



LXXV. Prospectus of a new system of beaconing

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I shall close this long letter, by observing that on casting my eye over the configurations of Jupiter's satellites for the month of January, I find the position of almost all of them to be erroneous. I am, sir,

Your obedient servant,

ASTRONOMICUS.

P. S. — In the preface to the Nautical Almanac it is stated that “*all* the articles were computed by two separate persons, and examined by a third:” perhaps it may exercise the ingenuity and abilities of some of your readers, to determine the *probability* that three persons should commit *precisely the same mistake* in any calculation; and that a repetition of similar errors should occur *several* times in a work of 144 pages!!!

LXXV. *Prospectus of a new System of Beaconing.* By His Majesty's Royal Letters Patent granted to ROBERT DICKINSON, Great Queen-Street, London.

THERE is something so new in this Prospectus, and the benefits to be expected from the adoption of the system it recommends are so many and so important, that we cannot too earnestly recommend it to the attention and speedy adoption of those who from their situation possess the means of giving efficacy to any plan calculated to benefit the interests of navigation and humanity. Induced by the statements in the Prospectus to examine for ourselves the models of the patentee, we waited on the inventor, and bestowed on them a very careful inspection; and we have no hesitation in stating that, in our opinion, the system is quite scientific, and so perfect as to leave little or nothing to be desired, but its speedy and universal adoption by the common consent and patronage of all the maritime powers.—EDIT.

PROSPECTUS.

The design of this Prospectus is to propose a new beacon, of the following description and uses, with a view to beaconing the seas of the world.

1st. Every beacon on this construction will tell the longitude, latitude, soundings, bearings, and distance from land; how to be approached, currents, &c. with every other particular which the most elaborate and correct survey can describe.

2dly. Every beacon, and the particulars belonging thereto, will be as well known and as familiar to navigators of the remotest climes, and of all nations, as to those of its own country.

3dly. It presents the figure of an erect pillar (see the Plate), and can be placed in all fathomable depths of any reasonable size and elevation, say from 6 to 18 or 20 feet in height.

4thly.

4thly. It will always be found precisely in the spot where it was first laid down.

5thly. Being erect, it can be seen at a much greater distance than the present buoy.

6thly. It will remain completely water-tight.

7thly. While it defies alike the raging tempest, the fields of ice, weeds, the shock of a first-rate man of war, or any other body with which it may be assailed; that of the ordinary size is so reed-like and yielding, that the smallest jolly-boat would not, if suffered to run against it, be in the least injured.

8thly. Lastly, perhaps not least to be regarded, (as it may tend to its being more disseminated over the ocean and different seas,) it can be put down at a small expense; and, incredible as the foregoing may appear, the patentee (after one month's preparation) will engage to furnish twenty beacons a week with all their appendages, and send to any quarter of the globe*.

To show how the superiority now described is effected, the following observations are offered:—It consists, 1st and principally, in the singularity of its shape, which is not very unlike that of a shoulder of mutton before the shank is cut off. 2dly, In the systematic arrangements respecting its moorings; and, 3dly, In its speaking an univereal language.

In giving the bodies intended for sea beacons the form of a cone, (as has always been done,) a great error was committed, as no shape affording so much resistance, and therefore so badly calculated for the passing of the water, could have been found. The next error was, in loading this ill-formed body, which ought to have been as light as possible, with a tremendous heavy chain. Both these evils are here avoided; the shape offered being much sharper in the water than the sharpest Thames wherry; and not being loaded by the chain, as will be shown, the resistance is much less than that of a wherry, and it rides considerably lighter in the water.

The annexed engraving will convey some idea of the improved form given to this beacon; which also, in what regards floatage, presents, it is presumed, a new practical principle, and which, the patentee is vain enough to imagine, will be thought to possess considerable novelty, as hitherto the effect now produced, viz. the floating of a pillar, has never, that he knows of, been accomplished, without the very objectionable incumbrance of an enormous bulk, and a quantity of counterpoising ballast, proportioned to the elevation of the object to be raised. Indeed, it is hardly credible, after the numberless improvements that have been in-

* Corporate bodies, and such individuals as desire to see the models, with their description, will be pleased to apply by letter, addressed "To the Patentee, 58, Great Queen-street."

roduced into nautical science, that the beacon should have remained, for so many centuries, in a state so defective, seeing as one does (*vide* Lloyd's List) that more casualties and shipwrecks are occasioned by getting aground, (which beacons are intended as, and perhaps are, the only means of preventing,) than from any or all other causes united.—Hence, it is a duty incumbent on mankind generally, to endeavour to render this system perfect, or as nearly so as can be attained by human invention, by human assiduity, and by an accordance of sentiment in all the maritime nations of the world; and, seeing that the benefit to the human race and the advantages of such a union would be reciprocal, it cannot fail, soon or late, of being carried into effect.

The part of the beacon represented out of water, is a pillar, of three or four equal sides, on each of which is painted the same number, whether it be one or one thousand, in such a manner that, when the units are exceeded, the figures must be written

	1		1		9
downwards:	10 thus,	0:—15 thus,	5:—999 thus,	9:—and,	

from the form of the pillar, it is difficult to take any position in which the figures will not on one side be seen and distinguished at a considerable distance; and ships beyond reading distance, if they want information, will approach nearer to obtain it.

A Beacon Book, or Formula of References, is to be printed in various languages, wherein will be laid down, by means of corresponding numbers, all the particulars relating to every beacon, and which book, when referred to by the bewildered mariner meeting with a beacon, will, of course, instantly acquaint him with his situation, the dangers and difficulties by which he is surrounded, &c. &c.*

A writer in the American Philosophical Transactions truly remarks, that “the duties of a buoy (meaning a beacon) are *most imperious*; to the performance, however, of which, it is lamentable to reflect, from their construction and appointment, they are wholly incompetent; for, in fact, all they tell is—‘Hereabouts is danger;’ but on what side, or to what extent, the bewildered stranger is left to guess and find out.” And, in truth, it would be difficult for the imagination to conceive an idea of any thing so rude, shapeless, ill-chosen, and unmeaning, as the *canu-buoy*, the present beacon, as it is called.

* To say any thing respecting the mode of distributing such books, would at present be premature. Those with whom it must lie, to give efficacy to the system, will be at no loss to give them circulation by means of the Custom-houses whence vessels are cleared out for sea.

“ But

“ But (it may be objected) is it to be expected that all the nations of the earth can be brought to concur in the establishment of such a system ?”—To this it may be answered, that, all having an obvious interest in such establishment, it is not unreasonable to believe, that every civilized state may be easily induced to lend its aid to the perfecting of a plan which promises so many benefits to the human race generally. In the mean time, it is consoling to humanity to know, that, among ourselves, there is no want of either heads or hearts to patronize and cherish any rational plan, which has for its object the saving of the lives of thousands of our fellow-creatures (now sacrificed to a system left defective, merely because the possibility of a remedy was not contemplated), and adding much to the comfort and happiness of all who are doomed to traverse the ocean. The Right Honourable the Lords of the Admiralty, the Minister for the Foreign Department, the Brethren of the Trinity House, are sufficient to call it into action without any foreign concurrence. On our own coasts there is much occasion for it; nor can it be reasonably doubted, that, meeting with the countenance of our own Government, most of the European maritime powers, and also the United States, would easily be induced to lend a hearty co-operation.

In favour of any exertion that may be made for establishing a general system of Beaconsing; it is to be remarked, that the contrivance already alluded to, of employing buoys attached to different parts of a chain (see the engraving), to act as *carriers*, besides furnishing a means for planting beacons in comparatively deep seas, is calculated to promote the undertaking by the facilities which it affords in point of expense. The chain, as already stated, may be very small; for *each carrier bears its own portion of it*, and the ultimate strength wanted is only what may be required to withstand the current (when there is one) and the wind; neither of which can ever exercise any power upon the beacon, at all to be compared with what is now required to sustain a common beacon chain*. The beacon itself has nothing to carry but a few links of that portion by which it is united to the upper *carrier*; and from its form, and the material of which it is made, (*viz.* metal †,) suffers any vessel or other floating body

* The strength required when only the strain occasioned by wind and current is to be provided against, is much less than most people would imagine. In an experiment made at sea, off Southend, in twelve-fathom water in a very high wind, a piece of common jack-chain (unable to sustain two hundred weight without breaking) was found perfectly adequate to keep a beacon exposing six feet of height above the surface, in its place, the chain being borne by three *carriers*.

† Experience has shown that wood, as a material, is but ill adapted for
marine

body which may come in contact with it, to pass, without any other effect than moving it to one side, or passing over it; after which, it will instantly recover its position, and perform its duty as before; so that the expense of maintenance will be trifling. Nor is the saving in weight (which in every case will be at least 80 per cent.) the only benefit that results from the use of *carriers*: the greater part of the expense of manufacture can also be dispensed with, straight rods linked to each other at their ends, answering as well as the most expensive chains.

The advantages which will present themselves to the minds of those acquainted with nautical matters, as likely to result from this system, must be manifold beyond any thing that the author (who is no sailor) can conceive; but one thing is obvious, that it must prove highly beneficial that these beacons (instead of rolling about like so many porpoises, scarcely visible,) are always standing erect, exhibiting a height of from six to twenty feet above the surface, and may be seen to intercept the line of the horizon at several miles distance.

Nor is the proposed system applicable to shallows only. As it provides means for sustaining chains of any length, it is now possible to plant beacons in any seas that can be sounded. And it deserves particular notice, that the method which has been devised for sustaining chains, however heavy, proves at the same time, a means for rendering chains that are comparatively light, able alike now to perform all that duty which formerly required very heavy and strong chains. Nay, more: light chains can now be made to perform what could not be done at all formerly; for in proportion to the depth, so it was then necessary to increase the strength, not merely to enable the chain to restrain the buoy, unnecessarily bulky, &c. and improperly loaded, but even to sustain its own weight*. From this circumstance, the utmost depth that could

be

marine beacons. It is apt to admit water, and need tapping, easily damaged by worms, subject to rapid decay, and but ill suited to be worked into the best form for a beacon. The patentee has adopted iron, as a material subject to none of these objections, being homogeneous, impervious to water and worms, and expanding or contracting equally in all its parts, when exposed to changes of temperature. Should it be objected that iron will soon be destroyed by rust, it is answered, The patentee has a method of coating his iron, so as to defend it for a great number of years; as is proved by some beacons furnished by him for Government, and which have been for a considerable time in use at the Island of Beruuda.

* The common beacon, having a great weight to carry, is necessarily obliged to be made very bulky; and in consequence, there is a constant struggle between the buoy and the chain at the passing of every wave; by which repeated tugging action, the block to which the other end of the chain is made fast, is, by innumerable and constantly repeated hitches, gradually removed from its place, sometimes a mile or two; an event that

never

be reached was, comparatively, very limited; no means being known before, whereby it could be accomplished. The thing, however, is now practicable; and, sooner or later, it will be effected; for it is equally rational that the seas should be furnished with navigation-posts, as that travellers by land should have the convenience of mile-stones and finger-posts provided for them*.

THE STAR Newspaper, of the 29th of September 1817, contains the following Extract of a Letter from Derry.

“SHIPWRECK.

“Ferry Side, Carmarthen, September 26th, 4 P.M.

“I am sorry to inform you, that at about four miles distance, a brig with yellow sides, and about two hundred tons burthen, has got on a point of sand: her masts are gone overboard, and she must be a total loss, as the wind is strong from the S.W. with a heavy sea:—a boat is observed full of men, going into Kidwelly; but whether it is the crew of the vessel, or some men intending to go to her assistance, we are unable to ascertain.

“Seven o’clock, P.M. The tide is now on the turn, not a vestige of the vessel is to be seen, she totally disappeared about an hour ago, and our opinion is, that the captain is a stranger on our coast.”

It does not follow, because the present system is of great antiquity, enormously expensive, and has been got up with wonderful and praise-worthy labour and attention, that it is complete; nay, that it is not most lamentably defective, as, indeed, we know it to be, from the melancholy accidents arising almost daily from the single circumstance of getting aground:—The pains which have been taken, only prove that the necessity for doing something was so urgent, that something must be done, and the best has been done that happened to be thought of. Nevertheless, were this system under the exclusive control of one individual, it would not be surprising to find him clinging to it, for no other reason but because it was old, laboured, and expensive; but under the enlightened management of a corporate body, like that of the Trinity House, composed as it is of talent and respectability, which true merit alone can influence, defeat and delay on this occasion are not to be apprehended. The present proposal

never can occur with the telegraphic or pillar beacon, which having no belly above the water line, is not affected by the waves; and having only its own fastening to carry, requires from the block and its chain no more than simply to resist the current; a pressure to which the strength of one man is more than equal. The consequence of a beacon changing its situation is, that it changes also its character, and instead of being the mariner’s beacon and friend, becomes a deceiver, and a decoy to his destruction.

* The summits of the new beacon are made conical and sharp pointed, to prevent birds from resting on them, and obliterating the figures.

will

will no doubt be scrupulously examined; and, if found worthy, adopted. The expense will not then be thrown away upon a system comparatively worthless, and which has been submitted to, only for want of possessing better means: and when the system now recommended shall have become general, there will be no longer "strange captains on any coast:" and also it should be considered, that as the light expense at which it can be carried into effect will allow an increase of beacons, (it is thought of nearly ten to one,) the security will be increased in a tenfold ratio, independent of the duty being so much better performed.

LXXVI. *Notices respecting New Books.*

The Second Part of the Philosophical Transactions of the Royal Society of London, for 1817, has just been published, and contains the following papers:

XIII. **D**ESCRPTION of a thermometrical Barometer for measuring Altitudes. By the Rev. Francis John Hyde Wollaston, B.D. F.R.S.—XIV. Observations on the Analogy which subsists between the Calculus of Functions and other Branches of Analysis. By Charles Babbage, Esq. M.A. F.R.S.—XV. Of the Construction of Logarithmic Tables. By Thomas Knight, Esq. Communicated by Taylor Combe, Esq. Sec. R.S.—XVI. Two general Propositions in the Method of Differences. By Thomas Knight, Esq. Communicated by Taylor Combe, Esq. Sec. R.S.—XVII. Note respecting the Demonstration of the binomial Theorem inserted in the last Volume of the Philosophical Transactions. By Thomas Knight, Esq. Communicated by Taylor Combe, Esq. Sec. R.S.—XVIII. On the Passage of the Ovum from the Ovarium to the Uterus in Women. By Sir Everard Home, Bart. V.P.R.S.—XIX. Some further Observations on the Use of Colchicum autumnale in Gout. By Sir Everard Home, Bart. V.P.R.S.—XX. Upon the Extent of the Expansion and Contraction of Timber in different Directions relative to the Position of the Medulla of the Tree. By Thomas Andrew Knight, Esq. F.R.S. In a Letter addressed to the Right Hon. Sir Joseph Banks, Bart. G.C.B. P.R.S.—XXI. Observations on the Temperature of the Ocean and Atmosphere, and on the Density of Sea-water, made during a Voyage to Ceylon. In a Letter to Sir Humphry Davy, LL.D. F.R.S. By John Davy, M.D. F.R.S.—XXII. Observations on the Genus *Ocythoë* of Rafinesque, with a Description of a new Species. By William Elford Leach, M.D. F.R.S.—XXIII. The distinguishing Characters between the Ova of the Sepia, and those of the Vermes testacea, that live in Water, explained. By Sir Everard Home, Bart. V.P.R.S.—XXIV. Astronomical Observations and Experiments tending to investigate the local Arrangement of the celestial Bodies in Space,