHMUS OF SUEZ.

WITH the opening of the Isthmus of Suez some hitherto neglected ports of the Mediterranean appear likely to rise into importance; amongst others which will eventually become important entrepots for goods to or from England, passing through the Isthmus, Portvendres is said to deserve special attention. Situated in the department of the Pyrenes Orientales at a few miles from Perpignan, its port is of easy access at all seasons, and admits vessels of the largest tonnage to come close to the quays to load and unload. The French Government spent many millions of francs some years ago to complete the port and quays. Portvendres is equi-distant from Bordeaux and Cette, but this last port is bad, particularly in winter. Goods could come from Suez to Portvendres by steamer, then by rail to Bordeaux, and from this latter port to London or Liverpool by steamer—all in ten or twelve days. The railway takes the goods at Portvendres, and delivers them in the Thames or the Mersey, as the case may be, at a “ through ” and very moderate rate. A line of steamers from Suez to Portvendres is thought likely to pay well. The advantages for sailing vessels would be still more important, as sometimes they are obliged to remain several weeks before they can pass through the Straits of Gibraltar. Marseilles, being too far away by rail, cannot compete with Portvendres.

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#### TO CORRESPONDENTS.

THE drawing accompanying Mr. Forbes's paper in this number is unavoidably reserved for our next.

# THE NAUTICAL MAGAZINE

AND

NAVAL CHRONICLE.

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DECEMBER, 1869.

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## WHAT IS A GOOD COMPASS?

DOUBTLESS this is a question which has been satisfactorily answered by the Admiralty Compass Department, and by the Liverpool Compass Committee, and many scientific men: but as these *very* scientific people do not publish their investigations in books, or magazines accessible to us, we are pretty much left to ourselves to find out what constitutes a good compass, and how we should select one from among the many "Holloways" of compass makers.

Hitherto, I could not say that I had ever seen a good compass, but during this late voyage I have had the good fortune to have had three with me. Now it occurs to me, that I ought to make it known, because, as "Mercator" well observes,\* "a chronometer is as dust in the balance, in comparison with a good compass." Such a communication may also be useful to any captain who is superintending the fitting of a new ship, should he have the *selection of the compasses*. I am the more readily induced to make this known, because I have not seen any remarks from a sailor who had found a good compass. Captain W. Walker's compass I have never seen in the Merchant Service, therefore am unable to say anything about it. I have also the probability of not being accused of writing a "puff" for a certain compass, because I do not know who made those of which I am about to treat, for the reason given by "Mercator" at page 648 of the *Nautical* for 1866, which is—that the last optician in whose care the compasses are left while at home, *always* sticks his name on the card. As I know *he* did not make them I am quite in the dark as to who did, but should I find out before this goes to press, I will make the fact known.†

\* *Nautical Magazine*, 1865, p. 405.

† The compass alluded to was made by Messrs. Liley and Son, London.

I will endeavour to describe them as minutely as possible, so that they may be identified.

The card is  $6\frac{3}{4}$  inches in diameter, with two needles  $\frac{1}{8}$  of an inch broad by  $\frac{3}{8}$  of an inch in thickness, at a distance of forty degrees apart. Underneath the card and fixed to it, is a brass ring  $5\frac{1}{2}$  inches in diameter,  $\frac{1}{8}$  of an inch vertical depth, and  $\frac{1}{8}$  of an inch thick. Inside the bowl there is a copper ring  $1\frac{3}{4}$  inches in depth by  $\frac{1}{2}$  an inch thick. The pivot is of some hard yellow alloy placed in a spring, so that the plane of the card bisects the copper ring within the bowl. The weight of the whole compass, gimbals included, is 13lbs. 9oz.

It has been used as a steering compass in my present ship (an iron one) during a voyage to India and back, and has been the admiration of every one on board, because it has been so steady. It has been tried under no ordinary circumstances, because the ship rolled frightfully during the passage out, indeed, I never saw anything approaching it during twenty-four years at sea. Under no circumstances would she keep within twenty degrees, and when running down our easting, when we could not keep our yards well braced up, with strong winds nearly right aft, "she" would describe an arc of sixty degrees, in rolling day after day. Occasionally she went forty degrees from the perpendicular: nevertheless, I may say the compass was absolutely steady—at least, I never observed it to vibrate beyond a point each way, and then at the maximum of rolling: at the same time we had an ordinary common compass going nearly completely round, therefore absolutely useless. I am so impressed with the value of the former that, should I change my ship, I purpose buying one and taking it along with me into whatever ship I may go.

It is difficult for me to analyze the compass in order to find out the cause of its being so steady, and yet of good directive power. Needles on their flats have been proved not to be good. Is it simply the heavy copper ring within the bowl? I will not venture to give an opinion, but taken as a whole it is a first-rate compass, infinitely superior to any one which I have seen hitherto. The yellow metal pivots I object to, because they are not hard enough, and require frequent sharpening; steel ones are to be preferred, or else such as are made for the Admiralty Standard Compass. By the way, I have an intense desire to have one of these compasses, and wonder if they are to be bought from the Compass Department, their probable price, and how one should set about trying to get one, supposing our owners were liberal enough to pay for it.

I hope this notice will induce many other men to give us their experiences of the best compasses which they have used in their respective ships, because it is only at sea, when the real value of a compass can be thoroughly known and ascertained.

It is to be regretted that much information regarding the compass and magnetism exists in publications quite out of the reach of seamen. I think we have just cause of complaint on this matter, because we frequently find there has been a lecture, or paper on magnetism and

kindred subjects, read by some eminent man before some scientific society, and published in their transactions, which are about as inaccessible to most sailors as the North Pole. The very men for whose benefit it is read, and who might derive great pleasure and instruction if they could only read it, are as completely debarred from such enjoyment as if it were printed in Sanscrit. I sincerely hope that my remarks may meet the eyes of some of our "Big Wigs" in science, and that the next time they are about to read a paper on any subject which concerns us, they will not forget there is such a magazine as the "*Nautical*" ready to convey it to every sailor.

We also beg to remind our scientific men that although some of our Local Marine Board *friends* (?) may take the trouble to tell the Board of Trade we are a "drunken set," not fit to be trusted with spirits—*it may not be true*. Possibly there may be very many of us quite capable of enjoying an intellectual treat on magnetism, or similar subject, therefore we shall be glad of any scientific crumbs which may come in our way, Local Marine Boards notwithstanding. Moreover if it is so earnestly desired to raise the standard of scientific education among masters and mates, I do not know a better means than by scattering broadcast that information which has been as absolutely inaccessible to us as if it were at the bottom of the sea, and lest there should be any doubt about the means of disseminating such knowledge, we again respectfully remind them that there are our professional magazines, especially our worthy "*Nautical*" ready to carry it into the cabin of every master and mate in the "Mercantile Marine."

QUOD VERUM TUTUM.

At Sea,  
August 9th, 1869.

[We thank our correspondent for his opinion of our desire, no less true than pointed:—and shall always hope to keep in the path of laying *serviceable* (not sensational) matter before our readers. In reference to the copper ring which he mentions as being fitted to his compass, it is well known that this addition was made by Sir William Snow Harris of lightning protection celebrity; and we believe that the eminent makers Messrs. Lilley, were especially those whom Sir William patronised for making his compass. But it is mentioned in our Volume for 1862, page 581. We regret to find that complaints of the compasses used by our Mercantile navy are becoming common in our pages, as our Volumes for several years past will show. This is not the first time Government superintendence has been asked for. Are such things not to be looked into by authority, or are our Merchant Seamen still to be at the mercy of unprincipled men. Page 648 of our Volume for 1866, is well worth the perusal of those who wish well to our unprotected Merchant Seamen.—ED. *N.M.*

"MERCHANT SHIPPING AND NAVIGATION BILL."

OUR MERCHANT SEAMEN.

OUR readers are aware that a new Merchant Shipping and Navigation Bill is about to be brought before Parliament. Part II. relates to Masters and Seamen, and we propose considering it in its bearing on the improvements needed for "Our Merchant Seamen."

Clauses 135—145 relate to apprentices. We had hoped to find that some encouragement was about to be given to those ships which carry a full complement of apprentices who do not pay fees to the owner. We suppose that the best style of encouragement would be a certain reduction in dues, etc. It is well known that our streets and reformatories are crowded with boys who would be delighted to go to sea, and thereby do good to their country in two ways. 1st, By increasing the number of British seamen, so valuable at all times, but most of all during war, when foreigners cannot man the Royal Navy. 2nd, By reducing the number of those who are training to vice, and so lowering the heavy tax which poor-rates, and the maintenance of prisons, police, etc., bring upon the well conducted and industrious part of our population.

But it is also well known that many owners of sailing ships prefer ready made seamen, and do not carry either boys or ordinary seamen; this custom is becoming more common, so that the proportion of apprentices is constantly decreasing, whilst that of foreigners is increasing. It should also be borne in mind that our steam fleet is fast increasing, and that steamers do not *make* seamen though they employ them.

Another reason for giving encouragement to sailing ships carrying a full complement of apprentices is, that shipowners are personally interested in having a large number of foreigners in our Merchant Service, because in case of war these men will not be pressed or otherwise tempted to serve in the Royal Navy.

Another great improvement would be to give certain advantages in the shape of increase of pay, monthly notes, etc., to such A.Bs. as have served an apprenticeship, passed a certain examination, and maintained V.G. characters. This is strongly recommended in the "Report of the Committee of the Society for Improving the Condition of Merchant Seamen." The only way in which the Merchant Shipping and Navigation Bill could help forward the work seems to be by encouraging sailing ships to carry apprentices, by establishing an examination for A.Bs., and by empowering the superintendents of Mercantile Marine offices to back the monthly or allotment notes of V.G. A.Bs. This brings us to that part of the Bill (Clauses 169—171), which treats on "Allotment of Wages."

We had hoped that the new Bill would have met the difficulties experienced by so many V.G. officers and seamen, of not being able to get "Allotment Notes" for their families. Many shipowners will

not grant them. This arises from the fact that seamen have frequently run away whilst their families continued to draw on their allotment notes, so that they overdraw their pay. Of course this must be prevented, but we are of opinion that in these days of steam and telegraph no shipowner need incur a loss if ordinary precautions were taken, and that allotment notes to V.G. men might be made compulsory, the shipping masters backing them, so as to hold the shipowner secure from loss, if he found that his captain or agent had taken every precaution to stop the note after the man had run.

The families which do not get allotment notes must, under certain circumstances (such as the illness of the wife, etc.), come upon the Parish, or run up bills, to be paid after the husband's return, with a ruinous percentage added to cover risk. If there be any risk in issuing well managed allotment notes, the Government might charge a small percentage on them to cover it.

We next come to "Discharge and Payment of Wages in the United Kingdom," Clauses 172—178; and "Legal Rights to Wages," Clauses 179—187.

These clauses seem to have the elements of advantageous change, but all depends upon how they are worked at the shipping offices.

We are decided in our conviction, that all methods of payment will fail in the most material point if it be not made quite easy for the seaman to go *at once* from his ship to his home. The present system of waiting three or more days for pay day (in most cases having to borrow money from the crimps, etc.), being surrounded by men and women tempting them to excess, and personally interested in their getting drunk and stupefied, so that they may not know what amount of debts they have contracted, has and is ruining its tens of thousands. The question we have to ask is, does the new Bill meet the difficulty?

The old Bill required that each seaman should receive about a quarter of his pay *at once* and the rest on pay day. But the shipping offices had no system for carrying this clause into effect, so that it was almost a dead letter. Had this clause been thoroughly carried out, and the signing of the "Release" so managed that it could have been done before the seaman left his ship, he might then have gone home *at once*, and his remaining pay and papers might have followed by post. Such a system, with the convenience of easily available cabs, and registered porters, would go far to overcome the great difficulty alluded to above.

Now we cannot find in the new Bill that any part of a seaman's pay is required to be handed to him on his leaving his ship, so, unless he gets the whole of his pay at once, he must borrow money, and wait for pay day.

In Clause 177, the new Bill requires that each seaman shall sign a release in the presence of a superintendent, "on the completion of any discharge and settlement;" but it goes on to say, that the release may be signed by a duly authorized superintendent, which is more fully explained in Clause 187. From this we learn that the release *need* not now keep a seaman three days, under vicious influences,



before he goes to his friends. But we fail to see how he is to get immediate communication with the superintendent.

Clause 185, of the new Bill, requires that a seaman's wages shall be paid or deposited "at the time at which he lawfully leaves the ship, or as soon afterwards as possible," giving him pay up to the time that they are so paid or deposited. This will no doubt expedite the payment of seamen, and shipowners will probably deposit with the superintendent a sum equal to the wages of the crew, or a little over that sum, as soon as their services are dispensed with. But the question of how the seaman is to get a part or the whole of his pay *at once*, and go off to his friends, is not made clear by the Bill, and without this being made not only possible but *very easy*, we think the Bill will have failed in one of its most important points.

We are quite of opinion that with the old Bill the great want was some change in the working of shipping offices, and it seems probable that the new Bill contains all the necessary power if it is well carried out. But if our seamen are still *compelled* to remain even a few hours under the vicious influences which pervade our seaports, the extra pay which the new Bill gives them for the time between their leaving their ships and being paid, will, in a large number of instances, be only an additional sum in the hands of their vicious tempters; though we allow that they have a right to be paid for that time.

We next come to Clauses 205—218, which relate to "Remittance of Wages, Savings' Banks, Insurance, and Annuities for Seamen."

Of these fourteen clauses, the first thirteen relate to the Remittance of Wages and Savings' Banks, excellent institutions, which are doing much good.

Clause 218 says, "The enactments in this part of this Act contained, with respect to Money Orders, Savings' Banks, Insurance against death, and the Grant of Annuities, shall apply to all seamen, and to their wives and families, whether such seamen belong to the Royal Navy or the Merchant Service, or to any other sea service."

Now we have looked in vain for any enactment which relates to "Insurance against Death," or to "the Grant of Annuities," so that we must hope that they are coming, for we are of opinion that no greater boon could be conferred on seamen than an Annuity or Pension Fund and Life Assurance, adapted to their uncertain lives, by allowing them to pay lump sums whenever it suits them, and giving them the fair benefit of their money. They should be voluntary, guaranteed by Government, and worked at shipping offices.

Young men would be induced to work for an annuity at a certain age, and when a man had subscribed a few pounds he would be more likely to be steady, and less likely to change his name or run away from his ship. Royal Navy men would work to increase their pensions, and a very strong inducement to steadiness would be offered to both services. It is well known that our Merchant seamen were not rightly treated with regard to the old Merchant Seamen's Fund, which was forced upon them because they were said to be such children that they could not take care of themselves; and then the

responsibility of giving any benefit from it to many thousands who had subscribed to it for years, was got rid of by making it optional whether they continued to subscribe or not; this offer being made at the pay table, when a very large proportion of them were half-seas-over.

The best remedy which the present Government can give them for this unfair treatment will be a Guaranteed Pension Fund and Life Insurance; not managed (or rather mismanaged,) like the last, by local committees, but by the Government which is responsible for it, and making it voluntary, so that each man may feel that his share in it is his own act; a wholesome freedom, which will make him appreciate it.

We should have been glad to have seen a clause on "Recreation for Seamen." In which it might have been stated that colonial governments were requested to grant a piece of land, and otherwise encourage the building of institutes for the rational recreation of seamen where it was found that they would be advantageous. In some of our large colonial ports there are always from two to three thousand seamen, belonging to the ships in the port, who naturally go on shore for recreation, and find that the lowest and most degraded parts of the town are devoted to them, where they are surrounded by temptations which, to the sad grief of thousands of parents, have ruined even many *well educated* young men, whilst those who have less power to resist become an easy prey.

Lord Lawrence granted a Seamen's Play Ground to Calcutta, and was of opinion that an Institute should be built on it, but the money for it was diverted to building a Sailors' Home for the two or three hundred seamen who live on shore, and the cyclone and famine interfering more money has not yet been raised.

As a case in point, the Harbour of Refuge at Holyhead is very much in want of a Sailors' Institute; they frequently have from two to three hundred vessels lying there windbound for several days or even weeks, and we learn that the crews of these vessels seek their recreation in the low public houses, adding much to the vice of the town.

The Hon. W. O. Stanley, M.P., and Admiral Schomberg are trying to start an Institute, and we wish them every success. It must be borne in mind that they have to look abroad for help, as Holyhead is not a trading Port full of rich merchants and shipowners, but merely a Harbour of Refuge for all vessels trading to the numerous Ports on our West and Irish Coasts, having itself a small and very poor population. The same gentlemen are trying to start a Hospital for Seamen, and we trust that Government, as well as Merchants and Shipowners, will give a helping hand to Holyhead.

We have already mentioned the "Report of the Committee of the Society for Improving the Condition of Merchant Seamen." This Report says:—

"The members of the Committee were selected to represent the views of all the classes who might, it was supposed, take an intelligent interest in the objects of the Society.

"It includes Members of the House of Commons, shipowners who

have never commanded ships, shipowners who have commanded ships, masters of merchant ships who are not shipowners, naval officers, the Chaplain of the Well Street Sailors' Home, the Chaplain of the Water-side Church Mission at Gravesend, and medical men.

. . . "One of the objects has been to ascertain whether a committee of gentlemen, who might be expected by some persons, to regard the question of improving the condition of Merchant Seamen from very widely divergent, if not opposite points of view, could agree in drawing up a Report which should contain really valuable suggestions for the legislator, for the shipowners, and for the seamen.

"The Committee is satisfied at being able to state that, although members have differed on certain measures, yet the clauses in their present shape have been adopted without protest, which proves, what it is most important to point out, viz. :—that it is the general opinion of the Committee that measures not less stringent, reforms not less radical than those pointed out should be adopted, and adopted promptly."

Now that a Merchant Shipping Bill is about to be brought before Parliament, we strongly recommend all who take a practical interest in seamen to peruse this Report:—published by Harrison and Sons, 59, Pall Mall.

#### THE DOUGLAS ON THE ELIZABETH REEF, AUSTRALIA.

OUR last number contains a letter addressed to us by Mr. F. Aldrich, on the loss of the barque *Douglas* on a reef off the eastern coast of Australia, stated to be the Elizabeth reef. This assertion, however, is doubted on the authority of her commander, who considers the reef on which his ship struck to be in latitude  $28^{\circ} 56'$  S. and  $160^{\circ} 30'$  E., a position about ninety miles to the E.N.E. of the Elizabeth reef. We know not the relation of our correspondent as to the commander or owner of the vessel, but we have promised him our opinion as to the place of the reef, and therefore can proceed to consider the circumstances advanced without any kind of prejudice whatever. These circumstances will, of course, only relate to those affecting the progress of the vessel herself, and the first which we are enabled to collect from the numerous papers with which our correspondent has liberally supplied us, is as follows:—

In the *Newcastle Chronicle* of the 8th of June, we read, "Captain Sayers (commanding the *Douglas*) states that he sailed from Newcastle on the 4th of May, bound for Yokohama, Japan. He experienced easterly winds from the time of leaving until the morning of the 8th of May, when in longitude  $160^{\circ} 30'$  E., and latitude  $28^{\circ} 56'$  S., the vessel struck upon a coral reef known as the *Golden Grove Shoal*, but which was not laid down in any of his charts. The ship struck at five o'clock in the morning, at which time it was quite dark."

And in addition to this information, we also learn from the *Newcastle Pilot* of the 16th of June, that the commander considered "his position on the (?) 8th of May (wrongly printed the 3rd), would place him nearly midway between the Elizabeth reef and \* \* \* the northern extreme of Howe's Island. He then seems to have steered a N.N.E. (little easterly) course about 110 miles, when he struck." There is some mis-statement here, as the *Douglas* was on the reef before daylight on the morning of the 8th. It will be, therefore, necessary to reject this statement, and we will adhere to the commander's account already quoted.

Now we are relieved from all doubt or question about the wind, which we are told was easterly during the whole time from her sailing on the 4th, to her wreck on the morning of the 8th. The effect of this easterly wind would, of course, be to produce a drift to the westward, and we are not without authority on which to form judgment as to its amount, for we read in the *Nautical Magazine* of 1852, as follows:—

"The *Acheron* steam vessel had been set in an E.N.E. direction by the current in the vicinity of the reef thirty-seven miles in sixteen hours while on the east side of it; and W.N.W. twelve miles in ten hours on the western side," an effect which was concluded by the master of the *Acheron* to have occasioned the loss of the *Tyrian*.

But what have we before us: A vessel sails from a port (*Newcastle*) 400 miles to the S.W. (to leeward) of the Elizabeth reef on which before daylight on the fourth day she strikes. But the commander says this was not the Elizabeth reef, but another which would be another 100 miles to the N.E. And it is clear that the Elizabeth reef would be in her way to the position in which the commander supposes his vessel was lost. She would have had to make 500 miles good on a N.E. course against all drift or current in about three days and a half, which drift, according to the above authority, would be about twenty-eight miles a day. In doing this she has also to clear two reefs (the Elizabeth and Middleton to the north) which would be in her way.

The conclusion at which we have arrived is, that the *Douglas* did not make the progress that would have taken her to the commander's position of the reef on which he was lost owing to the easterly winds which we are told he had; but that the progress of the ship was checked by them, and that there was some want of discretion shewn in not shaping a course that would have removed his ship as soon as possible from the dangerous locality in which she was, arising from the presence of the reefs we have mentioned, and the uncertain character in strength and direction of the currents by which they are beset.

We are also favoured with a copy of the *Sydney Morning Herald* of the 23rd of July, in which is the report of Lieutenant Gowland on this subject, and which as it is freely commented on by our correspondent, we give verbatim. It is addressed to his Excellency the Governor.

Government Steamer *Thetis*, 12th July, 1869.

My Lord,—I have the honour to report to your Excellency that, having been instructed of the wreck of a barque named the *Douglas*, on a reef not shown on the existing Admiralty Charts, in latitude 28° 56' S., longitude 160° 30' E., when on her passage from Newcastle to China, I considered it my duty to examine into the matter, and visit the locality.

From a subsequent conversation, however, with the captain of the vessel, in presence of the Superintendent of Pilots, both Captain Hixson and myself entertained very little doubt that the ship was lost on a shoal, well known and clearly defined on the chart, named the Elizabeth Reef, particularly as the master of the *Douglas*, having lost all his log books, charts, etc., was only able to give an approximate position of the wreck from memory; and on proceeding in the *Thetis*, on the 8th instant, to examine it, our suppositions were confirmed, by finding the *Douglas* hard and fast on the south-east extremity of the coral ring, encircling the reef.

I was unable to land, in consequence of the heavy surf that was breaking, but the following description, from one-third of a mile distant, will, I doubt not, readily identify the vessel:—

1. An American built vessel, of about 400 or 500 tons, painted black, with a long fiddle figure-head, and an "elliptic stern."
2. Barque rigged, with white lower masts, mast-heads, painted black; short bowsprit, also painted black.
3. Lower topsail, topgallant and royal yards across, painted black.
4. Lower rigging, wire, forestay and topmast backstays, apparently rope. Maintopmast stay set up on deck at foremast.
5. A boat hoisted up to the starboard quarter davits, and apparently turned over in the gripes, and what seems to be a "hurricane house" on deck.
6. Lower yards braced "sharp up" on the starboard tack; the courses had been set and not taken in, as the leech and foot roping of the sail is still standing, frame like, hauled on board, with pendant shaped streamers of the sails still fluttering from them, and from the yards the body of the sail has been blown entirely away.
7. Topsails yards on the caps are braced more in, the sails still hanging from them in tatters.
8. Topgallant and royal yards nearly square, and if the sails had been set they have now disappeared; but from the appearance of the yards, I should judge the royals were in at the time of the disaster.
9. The barque is on the south-east extreme of the reef, nearly dry at low water, lying over on her port bilge, heeling about thirty-five degrees, with her bows pointing seawards, rudder unshipped, and with these exceptions, to all appearance as perfect as when she left port.

Had she been steered 200 yards more to the eastward she would have cleared the reef.

The Elizabeth Reef, in latitude 29° 50' S., longitude 159° 4' E., 480 miles north-east from Port Jackson, and 105 miles north of Howe Island, is an atoll shaped coral patch, encircling a central lagoon some

sixteen miles in circumference; the edges, on which the sea breaks very heavily, are covered at high water, except a portion of the ring on the northern side, where patches of white sand and three or four huge square boulders show prominently from a distance of five miles off; from the mast-head of a ship the reef might be distinguished eight miles off; at night it would be difficult to make out, until the unusual roar of the breakers indicated its proximity.

The water within the reef, apparently very shoal, was beautifully clear and smooth, of a bright ultra-marine tint, with patches of white coral showing through, dotting its surface, a very pretty contrast to the murky indigo hue assumed by the ocean waters encircling it; a few birds of the gull species (*Larus Pacificus*), and sooty-coloured Cape pigeons (*Daption Capensis*) were observed in the vicinity of the shoal.

Finding this wreck answer so exactly to the description of the *Douglas*, furnished me by Captain Hixson, and knowing that the locality had been critically examined by H.M.S. *Herald*, and the many dangers reported clearly traced to the well-known Elizabeth and Middleton reefs, I did not consider myself justified in wasting any more valuable time searching for an *imaginary Vigia*, and returned to the coast of New South Wales on the 11th instant, meeting the heavy westerly gale which was then threatening on the 9th, and a southerly gale on the 10th. The *Thetis* "lying too," behaved admirably. Thus far the report.

The description given by Lieutenant Gowland, in the above nine sentences, may be taken as the several points necessary for identifying the vessel.

A boat turned over in her gripes appears in the sketch sent to us of the *Douglas*, in the *Illustrated News* of Sydney.

In reference to paragraph 6, nothing is said of reducing sail in the commander's account, but the raft is set about at once—the sails left standing, and, as would appear by the *Illustrated News*, as much was left of them "in frame" as the weather would leave.

"The south-east extremity of the coral ring encircling the reef" may certainly, in our opinion, be taken to mean the S.E. edge of the reef which the *Douglas* seems to have all but cleared. Our correspondent looks with an unfavourable eye on the report, and doubts the possibility of a vessel of tons being mistaken for one of tons: but this observation we hold of small amount—tonnage is no easy matter to guess at.

And now let us add a concluding remark on the whole subject. We have before us an elaborate plan of Captain Denham's of the Middleton reef, from which the supposed reef of the *Douglas* is but seventy miles in an E.N.E. direction. The *Golden Grove* reef, as it is termed by her commander. We can find no mention of this Golden Grove reef in any work we have consulted, and possibly the reason it is omitted from the charts, consists in an entire disbelief of its existence.

But we cannot believe an officer, making so complete a survey as Captain Denham has done of the Middleton shoal, would leave the reported place of another so close to it, as the *Golden Grove* was said

to be, without examining it, and therefore he must have considered this *Golden Grove* as an ignis fatuus—something like the Devil's rock in the Bay of Biscay, which turned out to be no more than floating logs of timber. We have not, however, seen any memoir or report on Captain Denham's survey, and are unable to say more than this. But in our opinion, there appears quite sufficient authority for concluding that the Douglas reef and the Elizabeth reef are one and the same danger, the position of which is very well known, and should be carefully avoided by every passing ship.

One word more:—If the *Douglas* on the day before she was lost was really midway (as stated) between Howe's island and the Elizabeth reef, which statement is entirely unsupported, "a N.N.E. a little easterly course" was not a safe one to steer when her position must have been quite as uncertain as the currents themselves.

It is satisfactory, however, at the conclusion of our reasoning, to be enabled to give the *coup de grace* to the cause of all this discussion, and to pronounce finally, and as conclusively as if it were *ex-officio*, that the supposed reef on which the commander of the *Douglas* asserted that his ship struck, and called by the flashy name of the *Golden Grove*, is of the same character as the Devil's Rock in the Bay of Biscay, and many others, the locality of which this journal has full often been the means of uprooting from the charts.

A new edition of the Pacific Chart (Admiralty Catalogue Sheet, No. 2468), shews that Captain Denham had a deep cast of 200 fathoms *without bottom*, close to the very position chosen by the commander of the *Douglas* for that of the *Golden Grove* on which his ship should be lost. This we say at once is conclusive, and shews that Captain Denham\* was fully alive to the importance of the subject. His ship the *Herald* we perceive has left her impression about these reefs in a goodly shew of deep soundings and no bottom. The appearance of this work is highly satisfactory, for it not only proves the impossibility of the existence of any such shoal as the *Golden Grove*, but provides a complete denial to all such statements. Therefore this work shown on the chart may be taken by our correspondent Mr. Aldrich, for that further examination by the Admiralty surveyor that is sought for by him; and we lay aside our investigation with much satisfaction, but some surprise that this conclusive work was not adduced by Lieutenant Gowland, as there would then have been no appeal on the subject.

\* It is to be regretted that no historical record has been left, of the extensive and important surveying voyage of H.M.S. *Herald*, under the command of the present Admiral H. M. Denham. Although in detached and distant portions, it combined the labours of that intelligent and industrious officer in many islands of the Pacific Ocean, the plans and charts of which are published by the Admiralty, but without any memoir or historical testimony relating to their surveys, occupying a voyage of several years.

### THE EARLY NOVEMBER SPRING TIDES.

THE Spring tide of the 3rd of November affords an interesting example of the great importance of the wind, when it is blowing from a favourable quarter, for affecting the rise and level of that tide. It will be seen by the accompanying extract, that the tide in the Thames on that day shewed a higher level than it did at the Equinoctial Springs in October, when the October tide ought to have been higher than this of the 3rd, and the reason why the latter tides come so much higher than the Equinoctial tides was evidently the effect of the wind on the level of the German Ocean. Let us consider this question.

The geographical position and contour of the German Ocean, nearly closed as it is at its southern entrance, and widely open as it is in the north, serves completely to realise the phenomena to which we allude. We find by a reference to the meteorological or weather report of the 3rd of November, that at Wick, on the western side, and at Skudesnaes, in Norway, on the eastern side of the German Ocean, the wind was occasionally pretty fresh from N.N.W., while at Aberdeen, Shields, Scarborough, and Yarmouth, on our shores, it was blowing from N.W. Now, the effect of this wind would be to heap the waters of the German Ocean to the southward, forcing them down towards the Straits of Dover, where they would accumulate and rise to their level of high water, simply from being *unable to escape through the Straits of Dover at the rate, and amount of volume with which they are forced by the wind to flow into it from the north.* Here then is the source of the Thames tide, and we find that of the 3rd of November so remarkably high as to have occasioned much mischief and inconvenience at various places on its banks. Similar accounts will, no doubt, be received from other places situated on the southern shores of the German Ocean, for we find the wind at Wick N.N.W., at Aberdeen, Shields, and Scarborough N.W., and even at the Helder and Yarmouth N.W. and W.N.W. It is also remarkable that the wind on the *western* coasts of this country was from the westward, at the same time forcing the waters of the Atlantic (being to the northward of the British islands) over towards the entrance of the German Ocean, where they would be driven to the southward along our eastern shores by the N.W. winds above mentioned. And situated as the wide mouth of the Thames is, at the southern part of that ocean, it could but receive the accumulated waters; which obeying the impulse of the flowing tide, had inundated its banks even to Putney and Fulham. While the estuary of the Thames presents its wide funnel shaped opening, formed by the shores of Kent and Essex, to receive it, the upper reaches of this river will ever be subject to such inconvenient visitations at Spring tides, whenever they are attended by northerly and N.W. winds; and the stronger these blow, the higher may the tide be expected to rise.

The following is the account of the high water of the 3rd of November, which was eighteen inches higher than the tide of the first



week of October, the Equinoctial Springs, when extensive preparations were made to meet the damage anticipated from the "great tidal wave:" but they wanted the northerly wind which these have had, which found the waterside population unprepared for them. The October tides had no assistance from the wind; but these of November have had more than could be desired for the banks of the Thames. But no preparation could have prevented the visit. The extract to which we have alluded says:

"On the afternoon of November 3rd, there was an extraordinarily high tide, and the Thames, about half-past one o'clock, had risen to a height of three feet three inches above the high water mark, as shown by the index at St. Paul's Pier. All the way from Greenwich to London, along the banks of the river, great inconvenience was caused at the warehouses and wharfs, and in many instances much damage must have resulted. At St. Paul's Pier the river flowed about fifteen feet beyond the wharf, and the passengers had to wade through it ankle deep to get to the steamers. The dwellers by the water side, over the rowing ground between Putney and Kew, were perfectly at a loss how to provide against the sudden and unexpected rise of water, the occupants of all houses near the bank being subject to much annoyance, and in many cases loss and damage. The improvements along the towing path, which it was thought had been made sufficiently high to resist any pressure of water, were of no avail, the tide completely submerging the path and nearly obscuring the bridges, and lying in great lakes in the private grounds adjoining the high road to Barnes. At Hammersmith the water was up in the road, and the steamboat accompanying the race between Coxon and M'Mahon was damaged in a fruitless endeavour to get under the Suspension-bridge, much to the chagrin of those who had paid their money to see the race. Here again the tide was all over the banks, Chiswick Ait being lost to view, while the same indications were observable at the Mall at Chiswick, and along Barnes-terrace, where the water was entering the private-houses, and reached up to the rails. At May's boat-yard at Barnes, specially built on logs to be above the reach of the water, at the Thames, London, Leander, Styles's, and Simmons's yards, the craft were all afloat, and the water had reached right up into the High-street, Fulham. But perhaps the most remarkable sight was in the Bishop of London's grounds, extending from Fulham Church to some distance up the Middlesex bank. Here the water was rushing over like a cataract, the beautiful lawn had given place to the overpowering element, and the sheep grazing a little beyond had to take refuge higher up. Accounts of considerable damage have also reached us from other places along the river's banks, and it is noticeable that it was flood at Putney for five and a half hours, the average being a little over four. The captain of the steamboat above spoken of states that he does not remember such a tide during the time he has navigated the vessel, twenty-three years."

Since concluding the foregoing, in which the cause of the supposed want of obedience in the tides to fulfil all the expectations concerning

them, whether reasonable or unreasonable, we have found the following additional observations on their supposed ill behaviour in that same excellent journal the *Daily News*, from which our former extract was made.

This alleged misconduct in our friendly\* phenomenon of the tides in general, we have fairly accounted for above, in reference to those at nearly our own doors; while the *Daily News* points out the supposed defects observed, and still says look round for causes. But here is what is said by a contributor to that journal.

"The tides have not been obedient lately to the behests of astronomers. That the storms which were predicted for the first week in October should not have taken place according to order surprised no one, perhaps, except Lieutenant Saxby. But the high tides promised for the 6th and 7th of that month were predicted by astronomers, and those who visited the Embankment and the bridges to see the great tidal wave come sweeping in, and to watch the mischief it might work, were trusting to the recognised authorities in tidal questions. Yet, as we know, the high tide declined to appear either in our rivers or on our shores. We are reminded that it visited America, indeed; but "it's a cry to Loch Awe." Now, however, while no one was looking for an unusually high tide, and when therefore no preparations had been made to prevent the mischief which it is capable of working, the Thames has been swept from its mouth to Teddington Lock by a tidal wave, such as very seldom visits our rivers. All the way from Greenwich to London the lower rooms and floors of wharves and warehouses were flooded. Higher up the height of the tide produced yet more unusual effects. The towing path along the reaches above Battersea, although it has recently been improved, and was thought to be high enough to resist any possible tide, was completely submerged, and the water lay in great lakes in the private grounds near Barnes. For the first time, we believe, in the history of Thames racing, the steamboat carrying a referee was unable to pass under Hammersmith Bridge, her funnel being stove in in the attempt, and the referee having to be sent on in a steam launch.

"The disagreement between the predicted height of tides and the level to which they actually attain is perhaps one of those circumstances which modern science cannot at present hope to deal with satisfactorily. The astronomer can calculate with the utmost exactness what part the sun and moon will take in swaying the waters of the earth, but the winds are beyond the range of scientific prediction.

\* We say friendly, for the tides in many ways assist us in providing our wants.

"The Mighty Ocean in its boundless plan,  
Is made subservient to the wants of man :  
\*           \*           \*           \*           \*  
If stinted here, or too abundant there,—  
The flowing and the ebbing tides repair."

INEDIT.

How well the occupants of tidal harbours know this, to say nothing of the tidal business carried on by barges in our principal rivers.

Still, it may be questioned whether there is not still room for improvement in the treatment of the tides. Observation and theory have done much, but the very magnitude of the labours which Whewell, Lubbock, and others, have quite recently accomplished, shows that the subject is one of those which will bear a great deal of reinvestigation. Besides, the whole theory of the tides is in an unsatisfactory and unsettled state. Quite lately, at a meeting of the Royal Astronomical Society, no less an authority than the Astronomer Royal showed that the account given in ordinary text-books is the direct reverse of the truth; and Newton and Laplace came to precisely the same conclusion. Yet the prediction of tides is founded on the popular theory; and facts, too, as every one knows, are by no means accordant with the views of the three eminent astronomers just named. Altogether, we may fairly doubt whether the phenomena of the tides can be looked upon as among those which men of science have fairly mastered."

We need only observe, that astronomers have already exhausted their laws. The tide of October had no auxiliary wind to assist it in rising above its calculated level, while that of November had an abundance, which forced up the level of the southern portion of the German Ocean, raising the Thames level accordingly in the manner shown in the above extract. There is no occasion for consulting Newton and Laplace for a fresh cause, which may be found in the wind by close observers of phenomena and their causes. Lubbock, Whewell, and Airy, are names which guarantee that we have obtained all we can from Newton and Laplace, and the tides are mastered, not only by those men of science, but sometimes by the power of particular winds, as they may be again on some future occasion.

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### THE TRANSIT OF THE STRAIT.

GREAT questions in their turn excite public attention. To say nothing of those minor considerations at present, such as the gradual disappearance of our leviathan ships of war, the no less gradual, but complete substitution of iron ships of war for those of wood; and keeping to our nautical predilections, the displacement of minor artillery afloat for those monster guns, which we have been compelled to adopt; there is a huge engineering feat just passing its climax, the Suez Canal, that is about to undergo its public inspection (we may call it), by which it will stand or fall, to make way for another undertaking that is to establish the transit of the Strait! Need we say that such undertaking is no less than the monster proposal, that is either to span the Strait of Dover by a veritable construction called a bridge, or to do so by means of a connected series of huge iron cylinders to form one tunnel, which shall occupy its more humble position in the bed of that Strait, which our French neighbours designate the "Pas de Calais"; and thus to form a continuous road by rail, so as to offer a complete

submarine way from shore to shore, from British ground to that of France.

Such monster measures have been so much talked of, that from the phase of possibility they will have begun to assume the colour of probability, as soon as the choice is made whether the transit shall be *under* or *over* the water. So gigantic a scheme looked at calmly in each of these shapes, seems scarcely possible of execution to the uninitiated. Yet the civil engineer of these days partakes in some degree of the character of him of ancient times. It was the boast of Archimedes of old, that had he but a fulcrum, he would move the world. From which may be inferred, that so impressed was he with the enormous strength of the mechanical powers, there was nothing he would not undertake! Are our engineers of these days much behind him? We should say not. With all the information they have inherited from their ancestors, and their own experience, they are no less ready than they were in those distant times to make light of seeming impossibilities, and to exclaim in their turn, "Give us but capital and we would do anything." There can be no doubt that it is no easy matter to set limits to the power of man. When we contemplate those invaluable edifices that befriend the seamen, of which standing out of the sea we could produce a long list of names, headed by Smeaton and extending down to those of later days; when these are calmly considered, when we see these works braving the shock of the ocean wave throughout the storms of time, we must pause well before we deny that a bridge or a tunnel for intercourse across the Strait of Dover, is to be placed among the possibilities.

However, whichever it may be, the question to be considered will be which is the most feasible. When it is considered also, that to answer this question the talents of the engineers of both countries will be engaged, there can be no doubt that the most likely to be enduringly accomplished will be selected.

The difficulties of either scheme are enormous. But there is a source of failure in one of them, that appears to be the easiest one indeed, that cannot be too highly appreciated. We would submit the question, is the sleeping iron tunnel that may be proposed for the bed of the Strait, never likely to be disturbed by the rude shocks of heavy anchors, proceeding from some ponderous Merchant vessel dragging her anchor and cable across it. If any power could affect a tunnel, could be sufficiently heavy to move it from its direct line, we should say that a heavy anchor would be, when holding a large vessel by its means against the effects of a lee tide in a violent gale of wind. Such means we believe would be fatal to it. Once tugged from its bed the joints of the cylinders would be strained, then comes leakage and then destruction. It is in our desire then for the success of the project when it is really to be made, that we are induced to ask this question, to make these timely remarks on perhaps the only serious obstacle to the success of a cylinder, on the bed of the Strait which might be proposed for the railway. Remember, we would say to the projectors, the risks to which the electric cables are perpetually exposed, what

they have undergone, and then what certainly is no less likely to happen to the cylinder tunnel. But here are the two projects as they appear in a recent number of the *Mechanics' Magazine*.

ENGLISH AND CONTINENTAL INTERCOMMUNICATION.

*By Mr. Perry F. Nursey.*

BATEMAN.

THE uncertainty of the strata in the bed of the Channel and the risks of tunnelling under the sea have led Mr. J. F. Bateman, in conjunction with M. Julian J. R vy, an Austrian engineer, to propose a cast-iron tube for carrying a railway across the Channel. The distance to be crossed, and the cost to be incurred, undoubtedly require that the mode to be adopted shall be absolutely free from serious doubt and risk, and shall be as evidently capable of accomplishment as the most ordinary mechanical operation. Some degree of uncertainty must exist in every contrivance and speculation; but, unless a scheme can be proposed which will be free from all doubt and objection so far as human knowledge and foresight can extend, it will hardly deserve, and will probably not receive, the support of the public. The various proposals for constructing submarine tubes have been carefully studied by Mr. Bateman and M. R vy, who have come to the conclusion that none of them are free from serious objections, both on the score of difficulty of construction and the dangers which would attend the operations as proposed. Their object, therefore, has been to devise a scheme by which all difficulties of operating in water should be avoided.

They propose to lay a tube of cast iron on the bottom of the sea, between coast and coast, to be commenced on one side of the Channel, and to be built up within the inside of a horizontal cylinder or chamber, which shall be constantly pushed forward as the building of the tube proceeds. The chamber within which the tube is to be constructed will be about 80 ft. in length, 18 ft. internal diameter, and composed of cast-iron rings 8 in. thick, securely bolted together. The interior of the bell will be bored out to a true cylindrical surface like the inside of a steam cylinder. The tube to be constructed within it will consist of cast-iron plates in segments 4 inches in thickness, connected by flanges, bolted together inside the tube, leaving a clear diameter of 13 ft. when finished. Surrounding this tube, and forming part of it, will be constructed annular discs or diaphragms, the outside circumference of which will accurately fit the interior of the bell. These diaphragms will be furnished with arrangements for making perfectly water-tight joints, for the purpose of excluding sea water and securing a dry chamber, within which the various operations for building up the tube, and for pressing forward the bell as each ring of the tube is added, will be performed. There will always be three and generally four of these water joints contained within the bell. A clear space between the end of the tube and the end or projecting part of the bell of 36 ft. will be left as a chamber for the various operations. Within this chamber powerful hydraulic presses, using the built and completed

portion of the tube as a fulcrum, will, as each ring is completed, push forward the bell to a sufficient distance to admit the addition of another ring to the tube. The bell will slide over the water-tight joints described, one of which will be left behind as the bell is projected forward, leaving three always in operation against the sea.

The weight of the bell and of the machinery within it will be a little in excess of the weight of water displaced, and, therefore, the only resistance to be overcome by the hydraulic presses when pushing forward the bell is the friction due to the slight difference in weight and the head or column of water pressing upon the sectional area of the bell against its forward motion. In like manner, the specific gravity of the tube will be a little in excess of the weight of water which it displaces; and in order to obtain a firm footing on the bottom of the sea, the tube will be weighted by a lining of brick in cement, and for further protection will be tied to the ground by screw piles, which will pass through stuffing boxes in the bottom of the tube. These piles will, during the construction of the tube within the bell chamber, be introduced in the annular space between the outside of the tube and the inside of the bell, and will be screwed into the ground as they are left behind by the progression of the bell. The hydraulic presses and the other hydraulic machinery, which will be employed for lifting and fixing the various segments of the tube, will be supplied with the power required for working them from accumulators on shore, on Sir William Armstrong's system, and the supply of fresh air required for the sustenance of the workmen employed within the bell and within the tube will be insured also by steam power on shore. As the tube is completed, the rails will be laid within it for the trains or waggons to be employed in bringing up segments of the rings as they may be required for the construction of the tube, and for taking back the waste water from the hydraulic presses, or any water from leakage during the construction.

The tube will be formed of rings of 10 feet in length, each ring consisting of six segments, all precisely alike, turned and faced at the flanges or joints, and fitted together on shore previous to being taken into the bell, so that on their arrival the segments may, with certainty and precision, be attached to each other. Every detail of construction has been designed, and, so far as the authors of this project can see, no contingency has been left unprovided for. The possibility of injury by anchors, or wrecks, or submarine currents, has also been investigated. The tube when laid will be secure from all dangers arising from such causes.

The building of the tube will be commenced on dry land above the level of the sea, and will be gradually submerged as the tube lengthens. The operations on dry land will be attended with more difficulty than those under water, but all these circumstances have been carefully considered and provided for. The rings forming the tube will be made by special machinery, to be expressly constructed for facilitating the work and economising the cost. This machinery is all designed and specified. The first half mile will test the feasibility of construction,

for that will have to be built both above and under water. When once fairly under water, the progress should be rapid, and it is estimated that the whole undertaking may be easily completed in five years from the commencement.

The precise line to be taken betwixt the English and French coasts can hardly be determined without a more minute survey of the bottom of the Channel than at present exists. It will probably be between a point in close proximity to Dover on the English coast, and a point in close proximity to Cape Grisnez on the French coast. From an examination of the Admiralty charts, and of such information as at present exists, the sea bed on this line appears to be the most uniform and level, and, while free from hard rocks and broken ground, to consist of coarse sand, gravel, and clay. The average depth of water is about 110 ft., the maximum about 200 ft. On the line suggested, the water increases in depth on both sides of the Channel more rapidly than elsewhere, although in no instance will the gradient be more than about 1 in 100. The tube, when completed, will occupy about 16 ft. in depth above the present bottom of the sea. Up to the point on each shore at which the depth of water above the top of the tube would reach (say) 30 ft. at low water, an open pier or other protection would have to be constructed, for the purpose of pointing out its position, and of preventing vessels striking against the tube. These piers may be rendered subservient to harbour improvements. The tube at each end would gradually emerge from the water, and on arriving above the level of the sea would be connected with the existing railway systems, so that the same carriage may travel all the way from London to Paris.

The distance across the Channel on the line chosen is about 22 miles. The tube as proposed is large enough for the passage of carriages of the present ordinary construction, and to avoid the objections to the use of locomotives in a tube of so great a length, and the nuisance which would be thereby created, and taking advantage of the perfect circular form which the mechanical operation of turning, facing, etc., will ensure, it is proposed to work the traffic by pneumatic pressure. The air will be exhausted on one side of the train and forced in on the other, and so the required difference of pressure will be given for carrying the train through at any determined speed. Powerful steam engines, with the necessary apparatus for exhausting and forcing the air into the tube, will be erected on shore at each end; and supposing one tube only to exist, the traffic will be worked alternately in each direction. This system of working the traffic will secure a constant supply of the purest air, which will accompany every train.

The estimated cost of the whole undertaking, including the stations and approaches at each end, the engine power and machinery, the interest of outlay during construction, and engineering superintendence, with a large margin for contingencies, is £8,000,000.

GRANTHAM.

Mr. John Grantham's proposition for improving the communication

between England and France is to turn the present system to account, and to make an efficient means of transit whilst the more elaborate schemes are being perfected and rendered practical. Mr. Grantham proposes steam-ships 400 ft. long, 45 ft. beam, and 600 nominal horse power, to be built of steel, and to draw 6 ft. 6 in. water, and to steer from either end, to avoid the necessity of turning. The lower part of the ship is to be cellular, so as to avoid the danger of sinking if injured by a collision, and to add to her strength. This cellular portion is 6 ft. in depth; over it would be the main saloons, these to be 10 ft. in height, and provided with ample accommodation for reclining in bad weather; good refreshment tables also would be provided, with light and air to avoid that gloom and closeness so painful to landsmen when on board ship. Between the paddle boxes would be a promenade deck, 100 ft. long, on the extremities of which would be the houses from which the vessel would be steered. To strengthen her amidships, with the least amount of weight, there would be provided four open longitudinal girders, about 250 ft. long, so arranged as to cause very little obstruction on the ship, and longitudinal bulkheads, about 90 ft. long, would run through the engine compartment. In addition to these precautions, the plates of the sides would be extended up, and form the inner side of the paddle-box, drawn off towards the ends at the same angle as the trussed girders.

In order to facilitate the transfer of passengers and luggage from the piers to the ship, wide and ample means are provided, at three different elevations, to receive the stages from the shore. The lowest of these is on the level of the main deck; the next is on the level of the promenade deck, and the upper one is on the paddle-boxes or on the captain's platform; so that, whatever should be the state of the tide, the stages may rest on the top of the piers, and be nearly level. On the piers are to be erected sheds, under which the trains are to run, as in ordinary railway stations, to be well enclosed and lighted, so that but little delay or discomfort would arise. The staircases leading from the promenade platform to the deck should be easy, wide, well-lighted, and sheltered. The great bulk of the luggage would be stowed in trucks, the bodies of which would be hoisted by hydraulic cranes on to the deck, and again lifted off on the other side, and placed on wheels provided for them. In all this there is no novelty introduced; all that is proposed may be seen in operation in other places. The only question that can be raised is as to the facility of working a vessel, such as is here described, in and out of the harbours. For experience in this, Mr. Grantham refers to the American steamers, which are managed with wonderful precision. These vessels have in some instances exceeded 400 ft. in length. Those on the rivers draw 5 ft. and 6 ft. of water, and those which put to sea vary from 7 ft. to 10 ft.; but all are of immense height out of water, the wheel-houses of some being upwards of 40 ft. above the water-line. Mr. Grantham's vessel, though drawing only 6 ft. 6 in., will not exceed 15 ft. above the water-lines at the ends. Long vessels steer much more steadily in heavy weather than short ones, and will, therefore, enter such harbours



as Calais or Boulogne with more safety than the present vessels, and, when fairly entered, there is time to bring them to a standstill before reaching their berths.

Mr. Grantham gives the following reasons for not adopting a vessel in which the trains should be carried bodily across:—First, there is the necessity of placing the vessel in a position of perfect stillness before taking the trains on or off the ship. This involves new harbours on each side, with dock gates and breakwaters to protect them. Second, the large ships necessary to carry the trains will take a long time in bad weather before they can be placed in position and the gates closed. Third, very few persons would remain in the carriages when being put on board, and, in the event of sea-sickness, they could not be allowed to remain, so that the passengers must have time to leave the carriages and walk on board. Lastly, the large outlay in forming the harbours, appliances for shipping the trains, and the extra cost of the ships, together with the heavy cost of working them.

#### BOUTET.

The great bridge scheme for connecting the two shores which is at the present time attracting a large amount of attention both in England and France—especially in the latter country—is the project of M. Charles Boutet. This gentleman, who is a French engineer, has been engaged during the past ten years in maturing his plans and constructing models in order to satisfy himself of the correctness of the principles he has enunciated. M. Boutet selects a point on the Dover Hills near the Shakspeare Cliff for the commencement of his International Bridge, which is to touch the coast of France at Blanc Nez, a short distance from Calais, at which place the cliffs are about the same height as those on the English coast. These cliffs, at either extremity rising nearly 400 ft. above the level of the sea, serve as abutments for the proposed viaduct. To protect them against the destructive action of rain, winds, and frost, they will be faced with a solid construction of dressed stone. The project depends in effect on two remarkable innovations in the construction and establishment of the piers—of which there will be twenty-nine—and girders. In addition to the considerable height to which the former rise above the water (120 yds.), the bases of the piers are sunk to the bottom at a depth varying from 28 yds. to 52 yds. The centre pier will be half as large again as the others. All the pieces composing the work are of cast iron.

As such ponderous piers could not be erected by the ordinary means, M. Boutet proposes to construct on the shore their lower parts or bases to a height sufficient to rise 10 yds. above high water, and as soon as the iron skeleton is put together and bolted, a number of large sheet-iron buoys are distributed about the surface of the base. At low water the metallic framework thus prepared is made to slide upon the shore to low water mark. The tide in rising raises this raft or base of iron lightened by the buoys, and floats it. A tug steamer then removes it to its place, previously indicated by one of a line of buoys attached to an iron cable stretched across the Straits at a depth of 18 yds. By

raising one of the buoys attached to the raft it is made to descend very slowly, the top being just above the level of the sea when the base touches the bottom. It is foreseen that it may become necessary to rectify its position, and a strong metal screw is therefore placed in the interior of each pier, extending from base to summit, to which is attached a large buoy which can thus be moved from the top to the bottom or *vice versa*. The buoy disturbing the equilibrium renders the specific weight of the pile heavier or lighter than the displaced water, and the whole structure when floated to its place can be sunk without the least shock. It is manœuvred like a ship, and its position is verified by a special glass, invented by M. Boutet, to be placed on the cliffs. The base of the pier is provided with large screws or spiral feet, which on being turned bind it firmly to the solid bed of the sea, and serve to establish the level if necessary. Such is the method of moving and fixing the enormous bases of the piers, the component parts of which it would otherwise be extremely difficult to unite under water. The construction of the upper portion of the pier above the sea is effected piece by piece. Thus are avoided all preliminary works under water, which constitute the greatest difficulty in the way of a bridge across the Channel.

Next with regard to the superstructure, M. Boutet has hit upon a plan whereby the difficulties of transport, etc., are overcome. He constructs rigid beams endowed with great powers of resistance of a weight relatively very small, and capable of being placed in position piece by piece, by the aid of a system of scaffolding constructed as follows:—Between the abutment on the shore and the first large pier, three temporary piers are placed at equal distances. This done, there are stretched in parallel lines a number of wire cables two meters (*i.e.*, 2 yds. 6 in.) apart. They are connected and bound together by ties made of smaller cables, which interlace the large ones and hold each in its place. The whole forms a truss of 63 yds. wide. The truss thus made is covered by a wooden flooring, a guard is fixed on each side, and there is at once obtained a service bridge upon which scaffolding is erected to support the roadway of the bridge during its construction, the scaffolding being always at a sufficient height above the sea to allow the largest vessels to pass under it. Upon such scaffolding are supported the wire cables forming the roadway of the bridge—each of which is strained as nearly to a right line as possible, after which smaller cables are interwoven, bracing together the main cables and holding them firmly in their places. Each cable is composed of eight iron wires parallel to each other and bound together at intervals with strong wire collars. The straining of the large cables is to be managed by means of weights, which are removed after the proper degree of tension has been attained and the cables fastened down to the tops of the piers. For example, we will assume the cable to be fixed at the abutment and laid loosely over the other piers, the weight would then be applied to the length of cable between the first and second piers. This would bring the length between the abutment and the first pier taut, and it would be made fast to the first pier. The

weight would then be removed to the cable between the second and third piers, and the process would be repeated until every span of cable was stretched to its proper limit. The cables are carried without a break over the tops of the piers; each cable, therefore, will be 21 miles long. Above and below these cables are fastened beams of timber, over which the permanent way will be fixed. The author is informed that Mr. Ordish has pronounced that portion of the scheme relating to the piers to be practicable, and the method of floating the bases exceedingly ingenious. Another eminent engineer, the chief of one of our leading railways, but whose name the author is not at liberty to mention, has examined M. Boutet's plans for the super-structure, and states that the scheme is perfectly feasible. He, however, sees a difficulty about the piers, but, as we have it on the authority of Mr. Ordish that the piers are practicable, we may conclude the whole structure is to be so. The bridge is estimated to cost £8,000,000, and to occupy three years in completing. It is stated that experiments in progress give reason to expect that this estimate will not be exceeded.

The carrying out of M. Boutet's principle by the construction of bridges generally on a smaller scale than would be required for the Channel appears to be now imminent. The author understands that two small bridges have already been constructed, one for the college at Verviers and one at Senlis. A company has been formed in Paris, and the Emperor has directed a bridge to be constructed across the Seine, the first cable for which is already made. A span of half a mile at St. Malo is to be bridged upon the same principle. It would be premature to discuss the scientific details of M. Boutet's project, as they are not yet made public, and, indeed, cannot be determined until the result of some experiments in Paris, and which are now pending, are made known. The arrangements for these experiments are now nearly completed, and it is proposed that they shall be attended by the principal engineers in France and England, to whom invitations are to be sent. We may, therefore, conclude that its merits and demerits will then be investigated, and the practicability of the scheme thoroughly ventilated.

A preliminary meeting of the Channel Bridge Company was recently held in Paris, when several models of bridges upon M. Boutet's system were exhibited. One model in particular illustrated the principle of the proposed Channel Bridge. It consists of one span, and is constructed upon a scale of 1-50th of the proposed international bridge, and is formed of 21 small cables, 13 millimetres in diameter, bound together at intervals by ties at right angles, which have the effect of keeping the larger cables separate, and at the same time preserving them in their relative position. The whole forms an open truss, which is bolted between planks of wood, thus securing perfect rigidity, which is further increased by the balustrades. It is reported that the weight of forty persons stamping together on this model failed to produce any sensible deflection. It is estimated that it would require a weight of over 50,000 kilogrammes to break it. This model rests on abutments which have been roughly hewn in logs of some-

what decayed timber; this is a convincing proof that the abutments are not subjected to any strain.

#### COLBURN.

Mr. Zerah Colburn has recently proposed a novel method of facilitating the laying of a tube across the bed of the Channel. He has worked out all the details, but inasmuch as the idea forms the subject of a pending patent, only a general outline of the proposition can be given. He proposes to construct a dry dock on the coast at the point where the tube is to be carried across. This dock is to be of any reasonable length, from a thousand feet to a mile, and only a few feet wider than the outer diameter of the tube. The sections of the tube are to be united together in this dock, the seaward end being fitted with a water-tight bulkhead and projecting through a water-tight opening in the dock gates. When a length of (say) a thousand feet of tubing was ready, the rear end would be fitted with a bulkhead, the water admitted into the dock, and the tube slowly towed or floated out until the last section reached the dock gates. The gates would then be closed, the water pumped out, and the work proceeded with as before. The specific gravity of the tube is to be such as that it shall just sink to the bottom, and each time it is drawn out it is to be slightly raised off the bottom by a system of buoyage, which is also to assist the flotation of the tube as it progresses in its gradual passage across the Channel. On reaching the opposite shore the tube, after being made secure, is to be lined with brick in cement, and rails laid, and in other respects the work is to be completed.

#### PARSONS.

A pontoon vessel, of shallow draft, for the Channel passage has recently been proposed by Mr. J. H. Parsons. He connects four pontoons together by cross girders, leaving a waterway between the pontoons for the paddles, of which there are to be six—three forward and three aft. The boilers, coal bunkers, etc., are to be placed in the centre of the vessel, and the engines at each end. In the deck arrangements, the idea is to have a sleeping and a general saloon, separate from each other. A clear passage is to be left from stem to stern for working the vessel and for a promenade for passengers. This vessel, it is contended, would be rendered independent of the tide in crossing the bar at Boulogne, and would make the service direct instead of tidal as at present. The author believes that Mr. W. Bridges Adams has also proposed a somewhat similar vessel to that of Mr. Parsons.

#### WARING.

The present paper would be incomplete—as far as the author's knowledge extends—were he to omit to mention a proposition by Messrs. Waring to effect the Channel passage. But what that proposition is the author cannot say, as, on inquiry at Messrs. Waring's office, the representative of that firm could only say that they "had a concession." What that concession was for, whether for a tunnel, a

tube, a ferry, an embankment, a bridge, or an overhead railway, the author cannot say, inasmuch as, to the author's inquiries on this point, the gentleman alluded to was specially reticent and painfully mysterious. The only subsequent light thrown upon the subject is a paragraph in a Dover paper to the following effect:—We hear from good authority that a "committee for the defence of the Channel ports" has been formed at Calais, Boulogne, and Havre, to oppose the project attributed to Messrs. Waring, the English contractors, of constructing a more convenient port near Cape Grisnez, which is certainly a very illiberal piece of obstructiveness. That the scheme is one of larger vessels and increased port accommodation appears from a statement of the Paris correspondent of the "Morning Post" of the 12th October, and who writes thus:—We are again talking about a bridge over the Channel; the subject is sure to crop up periodically. If it is not a bridge it is a tunnel, and whether one or the other, or the proposed comfortable large boats of the Messrs. Waring, every traveller, even the non-sea-sick, will wish the project success.

As an embankment has been proposed as a means of facilitating the means of communication between London and the continent, it may here be briefly referred to. An embankment, however, appears to be about the worst possible solution to the problem, firstly, because of the difficulty of carrying it out, and, secondly, because of the tremendous loss of property that it would cause. In other words, it would be very difficult to find the pecuniary means, and the project would encounter the most formidable opposition from the neighbouring populations of the French and English coasts. This would arise from the damage an embankment would cause to the fishing populations of Ramsgate, Deal, Dover, Calais, Boulogne, etc. Besides, the proposer of this scheme would be puzzled to find the necessary amount of soil, making a liberal allowance for the slopes, which might be washed away a dozen times before they could settle down and acquire cohesion and stability.

Mr. W. H. Barlow has proposed a submerged bridge, but the particulars of this scheme have not come under the author's notice.

Mr. Charles Boyd proposes a marine viaduct from Dover to Cape Grisnez, constructed with iron girders on 190 towers, 500 ft. apart, and 500 ft. above the sea, and he estimates the cost of such a bridge at £30,000,000.

Mr. Hawkins Simpson has addressed the Board of Trade on the subject of working a submarine tunnel on a pneumatic system, which he has termed his "Eolian system," for which he claims cheapness, expedition, superior ventilation, and greater utility.

Mr. Alexander Vacherot has a scheme, on which he has been engaged several years, and which he laid before the Emperor of the French in 1856, for laying on the bed of the sea a tunnel made or formed of concrete, so as to form, when completed, a monolith. He would construct it on the shore, and draw it down to its place in sections. And he considers that greater economy and security might thus be obtained than by the other methods that have been proposed.

## ESTIMATES.

It is of course taken for granted that the adoption of either tunnel, tube, or bridge, would prove a success commercially. But as this is an important point, and one upon the proof of which any project must be dependent, it may be as well to state a few facts in support of the argument that such an undertaking will pay. It, however, needs not that very much be said upon this point, for as soon as England is directly united with the European continent, practical advantages of incalculable value will result. The resources of each country, and mutual exchange of produce, will be developed to a degree of which it is impossible to form anything like a correct idea. Mr. Chalmers went very carefully into the subject of the probable revenue to be derived from the establishment of a Channel railway. Writing in 1867, and referring to his estimate he says:—"I published these figures in a brief prospectus of this project five years ago; and I see no reason to alter them now, unless to increase them. After I adopted them I became acquainted with the work of M. de Gamond, and on comparing figures, found a wonderful coincidence in the items of freight and passengers,

his being .. .. .	£1,041,666	13	4
and mine .. .. .	£1,049,375	0	0

He seems to have overlooked the mails\* as a source of revenue, his figures were compiled in 1856, and based on the actual business then done between England and the Continent; and as he could not have foreseen the impetus that has since been given to traffic between England and France by the recent Treaty of Commerce, and by the change in the passport system, his figures are more sanguine than mine, compiled in 1861, after these important changes had actually taken place."

Mr. Chalmers estimates the probable revenue as follows:—

2,500 tons freight daily or 912,500 per annum at 12s. 6d. .. .. .	£570,312	10	0
1,500 passengers daily each way, or 1,095,000 per annum at 8s. 9d. ..	£479,062	10	0
Mails, express freight, coin and bullion, extra baggage, etc., (say) .. .. .	£250,625	0	0

Total annual revenue.. .. . £1,300,000 0 0

These figures, he observes, may appear too high to those who have overlooked the affinity between improved means of transit and the increase of traffic resulting therefrom. In the infancy of railway enterprise, the anticipated traffic on a given line was based upon the business done by the stage-coaches and waggons of the day. It needs not that we compare the anticipated with the actual railway traffic, but we should bear in mind that our experience in that case did not

\* Mr. Chalmers and M. de Gamond have both omitted the revenue which would now be derivable from the electric telegraph companies.

prevent our falling into a similar error in the case of ocean steamers, though fleet after fleet of these vessels have taken their places on the ocean, each creating for itself a trade where none existed before. Between 1820 and 1830, in the good old times of sailing packets, the number of travellers between England and the continent did not exceed 80,000 per annum. The establishing of a regular steamboat service raised the number in 12 years to 350,000; and since the introduction of railways, it has risen to upwards of a million. This great increase is not to be attributed to the increase of the populations, but mainly to these improvements; and the effects that would result from the completion of any work connecting England with the continent would be even greater than were produced by those two important revolutions in locomotion, which respectively raised the figures from 80,000 to 350,000, and from the latter to upwards of a million.

In confirmation of these views we find Captain Tyler stating, in a recent report upon the improvement of the means of communication between England and France, that, omitting from consideration the ports of Hamburg, Rotterdam, Antwerp, and Ostend, the passenger traffic between England and France for the year 1868 amounted to 309,479 altogether; 141,633 passengers having travelled by Calais, 109,006 by Boulogne, 41,371 by Dieppe, and 17,469 by Havre. A large proportion of these, namely, 46,411, crossed the Channel in the month of August, as against 12,946 in January, and 13,514 in February. In the year 1867, of the Paris Exhibition, the numbers were 454,350 altogether; 199,837 having travelled by Calais, 146,226 by Boulogne, 86,914 by Dieppe, and 21,373 by Harve. Of these, 84,634 crossed in August, against 13,163 in January, and 13,721 in February. Captain Tyler observes that in addition to the ordinary annual increase, which is considerable, there would naturally be a very large augmentation in these numbers if better arrangement were made for crossing the Channel.

#### CONCLUSION.

We have now definitely before us three propositions for effecting the desired communication by means of an excavated tunnel, three for laying a tube on the bed of the channel, three for improved steam vessels, and one for a bridge, besides several other propositions of minor importance and questionable practicability. Of all these projects undoubtedly those which have of late made the greatest progress are the bridge scheme of M. Boutet and the tunnel scheme of Messrs. Hawkshaw, Brumlees, and Low. The documents relating to this latter scheme are now before the Board of Trade. The results of the deliberations of a French Commission appointed by the Emperor to inquire into the scheme are, on the whole, favourable as regards the geological and engineering features of the project. In this scheme it is proposed to commence by driving preliminary driftways through the grey chalk, at a great depth below the bed of the Channel, between

a point near Dover and another point near Calais. It is conceived that this material would be easily cut through, and would not be likely to present insuperable difficulties from the influx of water. Mr. Remington, as we have already seen, selects the line from Dungeness to Cape Grisnez, in order to avoid the chalk and the fissures which he fears to encounter in it, and to work in the Wealden formation, which would, he believes, afford a greater chance of success.

Turning to M. Boutet's bridge scheme we find that an association has been formed for making experiments, two small bridges have been built in France, and arrangements are made, near St. Malo, for a third, whilst a fourth is to be constructed over the Seine. The great features of the bridge are that it will be less costly than a tunnel; will occupy less time in construction; will give no trouble in ventilation; and will avoid the danger of sudden inundations. As to its merits in an engineering point of view, we may hope shortly to be satisfied by practical demonstration.

Looking broadly at the schemes which present the most reasonable features, and irrespective of their engineering merits in detail, it appears to the author that, of the tunnel schemes, that of Mr. Remington for driving through the Wealden formation would be attended with less danger than that of Mr. Hawkshaw, which it is proposed to carry through the chalk. Of the methods of connecting the two shores by tubes along the bed of the Channel, that of Mr. Bateman certainly appears the most practicable. If these tubes could be constructed in a dry dock and drawn gradually over upon Mr. Colburn's method, it would be a very summary method of settling the question, as Mr. Colburn assures the author he could effect the connection in three months, although, he admits, at a great cost. But, both in subterraneous and subaqueous works, there is an admitted possible risk. In the former, there is the contingency of flooding from the nature of the soil, whilst, in the latter, some of the operations would be dependent on comparatively delicate arrangements. The bridge scheme has also its perils of storms and tempests, but there appears to be a possibility of guarding against the consequences of these more readily than against the insidious advances of a great head of water. The bridge scheme, too, as has already been observed, has had its substructure approved by one independent engineer, and its superstructure by another. As far, then, as we have at present advanced, the bridge scheme appears to present the most reasonable chance of success. But either a tunnel, a tube, or a bridge would be the work of perhaps eight or ten years, for the author does not think the various projectors have allowed sufficient time for the contingencies that would arise in the course of carrying out works of such unparalleled magnitude. We must, therefore, turn to some plan by which the existing requirements of the travelling public can be promptly and inexpensively met.

Captain Tyler, R.E., has examined the English and French coasts and investigated the various projects, and has reported to the Board of Trade thereon. Referring to Mr. Fowler's plan for improved steam



vessels and harbour accommodation, Captain Tyler observes, that the project would require some modifications in detail, and that it is a question whether it would be worth while to ferry the railway carriages as well as the passengers across the Channel. But the main features, of an improved harbour at Dover and a new harbour south of Cape Grisnez, are sound, if means can be found for meeting so great an expense.

With regard to Mr. Grantham's proposition to utilize the existing harbours by vessels of light draft, Captain Tyler states that it is asserted by some of the officers engaged in the performance of these services that vessels of the class now employed are, upon the whole, the safest that could be devised for the particular duties required of them. It is argued that the sea passage, in which greater length and size might lead to increased comfort, is comparatively short, while the entrance of the French harbours, by day and night, in certain states of the weather, which is already the more difficult and dangerous part of the service, would be attended with still greater disadvantages. The existing vessels are fitted to encounter any weather with which they can meet in the Channel, and are handy for entering the harbours, while longer vessels would be exposed to increased risk at the moment of entering the harbours. The bow of a long vessel getting under the shelter of one pier, and a heavy sea striking her on the quarter, she might be driven against the other pier. There is, no doubt, much truth in this argument. Such a risk must increase in proportion to the length of a vessel, to the narrowness of the entrance to a harbour, to the exposed position of its entrance as regards winds and currents, and to any necessity which may exist for reducing the speed before entering it. Having regard to the existing state of the French harbours, the employment of longer vessels would, for this reason, be attended in bad weather with greater danger. But the argument would no longer apply if the service were performed from a convenient and well constructed pier on the one to a similar pier on the other side of the Channel. The longer and larger vessels having increased proportional power, with disconnected engines, so as to be able to use either paddle at pleasure, could be under no disadvantage in approaching the lee side of a pier. The above argument, therefore, tells in favour of the construction of an extended pier at Boulogne, as proposed some time since by Mr. Brunless, to be used on the French, in combination with the pier at Dover on the English coast, for an improved Channel service.

The matter, then, in general terms stands thus:—The steam packet service between England and France is greatly in need of improvement. This service is important in its character, and the existing steamers, restricted as to their dimensions for want of better pier and harbour accommodation, are not proportionate to the importance of the service. Larger vessels, with less movement in rough weather, more shelter, and better accommodation generally, would do much to mitigate the discomforts of the sea passage; and even contemplating the successful issue of a tunnel or bridge project, these improvements are much re-

quired, and should be effected in the meantime. But larger vessels cannot be employed for a fixed service until better provision is made for embarking and disembarking passengers, especially on the French coast. The pier at Dover is not only ready, but has frequently been used for military transport-vessels of the largest size, though certain improvements are required in the jetties for greater convenience in embarkation and disembarkation. The difficulties in the way of fitting the harbour of Calais for the reception at all times of larger vessels are great, but by a judicious extension of the west pier at Boulogne, similar accommodation might be provided on the French side. Captain Tyler estimates that at a cost of about £100,000 at Dover, and £500,000 at Boulogne, the desired object might, apparently, be attained in the most economical and most expeditious manner. By the adoption of steamers capable of moving with equal facility in either direction, the difficulties incidental to turning round in small harbours may be avoided; and the existing harbours at Dover and Boulogne might, with certain modifications, be made available, to some extent, for improved vessels.

Captain Tyler suggests that the question might thus be temporarily solved if the two governments were not prepared to carry out a larger scheme. If they are prepared to face a greater expense, there is the more extensive project of Mr. Fowler, for constructing, at a cost of two millions of money, special harbours for special steamers. There can be no doubt that this project presents, whether railway carriages be ferried over or not, a more comprehensive mode of dealing with the subject. The relative distances may be stated to be:—Between Dover and Audresselles, 24; Dover and Calais, 26; and Dover and Boulogne, 30 English miles; while the passage to Boulogne, though longer, is admitted to be better than that to Calais. Either by the construction of new harbours at Dover and Audresselles at a cost (as estimated by Mr. Fowler) of £2,000,000, inclusive of steamers, or by the improvements above suggested at Dover and Boulogne, at a cost of £600,000, exclusive of new and improved steamers, the immediate object should be to provide an improved fixed service, irrespective of wind and tide, between London and Paris in eight hours. It would appear to be desirable now to refer the whole matter, through the Foreign Office, for the consideration of the French government, with a view, perhaps, to the appointment of an international commission, in which that government would, no doubt, readily acquiesce, and without which the important interests involved could not be authoritatively dealt with, nor the general question satisfactorily decided.

Whatever be the plan ultimately decided upon for connecting England and France in a direct manner, such a plan must have the best wishes of those here present this evening as well as those of the whole civilised world. It should not be so much the honour of adopting this, that, or the other scheme that should influence us as the reflection that the accomplishment of the object will be attended by advantages to the nations of the earth. In former times, when Europe was regarded mainly as a theatre of war, it was perhaps, no disad-

vantage for this country to be separated from it. But since the introduction of steam has so completely changed the character of marine locomotion, any advantage formerly arising in this respect from our insular position has been materially diminished, and, in the present day, it is continental commerce from which we are separated and not continental wars. Such a direct bond of union, then, as is proposed would establish on the firmest basis the spirit of amity now subsisting between England and France.



### THE SUEZ CANAL.

WHATEVER may be the result of the promised proceedings of the 17th of November, at the Suez Canal, the magnitude of the undertaking must command attention. Successful or not the Suez Canal is (as our friends across the Atlantic would say) a great fact. Its ill success has been unhesitatingly pronounced in these pages, and the opinion of an experienced English engineer, one so experienced in hydraulic operations as Mr. Brooks, is a very formidable not to say disheartening feature. However there is ample confidence in opposition to this gentleman and moreover experienced views from the Isthmus itself. But the test is at hand. The *experimentum crucis* will very shortly come off. The opening may have been premature; hurried for a good reason no doubt. Still the immediate opening cannot be taken as either a crowning success or as an immediate failure. There is much to be taken into the account either way. The measure if successful now must continue to be so, and this implies the necessary works for keeping the canal open, and we all know that such works mean money. Then will follow the real test, will the whole scheme pay, the expense of the transit through the canal,—will this tax, for tax it must be looked on, enable merchants to freight their vessels with profit? As we said the opening will not decide this question. Time only can do it, and for that we must patiently wait.

However, we have already taken much interest in the work, and we now repeat the little plan which appeared in our last year's volume, as an accompaniment to the very interesting letter which follows from the correspondent of the *Daily News*. We now give this gentleman's voyage on the Suez Canal, dated Port Said, October 27th.

"I have been ever since the date of my last letter on the Suez Canal, have given twenty-four hours to Ismailia and Lake Timsah, and a couple of days to the harbour and breakwaters, of what will be, if all goes well in the future, the most important place in Egypt to European commerce. A hot and dusty railway ride of five hours takes the traveller from Cairo to Ismailia, the droughty and barren desert his only view for miles. When the brilliant blue of the waters of Lake Timsah at length greet him, he knows that the end of his weary journey is nigh, and welcomes even the shrieking crowd of Arabs who

fasten on the train the instant it stops, and who seize upon and fight over his baggage, quite as if they thought it had been brought down to give them a merry but pugnacious scramble. The backsheesh-hunters of Cairo and Alexandria seem mere slaves to conventionality compared to the veritable children of the desert whose acquaintance you begin to make now, and whom you never lose sight of for long during your inspection of the canal and the lands it runs through. Yet you have scarcely recovered from your angry struggles with the marauders, scarcely regained the breath you have expended in protest and expostulation, scarcely done wondering at the ease with which they are beaten back and the timid patience with which they submit to the blows freely distributed by a swarthy official armed with a long stick—when you see other figures attired in complete European costumes, and who might be transferred as they stand to the Boulevards of Paris, or the Steyne at Brighton, without sense of incongruity. The tattered robes, the bare brown legs and arms, the naked chests, the coarse and ragged turbans, the black and bronze faces, the long dark veils with garish brass fastenings of the women, which look like so many ornamental nose-bags, the strange yells and shrieks, belong to the dwellers in yonder Arab village; the European dresses, the well-appointed carriages, the handsome villas, the luxuriant gardens are those of the French colony of which M. de Lesseps is the courteous king. The contrast between civilised and savage life which is for ever forced upon you here is at its strongest now; and if you are fortunate enough to be included in the list of M. de Lesseps' guests this evening you assist at a private dinner and soirée at which you meet royal visitors, as well as a crowd of ladies and gentlemen whose evening dress is so faultless as to make your own travelling attire seem sadly out of place. Still the same contrast though. The dinner à la Russe is brought from the spacious offices and handed to the Frenchmen in faultless black who wait by bare-footed Nubians, whose jetty handsome features are set off by their white robes and crimson fezzes. The pathway by the garden gate, where the Chinese lanterns glimmer gaily through the rich creepers, is strewn with Orientals, who squat and smoke and sleep; and when you leave, to grope your way through the sand to your hotel, the strains of the piano mingle with the howlings of wild dogs and the harsh cries of men who are still wilder.

Seven years ago there was nothing to distinguish Ismailia or the smiling lake before you from the rest of the desert, and all was sand. It is the Canal which has raised up the numerous handsome villas and fine gardens. Fresh water is all that is needed to turn the arid desert into a fruitful soil; and the supply of this is provided by the subsidiary canal which the company has formed side by side with that broad salt one which now unites two worlds. Wonderful stories are told of the productiveness of the gardens, and a walk through any of those belonging to the leading officials stationed at Ismailia is to verify them all. Vines with large bunches of grapes pendant from their branches; orange trees with the green fruit just showing a golden tint; ivy, roses, geraniums from England; and an endless variety of

rich tropical plants are all flourishing. In the centre of the town is a square with trees, and a building clothed with rich creepers in its midst. Everything here looks French. A handsome boulevard runs down to the point of embarkation, the streets and squares are on the true Parisian model, and there are cafés, billiard-rooms, and café chantants, which might easily belong to Nantes or Lyons. There are of course huge gaps where the houses and shops will be, the roads are many of them still of sand, camels draw carts and generally pervade the place in long strings, but with all this you are kept in a state of wonder during your stay at Ismailia; first, at the marvellous conversion which has taken place and is taking place under your eyes, and secondly, at the supreme confidence which looks forward to entertaining five hundred guests in three weeks' time in a place where every house—I had almost written every bed—seems occupied, and at a palace which has yet to be built. The stately building being erected on the banks of Lake Timsah by the Viceroy will be of stone, but it is little more than a carcase now, while the grounds in which fetes are to be held is simply a huge stonemason's yard. If it is sufficiently finished for its purpose by the 17th of November, the marvel will be as great as any worked by Aladdin's lamp.

Tickets for the daily steamer at Port Said are issued to all travellers wishing to avail themselves of the Suez Canal, and I embark on the day after my arrival at Ismailia; not a little curious as to the character of my voyage. Lake Timsah is, as every one knows, about mid-way between the Red Sea and the Mediterranean, so that the inspection about to be described embraced in round numbers fifty miles of the Canal, or half its entire length. The experience was so utterly unlike what had been expected beforehand, that it partook of the nature of a surprise. The very word canal seems misapplied to a continuous sheet of water, the surface of which is wider than the Thames at Richmond, where flying fish skim before you, and which is literally crammed with sea-fish, as the constant jumps and eddying circles prove. A canal again, in spite of all one has read of this particular one, does vaguely suggest locks and tow ropes, and barges dragged by horses. Here sailing vessels, with the curious sails and lofty tapering masts of the Nile boats, are almost always in sight; some bearing stores to the various stations, others carrying a motley load of Mussulmen, Egyptians, and grimy mechanics to and from their work. A broad and handsome river, which runs straight to its destination, instead of indulging in devious windings, is what the Suez Canal resembles most at a first glance. You embark at Ismailia, at a regular steam-boat wharf, and after three soundings of a shrill whistle, pursue your way into the centre of a lake which is so extensive that you cannot trace the course of the canal on the other side of it. Your steamer is licensed to carry forty first and thirty second class passengers, and has saloons and a deck over them like some of the boats running between London and Gravesend. For the first quarter of an hour or so you might be going out to sea, so rapidly do the waters expand to right and left. Then a corner to the left is reached, and the word is given

to go slowly, and in a few minutes more you are on the Canal, and having the point at which it joins Lake Timsah on its other or Suez side shown you in the distance.

Before recording what turned out to be an exceedingly uneventful voyage, it may be well to remind my readers that Ismailia is so called after the present Viceroy, just as Port Said is named after his predecessor, and that the former is designed to be the great commercial centre on the Canal. It is to this end that the wharves, the spacious streets and market-places, the palace of the Viceroy, and the enormous deep-water harbour, have been designed. When the Suez Canal is the highway of the world, Ismailia will be the most convenient landing-place for Egypt, and hence, it is said, the efforts being made to fit it for being the business capital of the country. We pass through a narrower part of the Canal on leaving Lake Timsah than we meet with again. Even here, however, the waters are of considerable width, and for the first hour we see camels, donkeys, and labourers, literally by the thousand, at work upon the banks. Past groups which look strange to our unaccustomed eyes; naked Nubians swimming out to meet us, their white teeth gleaming in the sun as they give us a welcome, other Nubians taking their rest in holes in the soft sand, their heads alone being visible above it; little groups of devout Mussulmen workmen, who, while the string of camels at their side are being laden with sand, employ their time in prayer, and stand up and prostrate themselves, and touch the ground with their foreheads with profound indifference to all around; children, naked as they were born, helping to fill the panniers; men in blue robes and red caps digging away at the Canal sides with some of the energy of English navvies; a flock of vultures, at least a hundred strong, feeding on a dead camel, and here and there a wild dog, who comes to the top of the embankment, or is roused from his sandy lair to bark—past all these goes the traveller down the Canal. No view of the country is to be had. A magnified railway cutting, the sloping banks of which are of sand, and the space between each side of which is the width of many railway lines, is what the Canal resembles most. The breadth from point to point from each embankment-top is enormous, and when it is remembered that this represents the degree of excavation which has taken place, the wonders of the Suez Canal far transcend all your previous estimates concerning it. It will be understood that the width of surface-water does not affect its practicability for the transit of great ships. These must keep in a prescribed channel in the centre, and it is agreed on all hands that as two cannot pass each other in this at the same time, the same precautions will have to be taken as on a single line of railway. Accordingly, sidings will be constructed every six or eight miles, into which the ship going one way will be shunted, while those on the opposite course proceed on. At present, however, the chief point of interest is the effect of the opening on the 17th; and yesterday some of the Peninsular and Oriental Company's officers arrived here from Suez, taking careful soundings all the way, with the view of ascertaining how far the Canal is already practicable for large

vessels. Their report is that much has yet to be done, but that the engineers admit this, while insisting that all will be ready before the opening day. As the soundings taken yesterday gave five feet and a half in certain places, it is to be hoped the engineers are right. On the 11th, however, the Viceroy's yacht, which draws from seventeen to twenty-two feet of water, will leave Port Said for Suez, making an experimental trip, and if all goes well, the Viceroy himself will go over the same ground (or water) in her the next day. The programme for the 17th is, of course, liable to alteration, but that men-of-war of several nations will take part in it, that the Emperor of Austria and the Crown Prince of Prussia will be here, and that 100,000 of the Viceroy's subjects will be encamped at Ismailia, to represent the various colours and customs of the tribes over which his Highness has sway, is the present belief.

"The passenger by steamer finds it difficult to realise that there is anything in the way of the inauguration being a success, for his craft draws but little water, and though he feels it grating against the bottom once for a moment, it is explained that this is before he is out of the shallows of one portion of Lake Timsah, and does not bear upon the Canal. The astonishing thing is the extent of the traffic already going on. One does not consider at first that these large-sailed barges are all of light draft; and as Port Said and its breakwaters are reached at night, the sight of large steamers and enormous harbours strengthens the illusion that the Canal is virtually open, and that the inauguration is a formality. It is right to add that this assumption is utterly erroneous, and that while those best qualified to form an opinion are confident of its ultimate and speedy success, they are equally certain that it is being opened too soon, and that the regular traffic of large ships will have to be postponed."

"Ismailia, October 29th.

"Since posting my letter I have steamed along the Canal again at a steady rate of nine knots an hour, and have spent another day in sounding its depths at parts said to be critical. The circumstances under which I was enabled to do this were peculiarly favourable to independent observation. No Frenchman and no official connected with either the Egyptian Government or the Suez Canal Company were of the party; and the lead was heaved and measurements were taken and recorded until the precise state of the Canal and the extent of its fitness for great ships are as well known to us as they can possibly be to any one. Whenever there was a doubtful return from the man with the lead our little steamer was stopped and its boat put out. One of our party was then pulled slowly across the Canal, with a lead-line in one hand and a measuring rope in the other. The end of the latter was held by one of us on the steamer, and as each yard was paid out the depth shown by the lead-line was called from the boat and entered in a book. Every precaution was taken against the possibility of error, and whenever the return of the number of feet of depth differed from what we expected the waters were gauged again, and by another hand. Careful notes were taken throughout,

and compared and verified while we were on the spot, so that what I have to record may be accepted as being as authentic and accurate an account of the present state of the Suez Canal as can be possibly arrived at under any conceivable conditions.

“It is highly satisfactory to be able to confirm generally the statements of the French engineers. There can be no sort of doubt that a deep passage exists all the way between the Red Sea and the Mediterranean, that there is an abundant supply of water, and that vessels can and do pass along the entire Canal. The width of this passage on the 17th of November, and whether all its remaining shoals will have been removed by that date, are the only points upon which difference of opinion can arise. The great surface breadth of the Canal, to which I have already alluded as most impressive to a stranger, has, of course, nothing to do with its capacity for bearing large ships. It is the freedom from obstruction of the central channel upon which their safety must depend; and upon which English owners must be satisfied before availing themselves of the route. This can be only tested by such a course as I have taken part in, or by a ship of a certain draught passing through or sticking fast. Taking the posts or buoys which mark out one side of this channel as our standing-point, we measured and gauged as I have said, and arrived at the unanimous conclusion that while it would be impossible for the Viceroy's yacht, the *Mahroussa*, which draws eighteen feet of water, to pass from sea to sea now, it is quite probable that matters will have been so far advanced by the 12th, the day fixed for the experiment to be tried privately, that she will do so without material hitch. We found several places in which the dredging machines—which are on the same principle as those working on the Thames, bringing up a succession of bucketsful of earth and sand from the bottom, depositing the mass into a long trough, which tilts its contents on to the land—had portions of their work still to do. The lead not unfrequently gave depths considerably under that which is to be guaranteed, though the rapidity with which the statistics recovered themselves, and the suddenness with which the return jumped from a low to a sufficiently high figure, proved the obstacles still existing to be of inconsiderable size. Their existence is not denied by the authorities, who insist, however, that they will be removed by the day of the inauguration.

“Of the sidings, or stations as they are marked in the last map of the Canal published by authority, only one exists. This is at Kantara, between Lake Ballah and El Ferdane, and is of sufficient size for its purpose—*i.e.*, for admitting ships to temporary anchorage, while other ships pass in an opposite direction. There is no lock, and none of the inconveniences which the word “station,” used in connection with a stoppage in mid-transit, might suggest, being simply a bay scooped out of the Canal's sides and deepened until it affords an ample anchorage ground. There will be ten of these bays hereafter, so that there will be opportunities of stopping or of turning at every ten miles. The parts of the Canal known as the Sucz and Serapeum Cuttings show the



narrowest surface of water, and, the stiff ground by the corner of Lake Timsah has the greatest number of men, camels, and asses busy on its banks. The scene here recalls Mr. Poynter's picture of Israel in Egypt forcibly—save that the stick is being applied, not to men, but to the over-worked, over-laden camels and donkeys, whose moans, and occasional stubborn upsets of, and refusal to carry, their burdens of sand and stone, can be heard and seen from the steamer.

“That there is some tide in the Canal was insisted on yesterday by more than one dweller on its banks. We were at some pains to collect and compare the local evidence on this disputed point; and while all we spoke to declared there was a rise and fall, varying in their statement from two inches to six, none would agree to this being due to wind, but pointed to a regular water-line which they averred to be high-water mark. Another point to which we gave more attention than I was able to bestow upon it during previous visits, was the action of the water upon the Canal's sides. These sides or banks vary considerably in character. Now stretching to a great height, now low-lying; now composed of fine dry sand, now of sand which is intermingled with mud, and comparatively hard. Throughout you feel yourself on a mighty river, rather than on an artificial channel. Where the sides look softest, and where the marks of camels' hoofs sink deepest and clumsiest into the soil, the ripples from two steamers meeting certainly bring down lumps of sand, and countless small holes, as if burrowed by minute animals, show that these portions are undermined by the action of the water. In many parts, however, the stunted shrubs of the desert have been planted; and in others a small barricade of loose rock has been placed at the water's edge, and both these preservatives appear effectual where tried. The condition of some of the banks, particularly a road near the Viceroy's chalet—an edifice near Ismailia not to be confounded with the palace previously alluded to as in course of erection—shows, however, how the fine dry sand drifts, it being three feet deep yesterday in sand, which had evidently not laid on it long.

“To sum up conclusions, I, in common with other observers, regard it as unfortunate that the formal inauguration of this great enterprise should not have been delayed at least a few months longer; and while of opinion that large ships may be piloted through from the Mediterranean to the Red Sea on the 17th of November, consider that the proceeding will not be free from risk, and will need the nicest pilotage. But that the unbroken communication between sea and sea is no myth, and that a farther and perhaps continuous expenditure of capital, labour, and skill in the direction which has already accomplished so much, are alone needed to make the Suez Canal a practicable highway for the nations of the earth, must be obvious to all who have eyes to see.

“Independent investigation has proved that a canal of the proportions stated by the engineers, namely, sixty or sixty-five feet wide, and twenty-four or twenty-six deep, is formed, always excepting certain obstructions not cleared away, and which would produce

disaster at present, but the whereabouts of which are known, and upon which the machinery is, and will be during the next three weeks, at work. What this will imply when all is clear—which I cannot help doubting will be by the day fixed for the opening—will be understood from the fact that the average draft of the largest steamers running to the East is some twenty feet, and from the circumstance that the Great Eastern, on leaving the Nore with the whole of the Atlantic cable on board, drew but twenty-seven forward, and thirty-two or thirty-three aft.

“Into the commercial aspect of this great Suez Canal question I do not care to enter. The reader can work that branch of the subject out for himself, and as well in England as here. It has been to test personally what has been done and what remains to be done that I have given up the last few days, and circumstances have enabled me to do so very fully, and with a minute completeness for which I scarcely hoped.”

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THE following telegrams, arrived since the foregoing was drawn up, report the successful opening of the Canal, and a large collection of vessels at Ismailia.

“Port Said, November 16th Evening.

“The *fêtes* in inauguration of the Suez Canal have commenced by religious ceremonies in the open air, which were performed both by the Ulemas and the Catholic priests. The latter was concluded by a speech and a benediction from Monsignore Bauer, the almoner of the Empress Eugenie. Monsignore Bauer applauded the consummation of the work, and thanked the Khedive, who had immortalised his reign by co-operation in one of the greatest undertakings that any century had produced. The speaker then dwelt upon the complete liberty which the Khedive had granted to Christianity, and thanked the Empress Eugenie for the deep sympathy she had displayed with the work, and he also thanked M. de Lesseps for the great exertions he had made to effect its completion, and the Princes and the representatives of Foreign Powers for their presence.

“Great enthusiasm prevailed. The Viceroy and his Ministers, the Empress Eugenie, the Austrian Emperor, the Princes of Prussia, Holland, and Hesse, the diplomatic representatives of all nations, as well as an immense concourse of distinguished visitors, were present.”

“Ismailia, November 17th.

“The Suez Canal has been successfully opened to-day, and the Empress Eugenie has arrived from Port Said. Two French steamers have arrived from Suez. The Canal is consequently open from the Red Sea to the Mediterranean.

“The Emperor of Austria and the Prince of Prussia are here.”

“Ismailia, November 17th Evening.

“The Imperial yacht *Aigle*, with the Empress Eugenie on board ;

the Austrian, Prussian, and Dutch Royal yachts and their respective Princes; the *Psyche*, with the English Ambassadors and Admiral on board, followed by the *Newport* and *Rapid*—in all a fleet of forty vessels—arrived here this afternoon from Port Said, and are now at their moorings. The journey through this half of the canal has been performed in eight hours.

“Four good-sized steamers have likewise arrived here from Suez to-day. The maritime canal has thus been traversed by seagoing vessels throughout. Great rejoicings and festivities are taking place. Ismailia is splendidly illuminated. The Khedive and his royal guests are expected to land here to-night.

“Ismailia, November 18th.

“Forty-four large steamers from Port Said, together with other vessels, will leave for Suez to-morrow. The soundings of the Canal, as given in my telegram, have been confirmed by the *Hawk*.

“There is to be a grand ball to-night at the palace of the Khedive.”

“Ismailia, November 18th.

“A banquet was given here yesterday by M. de Lesseps to the members of the Commercial Congress, the Chambers of Commerce, and the directors of the Suez Canal Company.

“M. de Lesseps delivered a speech, in which he said—‘The work of the canal is completed, but it is now necessary that the present administration of justice in Egypt, which paralyses the resources of the company, and obstructs commerce, should be reformed. The Egyptian Government is willing to effect the necessary reforms in unison with the Great Powers; but I regret to state that the French Government is the one which opposes the greatest resistance to the projects put forward for that purpose, and which are so indispensable to the company, to the foreign residents, and to the natives.’ M. de Lesseps concluded by stating that the Board of Directors of the Suez Canal Company have drawn up a petition to the French Government demanding the reforms referred to, and he expressed hopes that all interested would give their support to this petition. M. de Lesseps’ speech was well received, and the President of the Lloyd’s Company promised to support the petition.

“The entry of the flotilla of vessels into the Lake of Ismailia has been achieved most successfully—there being everywhere a good depth of water.

“Upwards of forty sea-going ships are now in the harbour, the largest being a Russian frigate drawing seventeen feet two inches of water.

“The festivities continued to-day.

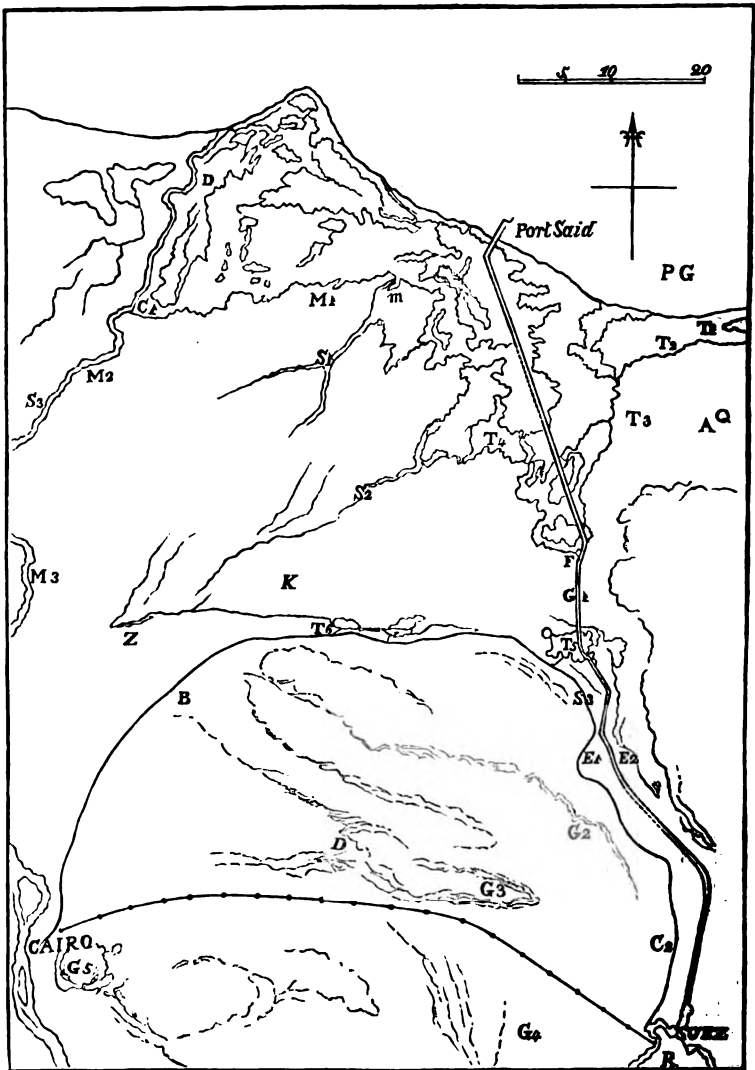
“The Empress Eugenie rode out on a dromedary, and afterwards drove out in a carriage with the Emperor of Austria.

“The Royal yacht *Deerhound*, with Sir Stafford Northcote and Sir George Starkey on board, has arrived here.

*The following are references, with a few additions to our plan annexed.*

- A.—Aclameh, among sandy downs.  
 B.—Bulbeis, on the right bank of the old canal of Trajan.  
 C. 1.—Chirbine, on the Damietta branch.  
 C. 2.—Great Shaloof.  
 D.—Damietta, on the Damietta branch of the Nile.  
 D. 1.—Dar el Beda. Palace of the Pacha.  
 E. 1.—El mel Alli.  
 E. 2.—El Ambak, called by Lesseps the basin of the Isthmus.  
 F.—El Ferdane.  
     Between this and Lake Ballah north of it is Kantara, at which  
     is a cutting or enlargement for ships to lie in while others  
     are passing.  
 G. 1.—El Guisr village.  
 G. 2.—Heights of Gebel Genof.  
 G. 3.—Heights of Gebel Awabel.  
 G. 4.—Heights of Gebel Attika.  
 G. 5.—Heights of Gebel Diouchi, next east of Old Cairo, south of  
     the present city of Cairo. A petrified forest is found on  
     the eastern slopes of these heights.  
 K.—Korein.  
 M. 1.—Menzaleh, to the east of which is, m—Matarich, both on  
     the southern borders of Lake Menzaleh, through which  
     the Canal passes from Port Said to the southward. This  
     lake is full of sandy isles, the forms of which are constantly  
     changing with the heights of the water and the wash of  
     the sea from storms, etc.  
 M. 2.—Mansourah, on the right bank of the Damietta branch.  
 M. 3.—Mitcanar, on the right bank of the Damietta branch.  
 P. G.—Pelagian Gulf in the Mediterranean.  
 Q.—Qutich.  
 R.—Roadstead of Suez.  
 S. 1.—Sane, the ancient Tunis.  
 S. 2.—Salbick, close to which is Cassassine, the ancient Tacasarta.  
 S. 3.—Samanoud, on the left branch of the Damietta branch.  
 S. 3.—Serapeum, south of Lake Timsah.  
 T. 1.—Tel Gerah.  
 T. 2.—Tel el Amarchina, Faramah, Ancient Pelusium. These have  
     isolated heights on the border of the dryer part.  
 T. 3.—Tel el herr.  
 T. 4.—Tel Defenneh, on the southern shore of Menzaleh Lake, at  
     the mouth of the ancient Pelusium branch as well as at  
     Salbich.  
 T. 5.—Lake Timsah, containing also Ismailia, the capital of the  
     Company.  
 T. 6.—Tel el Onadie, the ancient town between the Canal of the  
     Ptolemeys and the Fresh Water Canal.  
 Z.—Zagazin, at the entrance of the old Canal of the Ptolemeys.

## PLAN OF THE ISTHMUS OF SUEZ.



*Note.*—Between Cairo and Suez the line marked by dotted stations denotes the direction of the railway between those places. And the continuous curved line from the river at Cairo, passing by B., T. 6, S. 3, and E. 1 to Suez is the junction canal navigation supplied by the waters of the Nile.

## NOTES OF A VOYAGER.

*The Basin of Arcachon: France.*

THE pretty village of Arcachon, which owes its present attractive condition to M. Pereire, the Paris banker, and the Midi Railway Company, occupies about two miles of shore to the south of the so-called basin of the same name, and is so near the Bay of Biscay as to be within hearing of the sea. It is forty miles by rail to the eastward of Bordeaux, whose people resort to it for bathing.

The celebrated basin known to many of our readers forms an irregular equilateral triangle, of between ten and eleven nautical miles a side, and contains nearly forty square miles of area, having a land-locked entrance, but obstructed by a shifting bar at the western angle. The land enclosing it on the eastern side is more or less cultivated, being part of the Landes district stretching from Bordeaux to Boulogne; the western, or sea side, being formed by sandhills, those on the south covered with fir trees, planted to prevent the sand drifts, which seem to have turned other basins into inland lakes, and to threaten Arcachon with the same fate from its unplanted side.

There is perhaps no place where sea fishing can be carried on at the same time more safely and profitably than at Arcachon. Its waters are of the same saltness as the ocean, and receive with every tide fresh supplies of all the best fish of the Bay of Biscay, up at the very top of the basin.

This has brought round it a population, the density of which strikingly contrasts with the desert further inland; and their condition, as compared with other fishermen along the coast, is good, and improving. They do not confine themselves to the basin, but fish the waters in open boats during the summer, and in larger vessels all the year round.

The waters of the basin present an unbroken surface at high water, of a depth on the banks between five feet at neap and ten at spring tides. The ebb exposes these banks, divided by wide and deep channels, and gives ample field for tidal fishing, and the planting of oyster beds.

Of the craft constantly employed in the fisheries, two are steamers of 50-horse-power, carrying crews of twelve men; sixteen are luggers of between thirty and forty tons, with crews of four hands; seventeen are large open boats about forty feet long, carrying crews of two men and a boy; and nearly five hundred are small rowing boats, pulled by two men. The whole number of hands thus employed is nearly twelve hundred.

The small rowing boats are built on lines, admirably fitting them for the shallow and occasionally rough waters of the basin. They are twenty-four feet long over all, keeled only in one-fourth of their length from the stem and sternpost, and flat in the rest of the bottom. They therefore draw but little water, and are lively under the oar.

According to my notes, a capital of £30,000 is invested in these craft, and over £16,000 in nets; the total yearly value of fish caught being £60,000.

Assuming these craft to last an average of ten years, which allows for various accidents, and the nets to require renewal annually, a deduction of £20,000 must be made from the gross catch, leaving £40,000 to be divided between the owners of boats and nets (in the comparatively few cases in which they are not themselves fishermen) and twelve hundred hands employed.

The steamers and luggers fish outside the basin; the first with trawls, seines, and bottom drag nets; the second chiefly with trawls of an inch and a half mesh. The large rowing boats fish both inside and outside, with fixed bottom nets of two and three-quarters inches mesh, and seines of between three-quarters and an inch and a quarter mesh. Their catch includes sardines in summer, and turbot, soles, plaice, gurnet, hake, and other bottom fish all the year round. They find a ready market for their undamaged fish at Paris and Marseilles, as well as at Bordeaux, and other large provincial towns.

Various modes of fishing are followed by the small boats. They use seines, bottom drag nets, stake nets and hand nets, adding to these in dark cloudy nights the killing practice, illegal in England, of rigging out and lighting fire cressets at the stem of their boats, and striking with grains the fish that are brought up by the light. The catch of these boats consists of sole, plaice, gurnet, mullet, smelts, and spring sardines, when swimming deep. Many of them venture outside in the season when sardines are on the surface.

These boats, with the wives and families of their owners, also find regular occupation in taking shrimps, mussels, and razor-fish, as well as in the breeding, tending, and dredging of oysters. The value of common shellfish caught in the basin is between fifteen and sixteen hundred pounds sterling in the year.

As some information for our own breeders, oysters here are bred on allotments granted by the Government for the life of the grantee, on whose death the allotment reverts to the Government, the heirs being allowed to sell the stock. There are one hundred in the basin. The spat thrown out by them at breeding time forms a small extent of beds on banks lying in the line of their tidal currents, which are fished by the owners of the small rowing boats. The first cost of a bed is forty-two pounds; its annual expenses fifty-two, and the profits about eighty pounds. The owners buy up at seventeen shillings per thousand large quantities of oysters caught on the free beds, the catch of which last year was nearly three millions in number.

In the mild climate of Arcachon, where the oyster is in no great danger from winter cold, its culture is easy and comparatively inexpensive. It does not require such deep water as in England, nor much more indeed than attention to the cleanliness of the ground and spat nursery during three months of summer.

These are, however, of the first importance, as may be seen from the readiness with which in the month of June the embryo oyster fastens

on a fresh tile placed within reach of the breeding fish, and the utter barrenness of any stone, or other mass, that has contracted a muddy or weedy surface from lying in the water.

As the profits of oyster beds are so considerable, many applications have been made for new ones, but refused. If the ground of refusal is a desire to leave the present unoccupied banks free to fishermen, it would seem to be a mistaken policy. It would be for their advantage to have well kept allotments all across the basin, from which in the season the spat could be carried by the tide to the banks above and below them.

At the head of the basin, near the little town of Audenge, where a number of small rivulets fall into the basin, are some extensive private reservoirs for the growing of salt-water fish. These are formed by walls built out into the water, so as to enclose a large space covered at high water, and have wide sluices, through which fish are brought in considerable numbers by the rising tide. Here they are kept, the full-grown to supply the fish markets of France, the small, self-feeding, to grow until large enough for sale. The investment is understood to be very profitable; and it seems to be one that might well attract capital in England in some of our wide estuaries, where such reservoirs could be cheaply made.

The great want of the Arcachon fisheries, like those of many other parts of the world, is capital. The inhabitants of French towns, who are consumers of fish, and who would take vast quantities at prices within their means, are now compelled, when fish is to be had, to pay the prices of London west-end tradesmen. There is consequently a general slackness of the demand, which would be fostered by an abundant and regular supply.

With this view, a few wealthy individuals are now building steamers for a sea fishery off Arcachon, and they hope to be able by mercantile energy and connections not only to make fish a common and economical article of food in its present markets, but to open several others for supply from this coast.

One result of their success will be to bring a greater influence in the true interest of fisheries to bear on the French regulations, now so much complained of. By these regulations, of which an abstract is annexed, the free right of fishing is confined to a distance of three miles from low-water mark on the shore; and within this line nets are restricted to certain sizes of mesh, and fishing in general is made subject to the arbitrary regulations of local authorities.

A stop has been put to the establishment of fish reservoirs that have been found so profitable; and by the tenure of oyster beds, the whole of a recent outlay, which has made no returns, may be forfeited by the death of the grantee.

No representation has availed as yet to obtain the abolition of these regulations, but if coast fisheries are taken up by capitalists, their recommendations cannot fail to secure what has been so long called for: a freedom for fishing as unlimited as that of the sea in which it is carried on.



The promoters of the exhibition at Arcachon have had this at heart in their undertaking; and it was no doubt hoped that its international character would bring foreign aid to the native opinion on so important an object.

The late exhibition has not been so well furnished as it deserved, owing rather to the distance of the place from other great European fishing waters, than to any want of real attractiveness in the plans of its Committee.

It is really interesting in showing the great variety of objects that may be brought together, and as an example, still of great rarity, of the manner in which such exhibitions may be best formed, as well as of the valuable teaching they afford for modes of fishing, and application of its products.

The exhibition building is of wood, neatly put together and simply painted, consisting of a nave eighty feet by forty, and having at the upper end two wings fifty feet wide, which project at each side forty feet, so as to form a transept one hundred and twenty feet from end to end. Its stands give an area of 2,000 square feet for exhibitors. Behind it is an aquarium ninety feet long, of a single row of glass reservoirs, and behind this a shed of six long tanks of masonry to show the processes of oyster and fish breeding.

On the left side of the building from the entrance are placed the implements, and on the right side the products of fishing. These again are divided by a transverse line into sea and river fishing articles.

Of the objects exhibited, France sent about 1,000 in number, and foreign countries nearly 300; 100 of the latter being from Belgium, 80 from the United Kingdom, 40 from Holland, and the same number from the north of Europe.

More numerous contributions would probably have come from all quarters, if they had not been required for the forthcoming fishery exhibition at Boulogne. There, fishing being made an object for capital comes into collision with the great rival enterprise of England and Holland, and its exhibition would necessarily dwarf any that could be prepared at the same time in a place of less competing power.

But, in spite of these unfavourable influences, the Arcachon undertaking has not been without its value.

Everything that can promote the important object of increasing supplies of food must command attention; and the utility of international exhibitions has been so satisfactorily proved by their effects on manufacturing and agricultural productiveness, that the time cannot be far distant when one will be held in London for the promotion of fisheries.

Every new example will be an improvement on all that have preceded it. Objects of interest and use will be multiplied. Better modes of management will be adopted; and the instruction that such collections offer both to producers and consumers will be more and more numerously attended and extensively applied to practical use.

As England is certainly the country where the benefits derived from

these exhibitions would be most rapidly seized, it is not too much to say that they call for the earnest attention of Her Majesty's Government, by whatever competitor they may be held; and that in sending a representative to these Exhibitions, they have done a service to the highly important fishing enterprise of their country.

Renewed attention has been called in quarters of influence on this side of the water to the alterations required in the Fishery Convention between England and France. It seems certain that the discussions arising on this subject, whenever fishery representatives of both countries meet, might be for the advantage of Her Majesty's Government in promoting the success of any measures they may take for the reciprocal removal of restrictions, by which England must always be the chief loser.

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*Abstract of the French Fishing Decree, May 10th, 1862.*

Article 1.—Fishing, not oyster, free all the year, and oyster from September to April inclusive, three miles or more from low-water mark, subject to British Convention.

Article 2.—On representation by fishery representatives, this fishing may be suspended by authorities.

Article 3.—Within the distance all fishing but oysters allowed at all times; but in bottom and seine nets the mesh must be under an inch square. Draw and float nets, and ground nets eight inches clear of the ground are not restricted as to mesh.

Article 4.—Nets for eels and other lank fish may be of any mesh, but must be used for no other fish. Grains, griffs, and dredges allowed. Smelt and mullet nets are regulated by local authorities.

Article 5.—Stake, weir, and all other bag nets prohibited in fresh waters and their mouths.

Article 6.—Draw bottom nets allowed by the authorities, limited to an inch mesh, and must not be used within half a kilomètre of an oyster bed.

Article 7.—All fishing within three miles may be prohibited.

Article 8.—Dates and beds of oyster fisheries fixed by authorities; not to be fished at night; all sand, gravel, shells, and young oysters, not claimings, shall be thrown back into the water, or laid on new beds.

Article 9.—Private fish reservoir to be regulated by order.

Article 10.—New fishing establishments prohibited.

Article 11.—No growing fish under four inches, lobster and crawfish under eight, and oysters under two inches can be caught, salted, sold, carried, or used.

Bordeaux, July 12th, 1866.

## QUEENSLAND AND HER KANAKA LABOURERS.

MR. EDITOR.—I believe that on more than one occasion during the two last sessions of Parliament, Members of the House of Commons have asked for information of the Government with respect to the importation of Natives of the South Sea Islands (usually called Kanakas) into the Colony of Queensland, as well as concerning their subsequent employment there as labourers; whether such importation was sanctioned by the colonial government, and whether the home government approved of the course adopted by the colonial authorities. Other enquiries on the same subject have also been made, which need not be particularized as they did not receive any satisfactory replies. I also believe that had these enquiries been met with a full and truthful statement of the facts of the case it would have produced such a painful impression on the public as would have eventually caused this traffic to have been forbidden. Being strongly impressed with this opinion, I have ventured to jot down the following sketch of the means by which these Kanakas are brought to Queensland, and what kind of treatment they usually meet with when there. I do this with the more confidence because I am not aware that information on this subject has before been printed.\* In fact it is only known to a very few that numbers of these Kanakas are being imported into Queensland, and I propose to begin my story by describing the way in which the business of importation is carried on.

A vessel is fitted out for the purpose at Sydney or Brisbane, and supplied with a quantity of such trinkets, etc., as have charms for savage eyes, and usually a few Kanakas who have been specially well treated are embarked to act as decoys. The vessel sails for any of the islands where Kanakas are supposed to be procurable, and on her arrival at her destination no time is lost in communicating with the natives, who in general flock off in canoes to meet any new arrival. The decoys, mentioned above, are then brought into use. It is their business to draw exciting pictures of the wonderful sights they have seen, and the kindness with which they have been treated. Beads, and other "notions" are distributed, and the result is that some of the islanders are prevailed on to try their fortunes for a certain number of moons in the wonderful places of which their countrymen, the decoys, have given them such a glowing account. Those who can be induced to embark of their own free will are by no means numerous, and when it is found to be impossible to induce a sufficient number to embark by the above means, a process most unjustifiable is pursued. The natives are enticed on board by presents and offers of barter, and when there the males are secured, the women and children forced into the canoes, and the ship is got under way to proceed to another island where the same process may be repeated till the requisite number of Kanakas is obtained.

\* A tolerably full statement of it appears in our September and October numbers, in an account of a meeting at Sydney.

We will suppose now that the vessel has embarked as many Kanakas as can be stowed in her, and sails for Brisbane. On her arrival at that place the fact is made public by advertisement, and parties who wish to hire are invited to select from among the blacks those whom they think likely to suit them. Those desirous of procuring Kanaka labourers, who are unable to attend themselves, can have it done for them by sending a power of attorney to some one who will act as the very accommodating agent in the matter. Any one wanting them is required to pay about eight or nine pounds a head for them, which is supposed to be the passage money from the island from which they were taken. He will also be required, under the *Polynesian Labourers' Act*, to enter into an agreement to supply the men with a certain amount of clothing, which however is very trifling, and also rations; to pay them at the rate of 2s. per week, and at the expiration of two years to pay for their return to the island from which they were taken.

There can be no doubt that it is a great advantage to employers to be able to procure labourers at such a cheap rate, and that probably is the only argument that can be urged in favour of the system. A year ago in the north of Queensland the rate of wages for shepherds averaged from 30s. to 35s. a week, with rations supplied; and the outside cost of each Kanaka for the two years' service would not exceed £70, even on stations so far from the port of disembarkation as to involve considerable expense in conveyance from the port to the station. This certainly appears to be a very great saving, but I think when the whole circumstances are fairly considered, it will be thought that no special advantage to any particular class of men, should be allowed to atone for the evils attending the employment of these islanders.

Of course it is an extremely difficult matter to gain any really reliable information as to the way in which these men are obtained, as those who make a profit by the trade are not likely to be very communicative on the subject. But it is a notorious fact in the colonies that the trader does not hesitate to adopt any means to get the unfortunate Kanakas on board his vessel and to secure them when there. The French, I believe, prohibited the removal of any of the natives of the islands under their protection, and it was stated in the colonial newspapers some time back that a French man-of-war had chased a colonial vessel having Kanakas on board and had compelled her to land them again.

With regard to the treatment these men receive after their arrival at their destinations I am able to speak from actual observation, and I do most unhesitatingly say that on nearly every establishment on which Kanakas are employed they meet with more or less ill-treatment. In fact, as far as it is possible for anyone to judge who has not seen slavery as it existed in America, I should certainly say that in many respects the Negro in America was much better off than the Kanaka in Australia. In America the Negro costs a considerable sum, and it was manifestly to the interest of his master to treat him well, as the

better he treated him the longer he was likely to last, and the more work he could do. But the Kanaka is only allowed to be hired for two years, and the natural object is to get as much work out of him in that time as possible, and should he die before the expiration of his period of service the trouble and expense of sending him back to his native island is avoided. Then again, his wages are not paid till he has served his time. If he dies before he has done so, they are not paid at all. Even if the Kanakas were in all cases well treated there are reasons which would seem imperatively to demand the prohibition of their employment except under very stringent regulations.

Among the reasons I have alluded to perhaps one of the most important is, the fact that it is almost impossible to provide these men with suitable food. In their own islands they live almost entirely on fruit, vegetables, and fish. In northern Queensland, however, which is the part where Kanakas are mostly employed, it is almost an impossibility to grow fruit or vegetables of any sort, owing to the poverty of the soil, the intense heat, and the absence of anything like regularity in the rains. In consequence of this scurvy is prevalent among white men, but dreadfully so among Kanakas. The rations supplied to white men in the bush are often of an inferior quality, but this is almost invariably the case with food supplied to Kanakas, and they do not take at all kindly to meat, which is the staple article of food in Queensland. However much they might wish to complain of the quality or quantity of food supplied to them, or of any ill-treatment they may receive, they have in most cases no means of doing so; for perhaps the nearest bench of magistrates meets once a month some hundred miles away from where they are, and that bench would most likely be composed of settlers who employ them, and it is rather a futile proceeding for a white man to bring a case against a settler before magistrates who are settlers themselves. It is not difficult to imagine what bush magistrates are, who in many cases are quite ignorant men, and personally interested in the cases before them.

Surely it would only be a measure of common humanity for the colonial government to stipulate that no Kanakas should be taken to any place where they could not be supplied with at least enough vegetables to keep them in health. But were this condition required it would be very easily evaded, as any one would at once know who is aware what a dead letter the law is in the Bush! or at any rate in the more remote parts of it. But independent of hardships which are to a certain extent unavoidable, in too many cases these Kanakas have to submit to cruelties which are a disgrace to the government which sanctions the system under which they are practised. It is hard to say too much in favour of some of these Kanakas, especially of those who have not come in contact with the missionaries, or missionary-traders, as they should in many cases be called, from whom I am afraid they learn a great deal more than their prayers. These Kanakas are the most patient, docile fellows in the world. Yet this excessive patience though is a bad thing for them, as it makes them submit quietly to treatment which would drive any other men to open mutiny.

They do however sometimes retaliate. At a sheep station called Conway, situated on one of the southern tributaries of the Burdekin, some Kanakas employed there, rose and killed every white man on the place. As a rule, however, they are so simple minded, and so little able to take care of themselves, that it would be necessary to organize a very strict supervision to ensure their being treated with humanity, and, however stringent the regulations made by the government might be, it would be very difficult to enforce them. As matters are at present the Kanakas are entirely at the mercy of their masters, more especially those living in unsettled, thinly populated districts. I do not mean it to be inferred that I think in all cases employers of these islanders ill-treat them, but I am quite sure that the stations where they are well treated are quite the exception to the general mass.

Some station-owners would themselves be disposed to treat their black labourers as well as possible, but many of them do not reside on their stations; consequently the Kanakas are left to the tender mercies of an overseer! I think it will be generally admitted that it is not right to place such unlimited power in the hands of any one. The warmest advocates of the system admit that the government should take care that the men are properly treated, but the expense of any system of government supervision, to be effective, would be very great.

It may be asked how is it that no one has hitherto called public attention to this state of things. The truth is that no one is injured but the immediate victims themselves, and they, as before observed, have no means of making their complaints heard, and if they had, their complaints would be likely to fall flat on colonial ears! The northern settlers say they cannot carry on work at the present rate of white labour, and if the settlers are in distress nobody else is likely to be in a very flourishing condition, so entirely at present are northern interests dependent on the settlers.

All classes therefore look with complacency on any measure likely to promote the interests of the settlers without interfering with the interests of others. Certainly the introduction of black labour is very unpopular amongst the white working classes, in as much as a considerable number of white labourers are deprived of employment thereby, but they have no effective means of making their complaints heard.

It may be doubted that the settlers do abuse their power over their Kanaka labourers, but it is not necessary to my argument to prove that they really do. What is I think beyond all doubt, is that in the existing state of things, the Kanakas are so completely at the mercy of their masters, that they may be treated with the utmost brutality, and yet be quite unable to obtain any redress, or even as much as to lay their complaints before any tribunal.

It is sincerely to be hoped that the matter will be fully enquired into before long, and if it is found, as it must be, that these Kanakas are first of all, either kidnapped or else enticed on board the vessels employed in the trade by the grossest imposition, and that on their arrival at their several destinations they are made to submit to every

hardship that ignorance, carelessness, and in many cases absolute cruelty can inflict—if I say all this is proved, the colonial government should put a stop to the traffic in the importation of Kanakas, or in the event of their not doing this, the home government should interfere and compel them to do so.

A VOYAGER.

*To the Editor of the Nautical Magazine.*

We add to our correspondent's letter an extract from a late Sydney paper (the *Morning Herald*, of 7th September last), the resolutions of a Committee appointed by the Government of Queensland, to enquire into the subject of this Kidnapping of Kanakas. It is an amusing document. Of course *their* enquiries totally ignore the offence, and for *their* exertions kidnapping may flourish as it will. And it is curious that at Sydney the *Daphne*, a vessel taken there by H.M.S. *Rosario*, is undergoing her trial.

*“Progress Report of the Operation of ‘The Polynesian Labourers Act of 1868.’*

“The select committee of the Legislative Assembly, appointed on Friday, 14th May, 1869, ‘for the purpose of taking evidence and reporting upon the operation of the Polynesian Labourers Act of 1868,’ having examined into the subjects referred for their consideration, have agreed to the following progress report:—

“1. Your committee have taken a large quantity of evidence in order to ascertain what truth there may be in the following allegations, made here and elsewhere, through the medium of the public Press and otherwise, respecting the employment of Polynesians in Queensland, viz. :—

“(1.) That they are obtained from their island homes by violence or fraud.

“(2.) That they are treated with injustice by their employers, and regarded with aversion by European labourers.

“(3.) That, being savages, they are likely to injure our colonists.

“(4.) That, being Christians, they are likely to be contaminated by intercourse with our colonists.

“(5.) That their return to their homes at the end of their periods of service is not likely to be fulfilled according to agreement.

“(6.) That their employment is opposed to the interests of European labourers.

“On these and other points your committee have made diligent inquiry wherever it seemed possible to obtain trustworthy information, and the result convinces them that these allegations are not proved by the evidence placed before them.

“2. Your committee, however, recommend as a precaution against possible wrong-doing on the part of those who bring these men from the islands, that the Government should send an agent with every vessel licensed for this service, charging the cost of such agent against the person to whom the license is granted.

" 3. Your committee further recommend that efficient interpreters should be obtained, for the purpose of fully explaining to the men their contracts and duties, as well as, on their behalf, any complaints they may have against employers or others.

" 4. Your committee also advise that Polynesians shall be deemed competent witnesses in courts of justice—due care being taken that they are made aware of their obligation to speak the truth.

" 5. Your committee find that all employers of Polynesians concur in believing their labour to be highly satisfactory and valuable; and they are of opinion that while the interests of humanity demand that all care be taken of these men, no unnecessary obstacle should be thrown in the way of their introduction.

"A. M. FRANCIS, Chairman.

"Committee Room, No. 2, 26th August, 1869."

#### NOTES ON ICELAND AND ITS FISHERIES.

*By Vice-Consul Crowe.*

THE earliest information we have concerning Iceland is from an Irish monk, whose report induced some Scotch monks and dwellers in the Northern Isles to sail for the North, who, after touching at the Feroe Isles, reached Iceland in the year 745 A.D., and located themselves on the small island Papöen on the east, and at Papyle on the south side. These names evidently prove that the early settlers were "Papists," or monks; and the discovery, near these places, of the remains of bells, Irish books, croziers, and other things, proves their presence on the island.

The total area of Iceland is 29,440 square miles (geographical). It is essentially a mountainous country, and it is estimated that two-thirds of the whole country are upward of 1,000 feet above the sea level. As the snow-line begins at an elevation of between 2,700 and 3,000 feet, it is presumed that 4,288 geographical square miles of the island are covered in perpetual snow; this is composed partly of "névé" and partly of glaciers, which fill the intervening valleys, and which are called by the natives "Skrid Sökler." As is well known, the Icelandic mountain ranges are of a comparatively recent volcanic formation, the highest point being the Oræfa Tokull—1,954 mètres, Hecla being only 1,557 mètres high. The first eruption of this volcano took place in the year 1104.

The interior of the country is uninhabitable, and the 69,000 souls who now live on it dwell entirely on the coast and on the shores of the Fjords running inland from the sea.

The islanders have a tradition that in the unexplored centre of the snowy highlands there is a fruitful valley, where, in former times, a colony of malefactors took refuge, and still exists there. The elevated



tract referred to in this fable covers 960 square miles, and is called the "Odadahraun," or "Malefactors' Desert." The inhabited portions of the island are about 12,160 square miles.

The average temperature of the earth, owing to the subterranean heat, is about  $4\frac{1}{2}^{\circ}$  Réamur all the year round.

The Polar current, which always runs between the island and Greenland, bringing with it icebergs and drift-ice, renders the northern parts of Iceland nearly inaccessible; and the whole Sound is frequently closed, so that no vessel can sail round its north-west point. These floating masses of ice, after freezing together for many miles, break up in the spring, and become jammed into the northern bays and creeks, which are generally thus closed up until far out into the summer. The temperature of this part of the island is, in consequence, much depressed; so much so, indeed, that the town of Akreyri has the same climate as the North Cape, which lies 300 miles more northerly.

When the drift-ice lies as late as September, it is considered as a national calamity, for both the hay crops and fisheries fail, and man and beast are in danger of starvation.

Three times in the eighteenth century the ice inclosed the whole island, and only a small strip of coast near Reykjavik was accessible.

The climate, however, is comparatively temperate, owing to the peculiar formation of the island, and especially to the influence of the warm stream from the Gulf of Mexico. Warm summers are rare, and severe winters are the rule; the spring is generally raw and stormy.

The mean winter temperature at Reykjavik, the capital, is  $-1^{\circ}$  R.; the summer heat,  $+9^{\circ}$ , and for the whole year  $+3^{\circ}$  R.; whereas, at Akreyri, on the north side, the winter average is  $-5^{\circ}$ ; the summer ditto,  $+6^{\circ}$  R., and for the whole year,  $0^{\circ}$  R., or freezing point.

There is scarcely any night from May to September, especially on the north side, where it is continually light during the whole of that time.

The island is at present almost entirely denuded of trees, excepting in certain sheltered parts, where there are tracts of underwood, composed of stunted birch, willow, and mountain-ash, which rarely exceed 12 feet in height. In former times there were large tracts of forest, containing not only birch, but oak and other kinds of trees, which supplied the inhabitants with wood for domestic and nautical purposes; and the Danish Government, encouraged by this fact, have decided upon applying a certain sum of money annually for the purpose of protecting and encouraging the planting of trees. The want of wood, however, is to a great extent, supplied by the floating timber thrown on the coast by the Gulf Stream; the scarcity of fuel, however, is severely felt, the poorer inhabitants using both dried sea-birds and dried manure instead of firewood.

Agriculture is at low ebb, the cultivation of grass constituting now the chief agrarian occupation of the islanders, for on this depends the existence of their large sheep flocks. Grain was formerly grown on the island; but this important branch of agriculture has been entirely laid aside.

There is little doubt that rye, barley, and oats could be successfully cultivated; but the intercourse between the island and corn-producing Denmark renders it more profitable to employ all spare hands in the fisheries; cereals, therefore, are not raised; tubercles and hardy vegetables thrive well, about 7,000 such plots on the island. Drainage and fencing are not neglected. In 1856 there were 40,202 fathoms length of ditch drains, and 44,671 fathoms of fencing, which improvements were the work of the last few years.

There are no roads, and locomotion is both difficult and dangerous. The peasants of the interior bring their produce on horseback to the seaports about twice a year, and take back to their homesteads the few manufactures and necessaries they require.

The population of the island was, in:—

1845	..	..	..	58,558	souls,
1855	..	..	..	64,603	"
1865	..	..	..	68,000	"

During an average of ten years there was annually:—

1 Marriage	for every	..	..	143	persons.
1 Birth	"	"	..	25	"
1 Death	"	"	..	39	"
1 Deaf and Dumb	"	"	..	994	"
1 Blind	"	"	..	320	"

and 1 illegitimate child in every 6·9 births, or nearly 1 in 7. Of every 42 deaths there was 1 by drowning, and the proportion of men to women was as 1,000 to 1,093.

Reykjavik, the capital (from "Keik," smoke, and "Vix," a bay or creek), has a population of 1,500 souls. The Icelanders have been but little influenced by modern civilisation, and speak the original Scandinavian in all its purity, nearly as it was introduced by the first settlers 900 years ago. So little have these primitive people intermixed with foreigners, that on the whole island, in 1864, there were only 113 individuals born out of it.

The Lutheran Church is represented by 1 bishop, 4 deans, and 196 clergymen or priests; the income of these latter averages about 300 rix-dollars annually (or £34).

There is a Roman Catholic Mission established at Reykjavik, consisting of two priests; but proselytism has made no progress among the natives, one only, I am told, having gone over to the Romish faith.

The trade of an island so barren and sparsely peopled must, as a matter of course, be limited; it is principally carried on by barter, the peasants bringing their produce from the interior, and disposing of it to the merchants and traders established at the towns and factories on the coast, from whom they receive in exchange the few colonial and manufactured goods they consume.

The exports consist of fish and its products, liver oil, roe, etc., of wool and woollen articles, dried and salted mutton, feathers, eider down, sulphur, and a few fox and other skins.

The fish is shipped either direct or in Spanish vessels, chiefly to Bilbao and Barcelona, where the Iceland dried cod is much esteemed,

and under the name of "Bildals Clipfish" (from a place of that name in the Arnarfjord) commands a high price. Three small cargoes shipped direct from Iceland (together 604,736 lbs.) were sold last month in Barcelona at 43 pesetas per quintal. The inferior qualities are shipped to England and Denmark.

In 1864-5 vessels left Iceland for Denmark of a collective tonnage of 6,067 tons, and 58 vessels arrived there from Denmark of a collective tonnage of 4,572 tons. These figures are exclusive of the steam trade between Copenhagen and Reykjavik.

Since the year 1858 there has been a regular steam communication between these two cities; six journies are now made in the course of the year, and a Scotch port is touched at both out and home. The Scotch have not omitted to avail themselves of this opportunity of competing with the Copenhagen merchants, and a reduction in the price of many important articles of import, and corresponding rise in that of many exports, has been the result, much to the benefit of the peasants, who, until quite recently, were the victims of an oppressive and unjust Danish monopoly.

The dues levied on ships trading to Iceland are, for native and equally privileged vessels 2 rix dollars (4s. 6d.) per commercial last (150 cubic feet), and double that amount for unprivileged ships. These dues must be acquitted before the permit or "sea-pass" is delivered. No other fiscal duties are levied. Danish Consular agents are authorised to deliver such permits or passports.

Previous to 1854 the Danes had the exclusive monopoly of the trade with Iceland, but, since that date, foreigners, with but few restrictions, are admitted on an equal footing. Trading operations, however, are still only permitted at certain places, a list of which will be found further on.

The island is Governed by the Stiftamtmand or governor, appointed by the Danish King; he has two Deputy-Governors, or Amtmond, to assist him: and for administrative purposes the island is divided into four amts or districts, called "syssels," each of which is again administered by a sheriff or "sysselmand." These divisions are named after the cardinal points.

In the south district there are the following privileged factories and trading places:—

- |                         |                      |
|-------------------------|----------------------|
| 1. Reykjavik (capital). | 5. Vestmanns Island. |
| 2. Havnefjord.          | 6. Papavs.           |
| 3. Kaffavik.            | 7. Landhussund.      |
| 4. Orebakke.            |                      |

In the north district:—

- |                  |                 |
|------------------|-----------------|
| 8. Ofjord.       | 12. Husavik.    |
| 9. Skugerstrand. | 13. Ramfarhavn. |
| 10. Hofsos.      | 14. Thorshavn.  |
| 11. Seylafjord.  | 15. Sandarok.   |

In the east district:—

- |                  |                |
|------------------|----------------|
| 16. Vapnafjord.  | 18. Eskefjord. |
| 17. Seydisfjord. | 19. Bernfjord. |

In the west district :—

- |                  |  |                   |
|------------------|--|-------------------|
| 20. Isafjord.    |  | 26. Patriksfjord. |
| 21. Stykkisholm. |  | 27. Flat Island.  |
| 22. Olafsvik.    |  | 28. Keykjařjord.  |
| 23. Búdenstad.   |  | 29. Bosdoyre,     |
| 24. Bildal.      |  | 30. Straumfjord.  |
| 25. Dyrefjord.   |  | 31. Skeljavik.    |

Making in all 31 trading places, of which Reykjavik, Isafjord, and Ofjord are towns.

The law of the 15th April, 1854, regulating the Trade and Navigation with Iceland, enacts that all foreign vessels visiting the island for purposes of trade shall immediately, on arrival, touch, or bring up, at one of the following ports, viz. : Reykjavik, Vestmanns Island, Stykkisholm, Isafjord, Ofjord, or Eskisfjord, where they must report their ship, and, if not provided with a clean Bill of Health, must submit to a medical examination, after which, upon payment of the legal shipping dues, they will receive a Trading Permit or Sea-pass, and are then at liberty to transact their business at any of the above-enumerated 31 places. At some of these places there are no merchants at all, at others from two to six ; but at Reykjavik there are ten : they are natives or Danes, with the exception of one English house at the last-named port. Many of them reside in Copenhagen, and have their business carried on by factors or agents.

The best winter harbour in the island is Havnefjord, and after that Reykjavik, Isafjord, and Ofjord. Skügústrand Hofsos, Harlavik, Vapnafjord, Orebakke, and Keflavik are dangerous harbours, and ships are often driven ashore and totally wrecked there.

The harbours are very rarely closed by ice on the south side of the island ; but frequently the Greenland drift-ice blocks up the west and north, and occasionally the east coast in the winter and spring.

The trade with Norway is insignificant ; it consisted in 1865 of an importation of 2,574 loads of timber, 3,440 cubic feet of bark, and an exportation of about 12 cwt. of wool and coarse woollen goods, some small parcels of tallow, and a couple of hundredweight of feathers and down. Only one native vessel of 100 tons cleared in and out for Norway direct ; but fourteen Norwegian vessels, together about 1,200 tons, touched at the island in this year, on the passage to and from Greenland and the Feroe Isles.

The staple produce of the island are sheep, of which very large flocks are kept, the number averaging from 700,000 to 800,000 ; this figure, however, fluctuates, for epidemic and contagious diseases have, at times, swept off large numbers. At a time when the cattle plague is decimating our own cattle stocks, it may be worthy of mention that the only effectual means of arresting the contagion in the island has been complete isolation. Immediately symptoms of contagious disease show themselves, the infected district is cut off from communication with the healthy ones by means of a "cordon" of peasants, who are relieved at stated times ; and in this manner the disease, for months, and even years, has been confined to a limited area.

The rivers of the island are well stocked with trout and salmon; but this latter fish figures but little as an article of export: large quantities of it are caught, as many as 3,000 having been taken in one day in traps and dams.

The coast of Iceland abounds in fish, especially of the cod tribe, and this abundance has not only from a very early time supplied the dwellers on its inhospitable shores with their chief food, but enabled them to procure those necessaries and minor luxuries, without which their existence would have been painful and precarious: this abundance has also attracted the attention of foreign nations, who have, in considerable numbers, carried on an extensive and profitable fishery in these truly Arctic regions.

The first authentic record we have states, that in 1412, thirty foreign ships or craft fished off the coast. Towards the end of the seventeenth century, and until the year 1730, we have accounts of English and French vessels being engaged in the Whale Fishery round this island, and in the eighteenth century the visits of the Dutch were very frequent.

At present the French are the only foreigners who engage to any extent in the cod fishery of Iceland. Some few Belgians are occasionally seen, and a few English fishermen from the Shetlands, but their number is insignificant. The fisheries of the present day are divided into three kinds, viz., the cod fishery; shark fishery; and whale fishery; I will endeavour to describe the first one as carried on by the natives.

*Cod Fishery.*—It appears that the large cod remain during the winter near the island, and in February and March approach the south coast to spawn; the fishermen, in Faxebay, where extensive fishings take place, affirm that the direction of the fish is from west and south.

A glance at the map of Iceland seems to indicate that the long flat coast stretching from Vestmanns Islands to Vesterhorn, is specially adapted for a spawning ground, and so much is certain that in its vicinity, and at the Snejfeldsjokull, the earliest and best fishings commence in February and March, and it is not until towards the end of June or beginning of July, that the fishings begin further round to the north. Cod is found in great numbers in Faxebay as late as May, and in Brieda Bay in June, and somewhat later along the coast to the north-west.

That the large fat cod remain near the land to the south of the island as late as the middle of May, is proved by the statements of the native, as well as French fishermen, and by the fact that all the French vessels which, towards the end of March or beginning of April assemble at the south of the island, between Vestmanns Islands and Vesterhorn, disperse about the middle of May, and follow the fish along the west and east shores to the north, where the fishings, as far as the French are concerned, are brought to a close with the month of August.

As the principal fishings begin on the Newfoundland banks, at the Feroe Isles, the Loffodens (Norway), and in Iceland about the same

time, it is quite evident that the Iceland cod is not a migratory fish, but a dweller in the vicinity of the island where it finds its food—in summer out at sea, in the other seasons near the land.

Owing to the small population, the inhabitants of Iceland, unlike those of more densely peopled countries, are not divided into a fisherman class existing exclusively by the ocean, and a peasant and an artisan class depending solely on agriculture and home occupations for support. On the contrary, wherever it is possible, the Iceland fishermen have small farms or ground plots, and are called "fishing peasants." The effect of this is that it is only in the winter, and spring and autumn seasons that any considerable fishings can take place, because the summer months are devoted to agricultural labours; and it often happens that the coast may swarm with large cod which for want of hands cannot be captured.

The home or inland cod fishery, so far as the export is concerned, is of importance only in the south and west districts; whereas, on the north and east sides of the island, where sheep breeding is the chief occupation of the inhabitants, fishings only take place to supply the home demand. Indeed, it is even possible to import the dried fish into these districts with a profit.

The winter and spring fishings give the large fat cod which is sold at the factories and trading ports, and afterwards prepared for export, while the summer fishings only produce the small cod, cole-fish, haddock, and halibut, which are salted and smoked for home consumption.

The Icelanders fish chiefly from open boats, and only exceptionally from decked ones: their boats are of various sizes, having from two to twelve oars, and are manned by as many men as oars, the foreman or leader always steering the boat; they all have projecting prows, are very easily rowed, and, as they are always dragged on land, are of a very light construction. As a rule they only carry one small lug sail.

Only the largest boats with six to twelve oars are used in the cod fishery, and in these the natives often put many miles out to sea in the depth of winter, to fish. They are a most hardy and intrepid set of mariners and consider rowing and riding as the most necessary and chief of all manly accomplishments.

The method of capturing the fish is either by small drift nets, deep-sea or hand lines, and the ordinary long lines. Fishing by nets is only carried on in the south part of Faxebay between Skagen and Havnefjord where the nets are sunk, as the fish in these parts generally keep close to the bottom; the fish taken by the net are different from those caught on the line, being more squat and plump with smaller heads. Fishing with the drift net generally ceases about the middle of April, and is succeeded by the deep-sea or hand lines. The grounds at South Hraun on the edge of the banks in Faxebay, are considered excellent for this mode of fishing, and here the men anchor their boats in 18 to 20 fathoms water.

The hooks used are the same as the French ones, excepting in Breida Bay where the men still use the old Iceland hook which is 20 inches long and  $2\frac{1}{2}$  lines broad.

Fishing with the ordinary lines is carried on when the two other methods are no longer productive, and takes place all round the island. From 1 to 4 lengths of a strong thick line, each length measuring 60 fathoms, are spliced together, and vertical or hanging lines 6 feet in length are spliced into this at a distance of from 6 to 9 feet apart, and a hook baited with snails or mussels is fastened to the end of each hanging line: the hooks used are the ordinary tinned English ones (No. 5).

A boat carries from twenty to forty such lines, which are sunk to the bottom by means of stone weights, and their position is indicated by buoy ropes kept up by small floating barrels marked with the owner's name. They are placed across the entrance to the bays and rivers, or sometimes at the outside of them, and are taken up twice or thrice a day according as the weather permits. As many as eighty of these long line boats may sometimes be seen collected together, busy fishing from three to four miles off shore.

Line fishing is carried on, on a much smaller scale in Iceland than in other countries, especially in Newfoundland, where the French fish from ships of 100 to 150 tons, with crews of from 50 to 80 men, and using lines measuring 1,500 to 2,000 fathoms. The little extension given to it in Iceland does not arise from any falling off in the quantity of the fish, but from want of enterprise, and the poverty of the people, which prevents them acquiring the appliances necessary for larger operations. It is in this line-fishing that collisions occur between the natives and the French fishermen, which latter driven by the weather, the currents, and the movements of the fish, are often brought within the prohibited limits reserved to the latter, and quarrels, entanglements and loss of gear is the result. The limit within which non-resident foreigners may not fish is about three miles from the coast. The natives never carry provisions with them, they never forget, however, their snuff-horn, which is an indispensable article to the Iceland fisherman.

As it may be interesting to learn how the fish are prepared for export in these high latitudes where the climate is so variable, I add a few lines explanatory of its treatment before it is fit for shipment. The mode of preparation determines in a great measure the quality and value of the fish. In order to obtain a "white flesh" the first thing done is to rip up the belly of the live fish from head to tail; this done the head is cut off and the entrails taken out, the liver and roe being carefully separated therefrom and placed apart; the backbone is next extracted down as far as the third joint below the navel, after which the carcase is carefully washed in sea-water and placed in salt: one barrel of salt (about 224 lbs.) is used for about 352 lbs. of fish. After lying three to four days in salt, the fish are considered fit for drying: as soon as the weather will permit they are well washed in sea-water and laid out singly on the rocks or stones to dry, great care being taken that they are protected from dust and wet, and that they are frequently turned so that both sides are dried alike. When the process is complete they are piled up in the storehouses. In case of damp or wet weather

they are immediately housed, or where this cannot be done, they are piled up in stacks six feet high and as much broad, and covered over with tarpaulins. The fish need not of necessity be taken out of salt after the three or four days pickle, for experience has shown that they will not imbibe more than a given quantity of brine, and they may lie thus without deterioration from one year to another and then be dried for exportation.

Besides clipfish and stockfish, which are prepared in the proportion of 2lbs. of the former to 1lb. of the latter, the natives prepare a third kind for home consumption, called "Heingefish," for which the cod is split up along the back and hung up unsalted to dry in sheds with open latticed sides. This kind is easily distinguishable from the other two by its shrivelled-up appearance: it is eaten uncooked by the natives, who likewise dry and eat the refuse heads with great relish.

Although about 12s. 6d. the cwt. is paid in Hamburg for fish guano, the Icelanders do not, like the Norwegians, utilize the debris of the fish for making this manure.

The export of prepared cod and its products was as follows:—

	1862.	1865.
Of Clipfish ... .. lbs.	6,621,824	2,468,000
" Stockfish ... .. "	730,752	35,200
" Liver Oil ... .. barrels	6,557	...
" Roe ... .. "	1,489	...

The export of an average ordinary and abundant year is as follows:—

	Ordinary Year.	Abundant Year.
Of Clipfish ... .. lbs.	3,520,000	5,280,000
" Stockfish ... .. "	1,408,000	2,112,000

In order to give a better idea of the extent of the fishings, I include a statement of the total number of boats owned by the Icelanders in the years 1861 and 1864, and of which the open boats are almost exclusively used for fishing purposes.

	1861.				1864.			
	Boats with Deck.	Open Boats with 8 to 12 Oars.	Open Boats with 4 to 6 Oars.	Smaller Open Boats.	Boats with Deck.	Open Boats with 4 to 6 Oars.	Open Boats with 8 to 12 Oars.	Smaller Open Boats.
In the South District ...	5½	111½	303	1,002	7	278	131	956
" West District ...	20	110	485	634	23	513	84	619
" North and East District... .. }	31	18	415	415	32	399	15	466
Total ... ..	56½	239½	1,203	2,051	62	1,190	230	2,041



The decked craft, which have an average tonnage of 25 to 40 tons each, are almost all employed in the shark fishery.

It is estimated that the number of fishermen employed in the cod fishery at one time is about 10,000.

A full account of the fishings off Iceland for French account will be found detailed in the "Revue Maritime et Coloniale." I will, therefore, only mention here that their annual fleet consists of about 250 vessels, of an average tonnage of 90 tonneaux each. In 1864, 260 vessels visited the island, carrying 4,337 men (crews). The greater part of them are schooner rigged.

The produce of the French fishings always considerably exceeds that of the natives, for their take is frequently as much as 30,000 cod per ship, and its average annual value cannot be less than 5 millions of francs.

*Shark Fishery.*—A considerable shark fishery is carried on on the north and north-west parts of the island, and also, of late years, by some vessels on the east side.

The shark fished in the Iceland waters, called by the natives "nákarla," or "havkalen," is the *Scymnus microcephalus*, averaging from 10 to 20 feet in length. Some have been found measuring 25 feet, and of which the liver filled two barrels.

It is indigenous to these waters and the Norwegian coasts, and is seldom taken in the Cattedgat. It is exceedingly voracious, attacking frequently the whale, from whose sides it will tear out large pieces of blubber. It lives principally on seals and fish, and but rarely attacks man, unless molested by him. It ejects its ova, which are about the size of a hen's egg, in the months of July and August, each shark giving about half a barrel full. Its skin is of a grey colour, but coarse-grained, and is not susceptible of being polished. The liver is the most valuable part, and as a rule, from one to two barrels of oil are obtained from each fish.

In the month of April it is caught near the land, in about 60 to 70 fathoms of water; but later in the season it goes farther out to sea, and in the summer must be sought for off the western side of the island, 80 to 150 fathoms from land, and in as much as 200 fathoms water; on the north side, when it seeks the edge of the ice, it sometimes sinks to the depth of fully 300 fathoms; on the east coast, on the contrary, the shark is rarely fished in a greater depth than 80 fathoms, and from 40 to 50 fathoms off the shore.

The most suitable sized craft for shark-fishing are vessels from 25 to 30 tons burden, as they do not require such heavy grappnels and hawsers, and can easily shift their moorings; and, being low on the water, have greater facilities for getting in the livers than larger ships would have.

Of late years, the craft used on the north side of the island are decked vessels of 35 to 40 tons, provided with oars, and so lightly constructed that in calm weather they can easily get clear of the ice, and move from place to place. When a vessel is in search of sharks, she is anchored at a place where they are presumed to be—in pre-

ference, near the rising edge of a bank. The anchor used is generally a four-pronged iron grapple, weighing about 180 lbs. with 15 to 20 fathoms  $\frac{3}{4}$ -inch iron chain cable, and a 350 fathom long hawser. When anchored, the fishing commences. If nothing is caught, the position is shifted until the shark is found; and if the take is good the vessel remains at the spot, and rides out the storm, if necessary.

The lines used are of the thickness of deep-sea log-lines, fastened to 3 fathoms of chain, in the middle of which a leaden weight of 10 to 13 lbs. is fixed. Under this a strong 6-inch iron hook is fastened; the entire hook is covered with the bait, and is notched inside the bend to prevent the latter slipping down. The bait used is young seal blubber, or horseflesh which has been previously smoked, and soaked for some time in blood. From the nature of the bait used, one is led to infer that the sense of smell is highly developed in this voracious fish. On the other hand, its feeling and vision appear to be very imperfect: for it does not seek to avoid the pursuit of man, or to escape the knife or spear; and instances are on record where it has swam round the ship after it had been ripped up and its liver cut out. Its dimness of sight is probably caused by the adherence, on the horny covering of its organ of vision, of small parasites (the *Lærnæopoda elongata*), which are frequently found entirely covering the eye.

When the shark is hauled up to the surface it is killed by means of a long spear. A harpoon is then fixed in it, and the ropes made fast to the ship's side; after which the carcass is ripped up by a knife affixed to a hole, and the liver is taken out and placed in barrels, and stowed away in the hold.

As the flesh of the shark is eaten by the natives, the carcass, when practicable, is landed by the ship's boats; but when this cannot be done it is kept alongside as long as the ships are at anchor, or until it is carried away by storms. The stench of the dead shark is so intolerable that it cannot be taken on board, but the reason for keeping it alongside is the fear that if the live ones were allowed to glut themselves on their dead comrades, they would no longer take the bait so readily; for they are so voracious that often only a portion of the shark caught on the hook reaches the surface, the others having partly devoured the wounded monster on his passage upwards. So firm are the fishermen on the west coast in this belief that they have petitioned the Legislature to enforce by law the keeping of the carcasses alongside as long as the fishing lasts. This opinion, however, is not shared by all the shark-fishers, and is open to dispute.

The value of a carcass on shore is about 7s. 6d. The flesh is sold to the peasants, who bury it in the ground for two or three weeks, and then disinter it, wash it, and cut it up into strips and hang it up in the drying-house. After one year's drying it is considered fit for food. The flesh has then assumed a clear reddish yellow colour, which gives it something of the appearance of salmon, so far as the eye is concerned, but certainly not the nose, for its presence in a room is very perceptible. Ten year old shark's flesh is considered a delicacy by native connoisseurs.

The skin is stretched out on the ground by means of wooden pegs, and, when dry, is used for shoe leather. It is much cheaper than either seal or lamb skin, but is neither strong nor durable. The gall is used instead of soap.

An ordinary moderate-sized shark gives two-thirds of a barrel of oil. Three barrels of liver give, on an average, two barrels of oil (about 140 quarts to the barrel). The oil is extracted by heat in iron vessels. The first boiling gives the light train oil; the second, the common or dark oil. The appliances used by the natives are very primitive, and leave much room for improvement, both as regards quantity of oil obtained and economy of fuel and labour.

A vessel of the size I have described, with a crew sufficient to work four lines, will bring home from 100 to 250 barrels of liver as the produce of three or four months' fishings. The latter figure is considered an excellent result. In June, this year, a schooner and a cutter from Isefjord fished together 145 barrels of liver; but fourteen days earlier two small yachts from Faxefjord fished 126 barrels in a shorter time.

In the winter, when the weather is calm, the Icelanders often put out to sea in their small open boats, and fish for sharks in 80 to 100 fathoms water; and, if fortunate, they can, in a couple of days, get 15 barrels of liver per boat.

The value of a barrel of liver varies between 37s. and 50s., whereas the oil fetches from 55s. to 125s. per barrel. The chief markets for it are Sweden and Germany, where it is largely used in the tanneries. Before the introduction of gas, the city of Copenhagen was lighted by Iceland train oil.

The number of Danish and native vessels engaged in the shark fishery cannot be ascertained with accuracy, owing to the general incompleteness of the statistics relating to the fisheries and commercial matters of Iceland. Their number, however, was, I believe, in 1865, as follows:—Danish vessels, 12; Iceland vessels, 61; or a total of 73.

From a number of the Iceland paper, "Nordanfari," published at Akureyri, which has come into my possession, I perceive that in 1864 26 native vessels and 6 open boats, from the north district, engaged in the shark fishery, and the result of their fishings was 2.573 barrels of oil, valued at £9,200.

Considering the smallness of these vessels, the few hands employed, and the comparative inexpensiveness of the implements and appliances used, this result must be looked upon as very lucrative; and it is a wonder that such an easy and profitable fishery should not have attracted the attention of foreigners.

The Norwegians, as far as I know, are the only strangers who have made any attempt to turn this natural and easy source of profit to account; but as they have recently begun to develop with advantage the good fishery on their own northern shores, they have ceased to visit the island. This island has many good summer and winter harbours; and any British speculator who may be tempted to try his fortune in this direction will find greater facilities for doing so than would appear at first sight to be present.

*Whale Fishery.*—The whale fishery, which in former times was carried on to a considerable extent all round the island, ceased towards the middle of the last century, probably because newer and better stocked fishing grounds were discovered. The long period of repose these marine monsters have enjoyed appears to have caused them to increase abundantly; and on sailing round the island one is struck by the large numbers of whales seen tossing themselves about in the undisturbed possession of the waters in all directions, and the thought involuntarily occurs that they might be turned to some profitable account. The natives state that there are not less than eleven different kinds of species of the *Balæna* inhabiting the Iceland waters. Of these, however, I suspect that many are of the *Delphinus* class. The following are the names of the four kinds at present known to the natives, and formerly fished round the island:—

*Balæna mysticetus*, or Greenland whale, found on the north coast.

*Balæna boops*, or long finned whale, containing the best and largest quantity of oil.

*Balæna physalus*, or herring whale, containing less blubber than the preceding ones.

*Balæna rostrata*, the smallest of the four, and found frequently far up in the firths or fjords of the island, where in former times they were captured in large numbers, especially on the north-west coast.

As previously stated, however, whale-fishing had for upwards of a century been almost entirely abandoned until about five years ago, when an enterprising American visited the island and commenced whale-fishing on the east coast, where he has now established himself at Seydisfjord, in company with his four brothers.

He at first fished from a small sailing vessel, but last year procured from England a small screw steamer of about 40 tons burden, in which, in fair weather, he puts out to sea in search of the fish, having a large whaling boat in tow.

His method is so far peculiar, that it may merit mention. The whale is struck by means of a harpoon shot from a sort of rocket apparatus; the handle or stock is charged with some detonating compound, which explodes as the weapon enters the fish; the explosive force is sufficient to shiver the harpoon in pieces in the creature's inside, and send the splinters to all parts of its body.

This destructive missile is the American's own invention, and has been patented by him, and it is stated to have the advantage of killing the whale almost instantly; and, by causing the generation of gas in its inside, prevents the sinking of the carcase. How far experience justifies these statements, I am unable to say. He had, it appears, counted upon being able to approach the whales in his steamer near enough to take aim; but they invariably avoid it; and it has been found necessary to shoot them from the boat. In consequence of this failure, he has decided upon procuring a larger steamer, capable of hoisting two boats alongside, and of keeping the sea a longer time than the present one will allow of.

When the whale is killed, a rope is fastened to the harpoon, and it

is towed to land; if it sinks on the road, the rope, which is a very long one, is marked with a buoy bearing the owner's name, and it is later searched for, hauled up, and landed. If it is washed on shore, the owner's mark, according to the law of the island, gives him the right of proprietorship, after deduction of strand dues.

The carcass is cut up on the strand, and the blubber and bones at once crushed and boiled down for the oil; the belly, which contains no blubber, is sold to the natives for food under the name of "kenge," and finds a good sale; the whalebones are sent to England, where they appear to be used for making Prussian blue; and the American has a project for pressing the flesh and shipping it to England for feeding dogs and pigs.

The Iceland whale gives generally from 50 to 100 barrels of oil each, and, when tolerably successful, this fishery is a very lucrative one. Up to the month of August last year, the American had landed 13 out of 30 whales shot at with his patent harpoon during that year. His total catch for that same year was 25 whales, which gave an average of 100 barrels of oil per whale.

His fishings have, I believe, been confined to Seydisfjord and the adjacent waters; but, as there are numerous whales off many other parts of the island, especially in Faxebay and Isefjord, it is to be presumed that the example of this enterprising person will soon find imitators.

*Eider Duck.*—The Eider Duck is important from its supplying a valuable export as well as a nutritive article of food, therefore a few words concerning it may not be out of place in this report.

This aquatic bird is found in great numbers on the coast; early in June it lands on the numerous small holmes or islets in the bays and fjords, where it lays its eggs after lining its nest with the down plucked from its own body. As this bird is protected from molestation by custom and severe laws, it has become tame, and always repairs to the same spots to hatch its young.

As soon as the eggs are laid, the owners of the hatching grounds rob the nests of the down and a part of the eggs, both of which the poor bird replaces a second and a third time, when she is left in peace to complete the process of incubation, but with her body completely denuded of down. This method of procuring it is had recourse to because the down of the dead bird loses its elasticity, and is of comparatively little value.

The hen bird gives eight to nine ounces of down to a nest; but, when cleansed, this weight is diminished by half. The value of the uncleaned down is about 8s. a pound, and the cleansed down about 19s. the pound. The annual produce is about 6,000 pounds weight of down, valued at about £5,000.

Sometimes one small holm will give its owner an annual income of £150, and such is the care taken of these useful birds that, during the hatching season, no guns are allowed to be fired in their vicinity, and foreign vessels arriving are forbidden to fire salutes for the same reason.

THE QUEEN ADELAIDE NAVAL FUND,

*For the relief of Orphan Daughters of Naval and Marine Officers.*

IF there be any subject more grateful than another to Christian feelings in the editing of these pages, it is that of pleading for the destitute! Yes; the destitute family descendants of our departed Naval Officers, the cases of which orphans (as they are left) it is the object of the Queen Adelaide Naval Fund to relieve. And that Fund does relieve them as far as it is able. But after extending its scanty means to them, it is compelled from want of funds to turn aside from many which it cannot reach.

It is a painful reflection that some officers who have served the State long and well, find themselves unable to leave their families in a condition of independence, thus obliging them to have recourse to pursuits to obtain their living far beneath the condition in life to which they were born, and even these failing, are glad to accept the hand of charity which may happily be extended to them.

We have already quoted some cases relieved by the Queen Adelaide Naval Fund, and here are some others from the last report of 1869.

No. 2.—\* \* \*, two daughters of a Purser, R.N., aged 63 and 51. Have no relations. Gain a precarious living by needlework.

No. 19.—\* \* \*, daughter of a Master, R.N., aged 32, compelled to leave her situation as a milliner from small pox, and become dependent on her mother, *who has only her widow's pension to support herself and five other daughters.*

No. 40.—\* \* \*, two daughters of a CAPTAIN, R.N., aged 24 and 22; one in a very bad state of health; the mother dead; one brother married unable to assist them.

No. 55.—\* \* \*, two daughters of a Paymaster, R.N., aged 45 and 43; mother dead. Only source of income £10 a year from the Compassionate Fund. Unable from ill health to gain a livelihood.

No. 72.—\* \* \*, daughter of a *Commander*, R.N., aged 25. Lives with mother. Has five sisters, two of them invalids, all dependent on their mother, *whose only income* is her widow's pension of £60 a year.

No. 75.—\* \* \*, daughter of a Lieutenant, R.N., aged 43. Compelled to give up her employment as a Governess from incurable deafness, and spinal complaint. *Income* £12 a year, from the Compassionate list.

Such are a few of the cases we find in the present Annual Report of the Committee of the Queen Adelaide Naval Fund, who ask for assistance in their good work of relief from their countrymen, and we appeal to those who are able to assist them, that they should not ask in vain. The Naval profession has its attractions of honour, and glittering services. These may be met by the State, but the State can not recognise cases of the above nature. No! And it is too true that behind all the glitter and dazzling tinsel which is commonly displayed, there are cases of sorrow and suffering at home from sheer want of the means of living—and these too often are unhappily accompanied by sickness, all tending to helpless indigence!

Such are the cases which the Queen Adelaide Fund endeavours to

relieve. It does so as far as lies in its power. But we ask of our readers to strengthen that power; for the sake of the Navy to assist that Fund, and to help the hand that is endeavouring to mitigate the sad affliction of want, which it finds among the descendants of naval officers, left struggling through life. Our Advertisement Sheet will shew the way to do so.

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Dear Sir,—When I wrote to you respecting the proposal that the recipients of relief from the Queen Adelaide Naval Fund being *above seventy years of age* should be treated as annuitants at £12 or £14 per annum, so as to assure a stipend to such necessitous ladies of £26, I felt the most entire conviction that the proposition would have been embodied in the minutes of our meeting and have gone forward to the Gentlemen's Committee which I believe assembled on the following day. I cannot help thinking that such was the impression of most of the Members of the Ladies' Committee present, for *all* assuredly concurred in opinion as to the desirability of carrying out the plan. That it did not appear must have been the result of some oversight, some unintentional omission which may hereafter be explained.

I regret of course, any apparently premature action in the matter, but after all, the promulgation of the idea amongst the friends of the charity may not be without beneficial results.

I remain, Dear Sir, Yours faithfully and obliged,

November 15th, 1869.

S. E. MILES.

To the Editor of the *Nautical Magazine*.

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#### RE-APPEARANCE AND DESTRUCTION OF LANUN PIRATES

*On the Coast of Borneo, off the Sarawak Territory.*

MR. CROOKSHANK, in the absence of Rajah Brooke, administering the Government of Sarawak, received a letter from Mr. Sinclair, the assistant Resident at Bintulu (the furthest of the out-stations) to the effect that Lanun pirates had attacked some boats on that part of the coast. Mr. Crookshank, Mr. Skelton, and Dr. Houghton, together with all the fighting men that could be mustered at once, left Sarawak in the steam gunboat *Heartsease*, leaving instructions for the mail steamer *Royalist* (which was in the river at the time) to follow in a few hours.

As the strength of the piratical force was not known, it was thought probable that they might divide their forces, and half keep out at sea, so it was arranged that the attacking party should follow the same course, and the *Royalist* was ordered to keep in deep water eight or ten miles off shore, while Mr. Crookshank in the *Heartsease* crept along the shore, and the two steamers were to rendezvous the next morning at the mouth of the river Redjang. When just outside Moratbas, Mr. Crookshank met H.B.M.'s gunboat *Starling*, under Lieutenant Commander Crowdy. He boarded her and found she had

come from Labuan in search of these very pirates, but having expended all her coal was unable to proceed. It is very doubtful whether the *Starling* would have a chance of capturing the pirates, as she only steams about five-and-a-half knots, which the pirates can pull easily—she also uses coal, so her smoke is seen miles off, and the Lanuns then pull into a creek out of her way. The Sarawak steamers use one sort of wood which gives hardly any smoke, and that little quite white, in fact the *Starling* did not know the *Heartsease* was a steamer (she was end on) until she was quite close, while the *Starling's* smoke was seen by the *Heartsease* two hours before.

Mr. Crookshank supplied the *Starling* with wood, and the three steamers met the next morning off the Redjang, and finding that nothing had been seen of the pirates in that direction, it was decided to start again up the coast for Muka. The *Starling* steamed so slowly that Mr. Crookshank decided on going forward alone, and the *Heartsease* reached Muka eighteen hours before her. Here was obtained the first intelligence of the pirates, and that there were only two boats and a sampan, which had started on their way back again, so he did not wait for the *Starling*, but set out at once for Bintulu, where he received the information that the Bintulu people had the day before caught sight of the Lanuns going past their river.

Mr. Sinclair, who in the absence of Mr. Houghton was in command of Bintulu fort, had immediately manned and armed five boats with about a hundred men, and had chased and sunk the pirate prows off Tanjong Kulorong. Nine pirates (the whole number) were killed, and two boys taken prisoners (one badly wounded). The captives which had been taken by the pirates were at once released, but one was unfortunately killed in the fight, and one woman wounded, who was afterwards killed by the pirates. None of the plunder was recovered, as unfortunately the Bintulu men all boarded on one side of the prahu which heeled her over and she sank. The boat was about forty-two feet long, and eight feet beam, and was armed with spears, muskets, swords, and a large quantity of pebbles. She came from Tawie Tawi, and from the same Campong as some of those which were destroyed by the *Rainbow* seven years ago.

It shows the pluck and daring of the men, for eleven of them to come down and beard the whole population of the coast; and it is astonishing to notice the mischief caused by this one boat, which between Bintulu and Tanjong Sirik alone, is known to have destroyed more than ten boats and murdered a great portion of their crews. No Lanuns have been seen or even heard of since the fleet was destroyed off Kulorong by the *Rainbow*, and such has been the confidence of the people that they have not even armed their boats. It is a curious fact that Mr. Sinclair destroyed the prahu on almost the same spot where the *Rainbow* in 1862 ran down the boats one after another, and taught them such a lesson as was hoped would put an end to their piratical predation on the peaceful trade of Borneo. These men are the most determined ruffians of these seas, and live scattered about on the islands off the northern portion of Borneo, each village turning out its



one or two boats to follow the expedition. These voyages are made annually in moderate sized boats, and running down to the southward on the eastern side of Borneo in the north-east monsoon, they return home in the south-west, thus making a fair wind round the island, and describing a circuit of 2000 miles in about six months. They make their own charts, marked with the different islands and villages upon their course, and where they are likely to meet steamers there is a mark of smoke, as a caution not to approach that quarter. Their principal aim is to obtain as many captives as possible, whom they torture, gamble away, and sell. Both the Dutch and Spanish authorities are continually taking measures to drive them clear of their possessions, and in 1863 a squadron of steamers was sent from China to attack and root them out,—but no sooner have the steamers left, and they have been undisturbed for a few years, than they start again and do a vast deal of injury to the commerce of these countries, before slow old John Bull disturbs himself to attack them again.

The two boys taken prisoners were examined in Sarawak, and deposed that when they left Tawie Tawi towards the end of March, ten prahus were being fitted out to go round to Borneo, going by the East coast by Coti first. Afterwards the boys stated that the prahu had left Tawie Tawi three months ago, under command of the brother of Datu Mont, who commanded the fleet destroyed by the *Rainbow*. The solitary prahu whose fate is above related, captured over ten trading boats, killed seven men, and took nine prisoners.

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#### LOSS OF THE AUSTRALIAN SHIP ROYAL STANDARD.

ADVICES from Rio Janeiro communicate the intelligence of the total loss of the *Royal Standard* on the Brazilian coast, while on her outward voyage from London to Melbourne. Many of her passengers, chiefly women, were drowned, and several of the crew were missing. The *Royal Standard* was originally built as a steamer of nearly 3,000 tons measurement, and made several successful voyages between Liverpool and Australia. Recently she has been converted into a sailing ship, and was owned by Messrs. Wilson and Co., merchants, of Liverpool. She sailed from Gravesend on her present voyage on the 12th of August, with a full general cargo, and about twenty-eight chief and second cabin passengers—the number of people in all on board, including officers and crew, being about eighty.

Lloyd's agent at Rio Janeiro forwards the following details of the catastrophe :—

“ Rio Janeiro, October 16th.

“ Having this morning returned with the passengers saved from the cutter of the British ship *Royal Standard*, Captain Clarke, from London to Melbourne, wrecked on the sand bank running from twenty to thirty-five miles off Cape St. Thome, about 151 miles distant by water from this port, and feeling assured that a painful interest will be excited in

London when the news arrives there, I address you these lines to furnish you with all detailed information I have obtained on the melancholy subject. On the wreck being made known here at four p. m. on the 12th instant, I chartered the steamer *Competition*, and proceeded at once to the spot.

“The *Royal Standard* was dismantled on the 30th September. She was immediately put under jurymasts, and Mr. Bailey, the chief officer, informed me she steered very well under this temporary aid. The captain's intention was to bring the vessel into Rio Janeiro, but just before daylight on Sunday, the 10th instant, and when they supposed themselves far from land the ship suddenly stranded on the sand-bank above named. After daylight the captain, on seeing the low long coast of sand about five or six miles off called the Furago, decided on sending the women and children ashore in the only boat they had left fit for the purpose (the cutter). The other boats but one were stove in when the ship was dismantled, and in this cutter about ten a. m. left the ship twenty-three persons, in charge of Mr. Bailey, the chief mate, namely:—Mrs. Dummett, five daughters, and one son, Harry; Mr., Mrs., and Miss Lawrence; Miss Welton, Miss Stoddart, Mrs. Miller, Mrs. Rees, Mrs. Northcote, Dr. Cortes, James Young, the sail maker, and five seamen. All they took with them on leaving the ship was a tin of small biscuits, but no water, presuming they would land in one or two hours, but on approaching the shore they discovered such a line of breakers that they dare not attempt a landing till driven to desperation on Monday, the 11th instant, at daybreak, by hunger and thirst, and the horrors of their situation, the currents, sea, and wind baffling all attempts to regain the ship. On their beaching the boat Mrs. Dummitt and her five daughters, and Mrs. Lawrence, and Mrs. Stoddart were drowned.

“After much toil and suffering over about fifteen miles of arid sand, the remainder reached a miserable negro hut, and by the negro on the following day taken to the estate and residence of the Viscountess Azarnamo, through whose real Samaritan hospitality and kind attention they reached Macalie on the morning of the 13th. Captain Clarke, wife and child, and twenty-one of the passengers and crew were taken off the wreck by the Brazilian brigantine *Camponeza*, and another portion of the crew and passengers found their way to Rio Janeiro on the Portuguese ship *Amelia*, whose Captain deserved great credit as he ordered a second attempt to rescue those still on the wreck, and sent his long boat and nine Portuguese, two of the crew of the *Royal Standard* volunteering.

“But this boat did not succeed in getting alongside the wreck when the captain of the *Amelia* was forced by his passengers to haul away from the edge of the bank, consequently had to abandon not only the wreck, but his own men in the boat. Fortunately the boat afterwards effected a safe landing on the coast some fifteen miles south of Macalie, which they gained on the 14th inst. The remainder of the crew and passengers, twelve in number, left the wreck on a raft, and have not since been heard of. I have despatched the *Competition* (steam tug)

to go in search of her along the coast. Her Majesty's ship *Speedwell*, Captain Perry, left Rio Janeiro for the scene of the wreck immediately on the receipt of the news, and took off the shipwrecked people from the Brazilian brigantine, as well as five seamen from the stranded cutter. The *Royal Standard*, when last seen, had broken in two, the bow was sunk, and the stern was fast setting down in the sands in about twenty-three feet of water. Nothing whatever belonging to her has been saved."

A further account says :—

The Brazilian mail steamer *City of Limerick*, which has arrived at Falmouth, brought home some of the passengers and crew belonging to the *Royal Standard*, who, after the ship stranded, left her on a raft, and were supposed to have been lost. The *Royal Standard*, it will be remembered, left London on the 12th of August for Melbourne, with passengers and a general cargo. She proceeded all well until the 30th September, when being caught in a sudden squall she became dismasted, and some of the boats were completely destroyed. The crew at once set to work to clear away the wreck, and the ship was put under jury masts and steered towards Rio Janeiro. Her course was well kept up to Sunday, the 16th, when just before daylight she suddenly stranded on the sand bank off Cape St. Thome, and about 150 miles distant by water from Rio Janeiro.

About mid-day, when the weather moderated, the first mate, five seamen, and all the lady passengers left in one of the two remaining boats, with the view of reaching the land, and ultimately the boat was beached, but with the loss of seven of the women. Afterwards the Portuguese barque *Amelia* hove in sight, and Captain Bazitio bore down near the wreck and picked up the second boat, containing four of the *Royal Standard's* crew. He then sent his own boat back, but the men were unable to come near enough to be of service to the remainder of the crew on board the stranded vessel. Captain Bazitio seeing that he could render no further aid decided to go to Rio Janeiro for the purpose of getting assistance. Captain Clarke and the remaining passengers and crew kept up their spirits for a day or two, when seeing nothing approaching they became anxious.

On the Monday and Tuesday they had made three rafts, one of which broke away during Tuesday night. On the Wednesday, the third day after having been left alone on the wreck, as no assistance arrived, the men made up their minds to take to the rafts and try to land, or hoping to fall in with a passing vessel. The timbers of the raft, however, would not bear the whole of the men, twenty-one in all, and some of them determined to remain by the ship another night, and see if assistance would arrive. Twelve, however, decided to take their chance on the raft; these were W. Bastard, of Slapton, near Dartmouth, passenger; R. Bastard, his brother, passenger; C. Wilkinson, Hampshire, passenger; F. Purcell, carpenter's mate; James Anderson, cook; Durrett, Reed, Thomson, Davidson, Slater, Rice (a stowaway), seamen; and Davey, an apprentice. W. Bastard, it appears, was returning to Australia, where he had in former years

been a successful sheep farmer, and he had with him two sheep dogs, which he managed to get on the raft. The animals were made fast to one of the timbers, but were soon after washed off by the sea. Bastard and his brother, however, went to their rescue, and with great difficulty got them again on the raft.

When the men left the ship they took with them between 20lbs. and 30lbs. of biscuit in a tin case, and having a fair wind they made sail with blankets, and hoped to reach the land, which was only about ten miles distant. They were within four miles of the shore, when the wind suddenly chopped round to the opposite direction, and the raft was taken out to sea. Night came on, and the men feared the worst for their safety. The angry waves drove them hither and thither; the sail, of course, had been taken in to endeavour to check the raft's progress to seaward. Some of the men, to prevent their being washed off, lashed themselves with a rope to the timbers, and others held on with their hands. All night long the castaways were exposed to a cold drenching rain, with heavy seas occasionally breaking over them, and anxiously did they wait the return of morn, and soon after dawn the almost exhausted men saw four or five coasting vessels on the horizon, and one of them, a Brazilian schooner, making out the raft, bore down towards it. As she came near she threw out ropes, but the men on the raft failed to catch them. At length she dropped anchor, communication was established, and the twelve men and the two sheep dogs were taken on board. The rescued seamen agree that had they been exposed another night they must have perished, as at the time they were rescued the raft was fast breaking up, and sharks were following in their wake ready to devour them. The schooner, after taking off the men, steered to Iaponna, a small port not far distant, and there the shipwrecked crew were landed. They were afterwards taken on to Rio Janeiro, and subsequently brought home in the mail steamer. The party who stuck by the vessel, including Captain Clarke, his wife, child, and servant; Rees, Miller, Walker, and Fitzgerald, passengers; and Giles, Foster, Paynter, Heydon, Taylor, and Middleton, were taken off the wreck by a vessel that came to their assistance.

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#### ROYAL NATIONAL LIFE-BOAT INSTITUTION.

A meeting of this institution was held on Thursday, November 4th, at its house, John Street, Adelphi—Mr. Thomas Chapman, V.P., F.R.S., in the chair. There were also present—Sir Edward Perrott, Bart., Mr. W. H. Harton, Colonel Palmer, Mr. John Griffiths, Captain J. R. Ward, R.N., and Mr. Richard Lewis. The minutes of the previous meeting having been read, the silver medal of the society, a copy of the vote inscribed on vellum, and £3 were granted to Thomas Dobson, the coxswain of the Donna Nook life-boat, *North Briton*, and £62 10s. to pay the expenses of the boat in going off several times on the 19th

and 28th October, in terrific weather, and saving the crews, consisting of 45 men, of the steam whaler, *Diana* of Hull, and barque *Bartolomeo Cerruti*, of Genoa, which were totally wrecked off Donna Nook.

On the same days the crews, consisting of 41 persons, of six other vessels wrecked at Donna Nook, were saved by the exertions of persons on shore aided by horses; and further rewards to the amount of £13 19s. were voted for those services.

The thanks of the institution, inscribed on vellum, were also granted to Mr. William Robinson, its local honorary secretary, for his zealous and able efforts at Donna Nook in directing the operations to rescue the shipwrecked men on the first-named day.

Thanks were also voted to Captain Elyard, the honorary secretary of the Broadstairs branch; and £16 to the crew of that life-boat, the *Samuel Morrison Collins*, for going off in the boat on the 19th October, and saving under very perilous circumstances 13 of the crew of the ship *Frank Shaw*, of North Shields, which was wrecked on the Goodwin Sands during a strong northerly gale. The life-boat men, including local subscriptions, had received about £3 10s. each, or £50 in all, for their services on that occasion. The Ramsgate life-boat, *Bradford*, assisted in the performance of the last named service, and brought ashore another of the shipwrecked men.

Rewards to the amount of £310 15s. were also voted to the crews of 29 other life-boats of the Society for important services during the recent heavy storms. Among these may be stated briefly the following:—The *Cotton Sheppard* life-boat at Porthdinllaen brought ashore three men from the stranded brigantine *Gleaner*, of Carnarvon. The life-boat *Caroline*, at North Berwick, took off the crew of six men of the distressed schooner *Astrea*, of Königsberg. The Commercial Travellers' life-boat, at Castletown, Isle of Man, brought ashore the crew of two men of the endangered smack *Amelia*, of that port. The Birmingham No. 1 life-boat, at Sutton, Lincolnshire, saved six persons from the billyboy *Swan*, of Hull; and the Birmingham No. 2 life-boat, at *Caistor*, Norfolk, assisted into harbour the barque *Alma*, of Malta, and her crew, which vessel was in danger of going on the West Scroby Sands. The life-boat at Moeffe, Anglesea, rescued the only survivor of the crew of the wrecked schooner *Gipsy King*, of Glasgow; and the life-boat at Aberdovey brought the disabled smack *John James*, of Chester, and her crew safely to port. The Duncan life-boat at Sherringham saved the crew of three men from the schooner *Trusty*, of Boston. The New Brighton tubular life-boat *Willie and Arthur* rescued one man from the wreck of the schooner *Elephant*, of Ulverstone. The Ramsgate life-boat *Bradford* and steam-tug *Aid* brought the barque *Emile*, of Swinemunde, and her crew into harbour. The *Brightwell* life-boat at Blakeney saved the crews, consisting of 15 men, from the brig *John and Mary*, of Shields, and the brig *Ravensworth*, of Hartlepool. The Ilfracombe life-boat *Broadwater* assisted to rescue from destruction the sloop *Ann Elizabeth*, of Barnstaple, and brigantine *Commodore*, of Waterford, and their crews. The life-boat *Havelock*, at Fraserburgh, saved the crew of two men of the *Ketch Heckler*, of

Cullen. The Scarborough life-boat brought three fishing cibles and their crews safely into harbour. The *Sir Edward Perrott* life-boat, at Fishguard, saved the crews, numbering six men, from the schooner *Two Sisters*, of Aberystwyth, and smack *David*, of Cardigan. The *Benjamin Bond Cabbell* life-boat, at Cromer, with the aid of another boat, took the disabled ship *William Frothingham*, of New York, and her crew into Yarmouth harbour; and the life-boat *Polly*, at Thurso, took off the crew of seven men from the brig *Supply*, of Stornaway.

It may be mentioned that during the present year the boats of the institution have saved 598 lives, besides contributing to the rescue of 21 vessels from destruction.

The silver medal of the institution, a copy of the vote inscribed on vellum, and £1 were voted to Mr. John Bumby, chief officer of coast-guard at Clovelly, and £9 to his crew, for putting off, at much risk, in a boat and bringing safely to shore, a long-boat-containing the crew of 12 men and a passenger of the barque *Odone*, of Genoa, which was wrecked at Portledge Mouth in a gale and heavy sea on the 12th September.

Various other rewards were likewise granted to the crews of the different shore boats for saving life from wrecks on our coasts, and payments to the amount of nearly £2,400 were ordered to be made on various life-boat establishments.

An anonymous donation of £1,000 had been forwarded to the institution to defray the cost of a life-boat, to be called the *Hope*, for the Isle of Arran, in Scotland, the remainder of the amount being for the general life-boats' repair fund.

It was reported that Mr. William Phillips, of Royal Exchange-buildings, had given the Society £100, through its deputy-chairman, Mr. Thomas Chapman, F.R.S.

The Rev. F. W. Gray had also sent a donation of £100, through Vice-Admiral Sir W. H. Hall, K.C.B., a member of the committee of the institution. A legacy of £250 had also been received from the executors of the late Mr. Thomas Clayton, and another of £90 from the executors of the late Mr. R. Brown, through Mr. H. Taylor, the treasurer of the Newcastle, Tynemouth, and Cullercoats branch.

New life-boats had recently been forwarded by the Society to Abersoch, North Wales, and to Alderney. The Lords Commissioners of the Admiralty had considerably allowed Her Majesty's steamer *Seamew* to tow the latter boat to her station from Weymouth. It was decided to renovate completely the life-boat establishment at Ardrossan, N.B.

By the deaths of the Earl of Derby and the Marquis of Westminster the Life-boat Institution has lost warm and liberal friends. The Earl of Derby was a vice-president of the Society, and the Marquis of Westminster seemed to take pleasure in sending it occasionally munificent donations. Votes of condolence were passed to the families of each of the deceased noblemen. Reports were read from the inspector and the assistant-inspector of life-boats to the Society, on their recent visits to different life-boat stations, on which the proceedings terminated.

## Nautical Notices.

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

### PARTICULARS OF LIGHTS RECENTLY ESTABLISHED.

(Continued from page 608.)

Name.	Place.	Position.	F. or R.	Ht. in Ft.	Dist seen Mls	[Remarks, etc. Bearings Magnetic.]
81. Lochandail	Islay, Scotland	Duna Point	F.	50	12	Est. 15th November, 1869. See Note 81.
82. Grace Island	Newfoundland	Conception Bay	R.	...	...	Est. 30th Nov., 1869. Changed. See Note 82.
Goatzacoalcos River	Mexico	Ent. W. side	F.	...	12	
83. Scroby Elbow	England	Yarmouth R.	...	...	...	Alteration. See Note 83.
Harwich Har.	England	... ..	...	...	...	Alterations. See Note 83a.
84. Bosphorus	Bl. Sea Ent.	... ..	...	...	...	Position of Lt. Vessel. See Note 84.
85. Great Bass R	Ceylon, S.E. Coast	Light vessel tem.	R.	...	...	In 12 fathoms N.N.E. 1 mile from rock. See Note 85.
86. Portland Har.	England	S. Coast	...	...	...	See Note 86 for position of Wreck.
87. Alexandria	Egypt	Alteration of Light	R.	...	...	Changed on 20th November from fixed.

F. Fixed. F.f. Fixed and Flashing. R. Revolving. I. Intermittent. Est. Established.

No. 81.—The light will be a *fixed* light, *white* between the bearings N.E. by E. to about N. by E.  $\frac{1}{4}$  E.; *red* from about N. by E.  $\frac{1}{4}$  E. to about W.  $\frac{1}{4}$  N.; and *white* from about W.  $\frac{1}{4}$  N. to S.W. by W.  $\frac{1}{4}$  W.; it will be elevated 50 feet above high water springs, and in clear weather should be seen from a distance of 12 miles.

No. 82.—The fixed white light will be changed to a *revolving* light showing *two white flashes* followed by *one red flash*, the interval between each flash being *thirty seconds*.

No. 83.—The Trinity House, London, has given Notice, that for better marking of the Scroby Elbow, Yarmouth Roads, a *bell buoy* is about to be substituted for the present beacon buoy; also that the dark shade of Winterton light will be extended from N.  $\frac{1}{4}$  W. to N.  $\frac{1}{2}$  W., and that of the red shade from Lowestoft low lighthouse, will be extended from S.S.W. to S. by W.  $\frac{3}{4}$  W. Both lights will then cut the Scroby Elbow bell buoy.

Also, that no further notice will be issued of these alterations, which will be effected at the earliest opportunity.

No. 83a.—**HARWICH AND APPROACHES.**—*Alterations in Buoys.*—Also, that a can buoy, painted *red and white in vertical stripes* and marked *Cork*

*sand* has been placed on the north end of the Cork sand, in  $3\frac{1}{2}$  fathoms, at low water springs, with the following marks and bearings,—

The Martello tower T, at the entrance of Woodbridge haven, its width open to the right of Ramsholt church, N.  $\frac{1}{4}$  E.; Harwich church open to the left of Landguard fort, N.W.  $\frac{1}{4}$  W.; Cork light-vessel, N.N.W.  $\frac{3}{4}$  W.  $1\frac{1}{2}$  miles; Cutler buoy, N.E.  $\frac{3}{4}$  N.,  $2\frac{1}{10}$  miles.

Also, that the *Guard* buoy at the entrance of the harbour, has been moved one cable to the north-westward, and now lies in  $2\frac{1}{2}$  fathoms at low water springs with the following marks and bearings,—

North end of the Redoubt, in line with the south end of Dovercourt terrace, S.W.; High beacon at Landguard, just open to the south of the low beacon, S.E.; North Shelf buoy, S.E.,  $2\frac{1}{4}$  cables.

In order to facilitate the approach to the anchorage off the town of Harwich and to leave a clear passage for steam vessels to the piers, a small dioptric light has been placed at the end of the North jetty, which shows a *red* light between the bearings E.  $\frac{1}{4}$  N. and E.N.E., and vessels are cautioned not to anchor in this red light, unless they are to the eastward of the red light which is shown from Landguard lighthouse, cutting the North Shelf buoy.

The northern limit of this exempted anchorage will be known in the day-time, by bringing Upper Dovercourt church open north of the Railway pier, bearing W.S.W.

[*All Bearings are Magnetic. Variation  $19\frac{1}{4}^{\circ}$  Westerly in 1869.*]

No. 84.—With reference to Notice to Mariners, No. 71, dated 21st September, 1869, respecting the light-vessel off the Black Sea entrance of the Bosphorus,—official information has been received that the correct position of the vessel is in 55 fathoms water, about 15 miles N.N.E.  $\frac{1}{4}$  E. from the entrance of the Bosphorus, in lat.  $41^{\circ} 27' 30''$  N., long.  $29^{\circ} 16' 30''$  East from Greenwich, from which position—

Roumeli lighthouse, bears S.W. by S. (southerly) 15 miles; Karabournou lighthouse, bears W.  $\frac{3}{4}$  S. (southerly) 26 miles; Shilee lighthouse, bears S.E.  $\frac{1}{2}$  S. (southerly) 24 miles.

No. 85.—The Trinity House, London, has given Notice, that from about the 15th day of March, 1870, during the time of building the lighthouse on the Great Basses rocks, off the South-east coast of Ceylon; a light-vessel will be placed in 12 fathoms water, about one mile N.N.E. from the rocks; and in order to distinguish the light exhibited from this vessel from that of the Little Basses, 20 miles distant (which shows a white flash every one and a half minutes), it will be a *red revolving* light, attaining its greatest brilliancy every *forty-five seconds*.

No. 86.—Notice is hereby given, that a wreck obstructing the Fairway approach to Portland harbour now lies in 11 fathoms water with the following bearings and distance,—

Portland Breakwater light, W.  $\frac{1}{4}$  S., nearly  $1\frac{1}{2}$  miles; Weymouth Church Spire, N.W.  $\frac{1}{4}$  N.; Mariners are accordingly cautioned.

! AFRICAN PILOT.—*South and East Coasts*.—Notice 2.—The following description of a shoal patch to the northward of the harbour of Darra Salaam, south of Zanzibar, is from Commander George L. Sulivan, of H.M.S. *Daphne*.

[*All Bearings are Magnetic. Variation  $10^{\circ} 10'$  Westerly in 1869.*]



This shoal which has 18 feet and 5 fathoms water round it, was discovered by H.M.S. *Daphne* while on her passage from Zanzibar to Darra Salaam. From the shoal Pinda island bears S.E., the inner Sindo island S.  $\frac{1}{2}$  E., and the centre of the red or East cliff of the entrance to the harbour of Darra Salaam, S. by W. distant  $4\frac{1}{2}$  miles.

Commander Sulivan gives the following directions for approaching Darra Salaam from the northward. Keep Sindo island well on the star-board bow until the centre of the East cliff (red) bears S. by W.  $\frac{3}{4}$  W., then steer for it on this bearing, which will lead to the buoys at the entrance; there should be nothing less than 5 fathoms on this line of bearing.

*Note.*—The island marked on the chart of this part of the coast as the South Goonja does not exist; what has been hitherto taken for this island is a part of the main land. There are thus only two Goonja islands.

BAY OF BENGAL.—*Mergui Archipelago.*—The following directions for the Pak Chan river have been received from Navigating Lieutenant James Harry, of H.M.S. *Spiteful*, Commander Mostyn, R.N. This officer also reports that in several places in the channel where 7 fathoms are shown in the survey of 1847, rocks are visible at low water 3 and 4 feet high.

[*All Bearings are Magnetic. Variation 2° 30' Easterly in 1869.*]

To enter the Pak Chan river vessels should coast Saddle island, to be recognized by two saddles (one on the north part of the island the other on the south, the latter being the higher), taking care to avoid the shoal water extending north-westward from the north end of Delisle island. When abreast of Tree island (small, and nearly awash, with one or two trees in the centre), steer to pass between Harry head (the northern point of Saddle island) and the *Spiteful* rock, rounding the head about  $1\frac{1}{2}$  cables distant, hauling to the eastward for Stainer rock (which like Tree island is low, with trees about its centre), this course will lead clear of the reef in mid-channel, S.S.W. of Mostyn island, over which the tide sets strong; when abeam of Stainer rock (bearing about S. by W. to S.S.W.) haul to the north-east, passing Dyke island about a cable distant, and when to the northward of the north-east point of Victoria island, the vessel will be clear of the dangers in the river between that and Malewan creek.

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## PACIFIC CURRENTS.

BOTTLE papers for the discovery of currents in the Pacific are few and far between; but we preserve the following found in the *Sydney Morning Herald* of 9th September last, to which we have added the annexed remarks.

### AN OCEAN MESSENGER.

*The John Wesley.*—The *Gladstone Observer* states, the following letter has been handed to us for publication by Mr. W. E. Hilliard:—“Monte Christo, 14th August, 1869.—My dear Sir,—Yesterday we were out at Cape Capricorn, in search of cattle, when little Tom picked up a glass bottle on the south side of the Cape about a mile, and the enclosed was in it. If published in the *Observer* it will

answer the purpose. The bottle was well corked, and the paper dry and clean—the dirt now on it is from the boy's pocket—Yours, etc., SAM'L. RICHARDSON."—[Paper enclosed.]—"Barkentine (qy. brigantine) *John Wesley*, from Ovalau and Kantavu, Fiji Islands, bound to Sydney. The *John Wesley* left Ovalau on the 27th of July, and Kantavu 30th July, 1868, under the command of Captain Mansell. Passengers—Rev. J. F. Horsley and Mrs. Horsley, three children and two native servants, Messrs. Franklin, Doig, Harrison, Garstin, Curtis, Cannon, Brewer, and Evans, in the saloon. Intermediate; Mr. and Mrs. Inglis and child, Mrs. Sumpter and child. Steerage; Mr. Stray. We have met with a succession of contrary winds since sighting Lord Howe's Island and the Pyramid, which we caught a glimpse of eight days since. This bottle is thrown overboard to test the current. We are now in latitude 33° 10' S., and longitude 155° 24', about 250 miles from Sydney Heads. Wind contrary. If this little messenger should be found, will any one picking it up kindly forward this paper to either the *Sydney Morning Herald* or the Melbourne *Argus*, for publication, or to Messrs. B. R. Matthews and Son, Lloyd's Agents, Melbourne. August 18th, 1868.—The only vessel spoken during the voyage has been the *Eliza*, of New Bedford, out 36 months, with 1800 barrels of oil on board; commanded by Captain Wetherall.—J. L. E."

This "Ocean Messenger" (not very common in the Pacific) bears its testimony to the well-known current setting to the northward along the Australian coast, recently alluded to by us in considering the loss of the barque *Douglas*. From the time it was committed to the sea (18th August, 1868), to the time it was found (14th August 1869), gives it a year of absence. In this interval it has drifted northward through nine degrees of latitude and about four degrees of longitude, in which it has no doubt obeyed the winds and waves. But when it was landed on Cape Capricorn does not appear, and unfrequented as that shore must be, possibly many days might elapse before it was found. However it will be satisfactory to the commander of the *John Wesley*, to know that his pains have not been thrown away, although they were long in producing a result.

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#### THE FIRST-RATE OF THE FUTURE.

WHEN Mr. Childers introduced the Navy Estimates, in March last, he informed the House of Commons that a new and most formidable class of fighting vessel would shortly be added to the British fleet. At that moment the designs were so far incomplete that the ships in question had not yet received their names, and could only be generally referred to. It was stated, however, that they would be ranked as the first-rates of the future, and would be not only of greater strength, but of greater power than any vessels of our own or any foreign navies. That pledge Mr. Childers redeemed on Friday last by laying the keel of the *Devastation* at Portsmouth, which ship, with her

consort, the *Thunderer*, to be built at Pembroke, will represent the first-class of our men-of-war, taking rank above the *Hercules*, the *Monarch*, and the *Captain*. So long as a fighting ship was expected, like an old-fashioned frigate, to perform all services alike, a failure at some point or other was unavoidable. A perfect ironclad was necessarily an imperfect sea boat. The best ship for fighting was not the best ship for sailing. Broadside vessels had their advantages, but they had this decisive drawback—that in rough weather a turret-ship would be able to send half-a-dozen of them to the bottom with perfect impunity to herself. Turret-ships had their disadvantages, but they had this decisive recommendation—that they were undoubtedly the most powerful men-of-war. In the end, as was to be expected, that essential qualification was recognized as paramount, and our naval architects, instead of attempting to render broadside ships impregnable, devoted their energies to making turret-ships seaworthy. Again, however, there was a dilemma. The genuine turret-vessel had no masts or sails; the result being that her guns could command every point of the horizon without impediment. But such a ship must rely entirely on steam propulsion, and in the event of her engines being disabled, or her coal falling short, what was to become of her? The true answer to this question was that it is impossible to obtain the advantage without the disadvantage; and the true moral is that, if we do not choose to compromise qualities, we must have a division of duties. That is the principle actually expressed in the new type of fighting ship now announced. The *Devastation* will be neither a cruiser nor a guardship—neither wholly intended for sea-going, nor wholly for coast service. Perhaps the best description of her would be to say that she is a floating battery “mobilized.” She will unite to a certain extent the ponderous strength of the *Glatton* with the fleetness and handiness of the *Warrior*. She will not be competent to go on a two years’ cruise, but she will be equal to a three weeks’ voyage. Though without masts or sails, she will carry coal enough to take her across the Atlantic and back. She could go to the Mediterranean, take her place in line-of-battle, and return to Spithead without any need of fresh coaling. In short, she is a ship built for fighting alone, but with engines so powerful and stowage for fuel so extraordinary that she could keep the sea as long, probably, as would be needful. The sides of the *Devastation* will be less than twice as thick as the *Warrior*’s, but they will actually, as regards resistance to shot, be seven times as strong. No vessel of any Navy will be so impenetrable, while at the same time, if the views of British artillerymen are well-founded, no ship will carry an armament of such prodigious power. The *Devastation* will have two turrets, and in each turret will be mounted two 30-ton guns, throwing shot of 600lb. weight. If it be now asked on what conditions of size, speed, and cost these results have been obtained, the answer is certainly satisfactory. It is, indeed, at this point that the most substantial, but at the same time the least obtrusive, improvements in Naval Architecture have gradually been effected. Careful study has enabled our builders so to economize space

and power that lightness and strength can now be combined in an incredible degree. Thus the new vessels, which are to carry such ponderous armour and such vast quantities of coal, will be only of 4,400 tons burden; whereas the tonnage of the *Warrior* and *Minotaur* class exceeds 6,000. Again, the *Warrior* cost at least £360,000 while the *Devastation* is to cost under £290,000. The *Achilles*, we may observe, an iron ship, built in a Government yard, cost nearly £460,000. Another economy is effected in the number of men. As there will be no work aloft in these new ships, a crew of 250 men, all told, will suffice, instead of 650, for the work of the vessel. Such, in brief, according to present ideas, is the first-rate of the future.—*Times*.

#### LAYING THE KEEL OF THE *Devastation*.

WOODEN ships having long since been condemned, and armour-plated broadsides being now, to say the least, on their trial, the commencement, in this dockyard, of a vessel on the turret system is an incident of importance. No ironclad having yet been built at Portsmouth, and the First Lord of the Admiralty having resolved to take advantage of his official inspection in order to be present at what is commonly regarded as the commencement of the first vessel of her class constructed in this yard, the ceremony excited some interest. The *Devastation*, which is being constructed in No. 8 dock, from the designs of Mr. Reed, the Comptroller of the Navy, and under the superintendence of Mr. Robinson, the Master-Shipwright, will be built of iron on the turret principle, be partially armour-plated, be of 4,400 tons, and carry four guns of 30 tons each. The length between her perpendiculars will be 285ft.; her length of keel for tonnage, 246ft. 3in.; her extreme breadth, 62ft. 3in.; and her breadth for tonnage, 58ft. She will be plated with three different thicknesses of armour, the sides being covered with 10in. armour, the breast-work being of 12in., and the turrets with 14in. plates. Her engines will be of 800 nominal horse-power, on the improved expansive plan, with surface condensers. The estimated depth of water forward will be 25ft. 9in.; and aft, 26ft. 6in. The estimated cost of her hull, exclusive of fittings, is £236,000. The *Devastation* will not be built on the principle of Captain Cowper Coles, but will be of the *Monitor* class, with two guns in each of her two turrets, having an all-round fire.

To witness the ceremony which took place, "laying the keel," a large assemblage surrounded the dock, which was decorated with flags, and at the entrance to which was a floral device with the motto "Success to the *Devastation*," surmounted with a crown. Shortly after eleven o'clock Mr. Childers, who was accompanied by Vice-Admiral Sir S. C. Dacres, K.C.B., Lieutenant-Colonel A. Clarke, R.E. (Director of Engineering and Architectural Works), Vice-Admiral Sir James Hope, G.C.B., Rear-Admiral Key, C.B., and other officers, descended to the dock, for the purpose of "laying the keel." That phrase, however, is by no means a correct representation of the work

which Mr. Childers had to perform. Five lengths of the main keel and two lengths of the vertical keel had already been laid, and were resting on blocks some 5ft. from the bottom of the dock. A red-hot inch-rivet was placed in one of the numerous holes, about amidships; and while two men were at work at the inch and a half counter sink beneath the plates, the First Lord seized the dolly, pressed the hammer on the head of the rivet for the purpose of steadying it, and having given a few gentle taps, the ceremony was completed.

#### FROM THE LAKES TO THE PACIFIC.

HAVING recently returned from a trip over the Pacific Railroad, with side journeys to the Rocky Mountains, the mining regions of Colorado, and Great Salt Lake City, perhaps some notes by the way may not be without interest to such of our readers as design making the trip, either for business or pleasure. And, first, we will premise that both the Union and Central Pacific Railroads are in as good travelling condition as any like thoroughfares in the country, and the journey can be made to the Pacific as safely and comfortably as by any route from this city to the Atlantic. The roads are substantially built, and well officered. If anything corroborative is needed, it is only necessary to state that the Hon. Charles G. Hammond, so long and favourably known among railroad men, is in charge as Superintendent of the Union Pacific, with able and experienced assistants of his own selection; while, to all Californians at least, nothing further need be said than that "Charley" Crocker and John Corning are the men at the helm of the Central Pacific.

The opportunities of getting a good "square meal" along the route are also excellent. In this line not much can fairly be expected in the uninhabited country through which a greater part of these roads are built; but with superior bread and butter, good coffee, antelope steaks, mountain trout, etc., and all served with a cleanliness that many eastern railway eating-houses might learn a lesson from, the most fastidious traveller need not go hungry even across "the great American desert."

The traveller at this season needs no other outfit (Sam Bowles to the contrary notwithstanding) than he would take to the seaboard or the White Mountains. Those who have sweltered through the canons and over the mountain tops of the Sierras, where the "perpetual snow" is represented by a few stray patches on distant peaks, leaving, like the properties at a Chinese theatre, a great deal to the imagination, will give this as their experience.

No more attractive route is open to the tourist than by the Pacific Road to the Pacific slope. The scenery along the line embraces the grand, the sublime, and the beautiful. To those in pursuit of health or pleasure, merely, we would especially commend a trip to Denver, distant 115 miles from the railroad, and thence to the mountains, by an excellent road and delightful drive of thirty-five miles. No more exhilarating or healthful atmosphere can anywhere be found, while the scenery is of surpassing beauty, the brooks filled with trout, and the

hills with gold and silver. Travellers will find a superior hotel in the American, Denver, and Beebe's, at Idaho City, in the mountains, where soda springs, hot and cold, bubble up in delightful proximity, a bath in which is most enjoyable.

To such as can divest themselves of the idea that they are charged with a special mission to confute the doctrines and confound the believers in "the Church of the Latter Day Saints," a trip to Great Salt Lake City, thirty or more miles by stage from Utah, the jumping-off place on the railroad, will prove most instructive and agreeable, if in nothing else than by seeing how, by patient toil and persevering industry, all obstacles can be overcome, and a desert be changed into a garden.

In short, Americans who contemplate a European journey, can find mountains that will dwarf the Alps in grandeur, and eclipse the Trosacks in beauty, at their own doors, while no other route combines as much of health, pleasure, and comfort as that now open to the Golden Gate.

#### THE SLAVE TRADE ON THE EAST COAST OF AFRICA.

H.M.S. *Nymph*, Captain Meara, arrived in Bombay harbour on the 26th October from Zanzibar and the East Coast of Africa. The *Nymph* sailed from Bombay on the 4th January, after the close of the Abyssinian expedition, and has since been slave cruising. She has been the most successful ship this season on the East Indian station, having captured nineteen dhows, and liberated 640 slaves. The dhows were mostly taken by the boats, but there was rather a severe action in cutting out one of them near Zanzibar. In the early morning of the 11th April, the news was brought that a dhow was embarking slaves. The first and second cutters, under the command of Sub-Lieutenants Clarke and Hodson, were accordingly ordered away, the Sultan having previously given permission to Captain Meara to take the dhow. The boats' crews boarded the dhow, and Mr. Clarke proceeded to take her in tow, upon which a volley of musketry was fired from the shore by the Arabs, which killed a seaman named Mitchell, and severely wounded Mr. Hodson, who was struck on the elbow with a bullet, which passed down his arm and out of the palm of his hand. On the boats' crews boarding the dhow most of the Arabs jumped overboard and swam ashore, but a man, supposed to be the captain, made an attempt to cut the cable forward, so as to allow of the vessel, which had a stern-fast, being hauled ashore. Mr. Clarke endeavoured to prevent this, and was immediately attacked by the man. Mr. Clarke had emptied his revolver, but wounded him with a sword cut on the shoulder, just as the Arab thrust his spear through Mr. Clarke's thigh. The fellow on doing this jumped overboard, but had scarcely swam a dozen strokes when he was shot by the seamen. By two o'clock the fighting was over, and the dhow and her slaves were alongside the *Nymph*. It is satisfactory to know that the Admiralty have marked their sense of the conduct of Mr. Clarke and Mr. Hodson by promoting them for gallantry. The *Nymph*, after coaling and provisioning, will probably follow the *Daphne* to Muscat.

## REWARDS FOR SAVING LIFE AT SEA.

“RENDER TO ALL THEIR DUE. \* \* HONOUR TO WHOM HONOUR.”

Captain.	Ship.	Reward.	Particulars of Services.
E. J. Bearman <i>a</i>	<i>Leopard</i>	Binocular Glass	Gallantry at wreck of the <i>Only Son</i> Boulogne, 8th December, 1868.
Joseph Maycock <i>a</i>	<i>Sisters</i> , of London	Telescope	For rescuing crew of <i>Volunteer</i> , 26th September, 1868.
J. Glass <i>a</i>	<i>Constance</i> , of Greenock	Telescope	For saving crew of the <i>Isabella Saunders</i> at Prince Edward Island, 28th April, 1869.
J. P. Anderson <i>a</i>	<i>Adept</i> , Chief Officer	Telescope	For rescuing crew of the <i>Americana</i> , on the 29th September, 1868.
J. Heaketh <i>e</i>	<i>British Queen</i>	Silver Medal	For saving two of crew of a Fishing Smack off Cape St. Vincent, 19th July, 1869.
J. Hawson <i>a</i>	<i>Carlos</i> , of Buenos Ayres	Gold Medal	For saving crew (31) of the <i>Treasure Trove</i> , of Liverpool, on 7th September, 1868.
Loftus <i>b</i>	<i>Peveril of the Peak</i>	Telescope	For saving crew of Havre brig <i>Gesina Margareta</i> , 28th September, 1868.
G. D. Taylor <i>d</i>	<i>Flying Fish</i> , of Leith	Telescope	For saving crew of the <i>Maria</i> , February, 1869.
A. D. Sarson <i>a</i>	<i>Bien</i>	Telescope	For saving crew of the <i>Prima Donna</i> , of Hull, 7th September, 1868.
Smith	<i>Worcester Training Ship</i>	Gold Chronometer	For saving Mr. W. H. Roberts and family from wreck of the Yacht <i>Bamba</i> . Reward given by owner of the Yacht.

*a* Presented by the British Government. *b* By the Emperor of the French. *c* By the South Holland Institution. *d* By King of Prussia. *e* By King of Portugal.

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TO CORRESPONDENTS.

CAPTAIN HALL's letter from the Mauritius in our next.

Pressure of matter has obliged us to suspend our Philippine Island papers for our next.

The plate of Captain Forbes's new Ship Rig was received too late for our last number, wherein it is mentioned.

END OF VOLUME XXXVIII.

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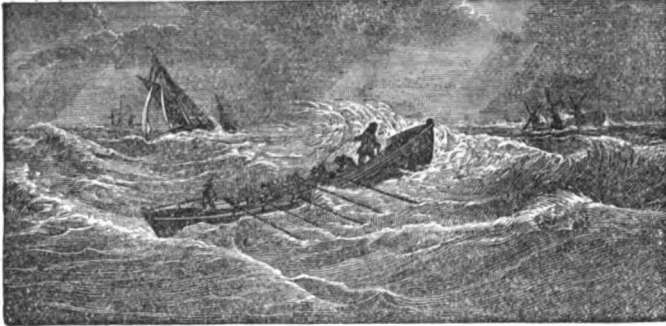
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Walmers.		Holyhead.		Wicklow.	
Kingsdowne.		Cemlyn.		Arklow.	
Dover.		Bull Bay.		Courtown.	
<b>65</b>		140 Moelfre.		Cabore.	
Dungeness.		Penmon.		Wexford, No. 1.	
<b>SUSSEX . . . . .</b>		<b>CARNARVONSHIRE . . . . .</b>		200 " No. 2.	
Rye.		Orme's Head.		Carnore.	
Winchelsea.				Duncannon.	
Hastings.				Tramore.	
Eastbourne.				Dungarvan.	
<b>70</b>				205 Ardmore.	
Newhaven.				Youghal.	
Brighton.				Ballycotton.	
				Queenstown.	
				Courtmacsherry.	
				210 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, 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 4s. each; 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."

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 IN THE USE  
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 AND TINS  
 6<sup>d</sup> 1<sup>s</sup> 2<sup>s</sup> 6<sup>d</sup> &  
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