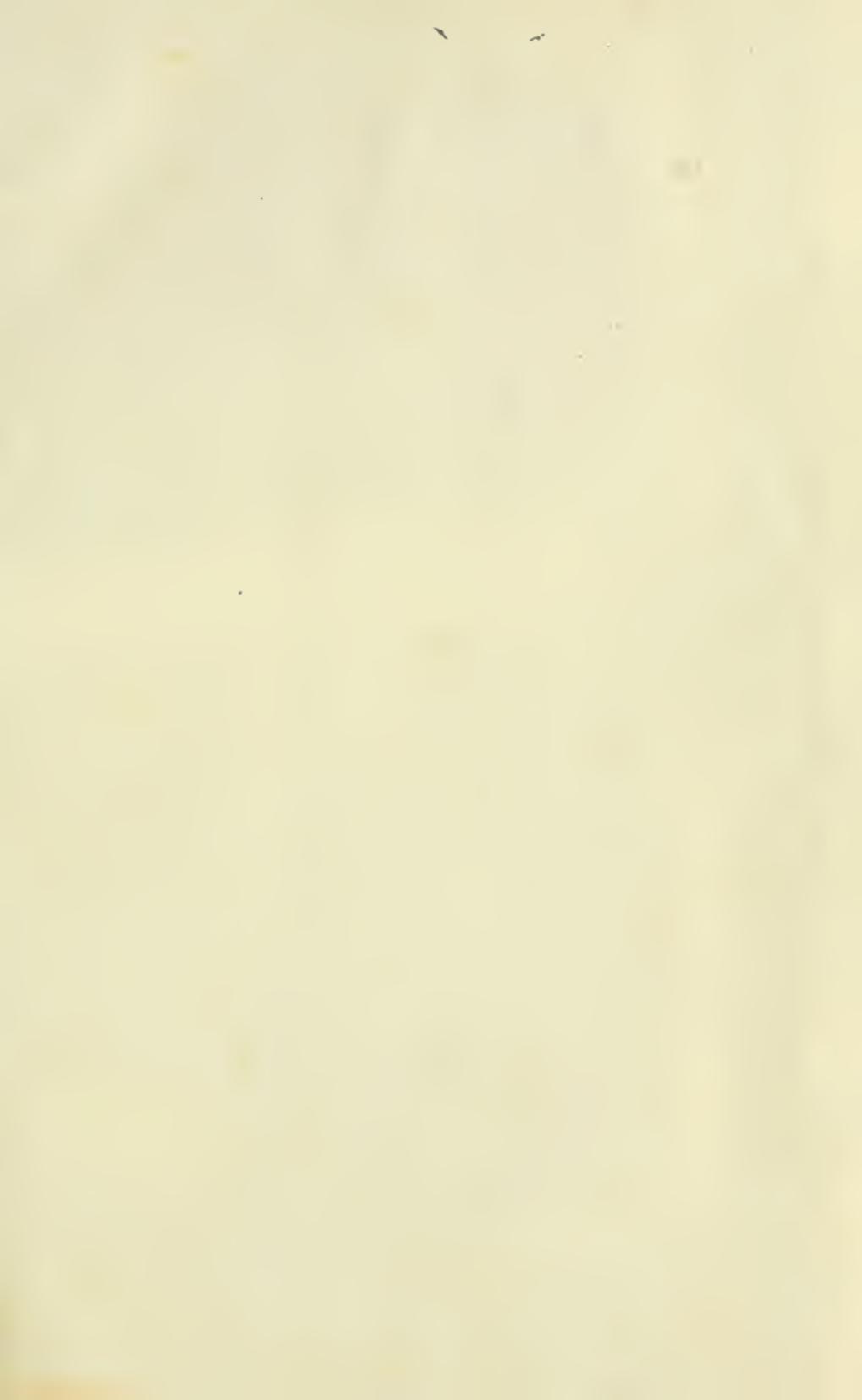


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LIGHTHOUSE MANAGEMENT.

THE
REPORT

OF THE

ROYAL COMMISSIONERS

ON

LIGHTS, BUOYS, AND BEACONS.

1861,

EXAMINED AND REFUTED.

BY

AN ENGLISHMAN.

SECOND EDITION.

LONDON:

W. H. ALLEN AND CO., 7 LEADENHALL STREET.

1861.

[*Price Sixpence.*]

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NOTICE.

THE attention of the Author of the following pages has been directed during several years past to the consideration of the great Maritime interests of the Empire ; and incidentally to the various questions, connected with the Administrative Systems, which regulate the supervision and general management of the Lighthouses, Buoys, and Beacons of the United Kingdom, as well as of foreign countries.

The inconsistent and partial mis-statements and illogical inferences contained in the recently published Report of the Royal Commissioners appointed in 1858 to inquire into the subject, having attracted the Author's notice, they seem to him to demand immediate correction and refutation.

In the brief interval afforded between the publication of this Report and Parliamentary action founded thereupon, announced by the Right Honourable the President of the

Board of Trade, the Author ventures to place the result of his observations before the Members of the Legislature and the Shipping Interests, as well as the General and Local Authorities who are invested with the control and direction of this important branch of our Maritime Institutions, with a view to invite public attention to the whole subject.

April, 1861.

LIGHTHOUSE MANAGEMENT.

INTRODUCTORY.

DURING many centuries, Great Britain, asserting her proud position as a great maritime nation, considered it her paramount duty to light her coasts by means of all the resources which the state of art and science progressively furnished ; and innumerable Lighthouses, Buoys, and Beacons, placed in the most favourable positions on our coasts, enabled the mariner to guide his vessel safely into her ports as well by night as by day.

Importance
of Light-
houses, &c.

This important function has been confided, from a very remote period of our history, to the Fraternity of the Trinity House of Deptford Strand, and throughout nearly four centuries that ancient Corporation, deriving its chartered powers directly from the Sovereign authority of the realm, ratified and enforced by innumerable statutes, has performed satisfactorily this important duty in England and Wales. Throughout the vicissitudes of our political history, the downfall of dynasties, and the fierce struggles of parties for patronage and power, the proper discharge of the functions entrusted to the Trinity House has been considered so essential to the safety and prosperity of our National and Mercantile Marine, that this great Maritime Institution has maintained its power and influence unimpaired and unimpeached until recent times.

Confided to
the Trinity
House.

Their system adopted by the French.

The Elder Brethren of the Trinity House have had the satisfaction of seeing our enlightened neighbours, the French, emulating us in the career of scientific improvement, adopt in its main features the English principles of management and organization ; and the great and varied experience acquired by the Corporation during its long and meritorious existence has induced the Legislature to confer upon the Trinity House various powers and attributions connected with the administration of the Boards which superintend the direction of the Lights in Scotland and Ireland.

Management in Scotland.

In Scotland, the management of the Lights is confided by Statute to the Commissioners for Northern Lighthouses, composed of the Sheriffs of Counties, lawyers, and civilians.

Management in Ireland.

The Ballast Board of Dublin performs similar duties for Ireland, and is chiefly composed of gentlemen connected with commerce.

Attention of Parliament directed to the subject.

In 1822, a few years after the close of the war, Parliament directed its attention to the extension of our foreign commerce, and the whole question of Lighthouse management, and especially of taxation, with its incidence upon various national interests, received serious consideration. France, which up to that period possessed little or no Lighthouse system, adopted definitively the lenticular principle so ably developed by their distinguished countryman, Fresnel, and a great impulse was given to improvement. The Scotch Board, contemporaneously, with the aid of their eminent engineer, Mr. Stevenson, also made great efforts ; and the Trinity House, not behind in the race of progress, introduced gradually considerable improvements in illuminating apparatus and construction.

Inquiry of 1834.

We need not trace minutely the history of the Trinity House during the succeeding quarter of a century. The Parliamentary inquiry of 1834 brought the discretion, judgment, and disinterestedness of the Trinity House into conspicuous notice ; whilst the most angry discussions were carried on with respect to the funds whence the charges of the Lighthouses should thenceforth be defrayed,

and a general struggle to be exempted from special burdens agitated all classes.

The Trinity House voluntarily surrendered the Differential Dues which by ancient laws they were entitled to collect, and Parliament confided to them the difficult, costly, and ungracious task of absorbing all the Private Lights held as individual property. The Select Committee of the House of Commons recommended further, that, for the general good of the public, the whole system of Lighthouses throughout the Kingdom should be placed under the management of the Trinity House.

That Body, far from expressing any undue eagerness to assume the powers of the coexistent and analogous bodies in England, Scotland, and Ireland, represented to the Government, that however such a measure would be undoubtedly beneficial not only to the maritime interests, but to the public at large, it would involve a large accession of arduous, important, and responsible duty to the Corporation, requiring for its efficient execution active personal exertions in distant parts of the Kingdom, far beyond the limits within which the duties of the Elder Brethren had previously, except upon very rare occasions, been exercised. They were not anxious for the proposed extension of their jurisdiction ; but if Parliament required them to assume the entire superintendence of all the Lighthouses in the Kingdom, of course it would be their duty to undertake the business with a determination to perform it properly.

The plain truth is, that the investigation instituted in 1834 elicited the fact, that the services of the Scotch Commissioners being gratuitous, and their education purely legal, totally unsuited them for Lighthouse business. Delays and differences arose in a variety of ways, and especially from the divided authority under which the Commission acted. Similar objections were patent in the constitution of the Board in Dublin. Hence resulted the desire that one individual Central Authority, subject in the matter of taxation to the control of Parliament, should be charged with the entire concentrated business. The London Trinity

Relinquish-
ment of
Dues by the
Trinity
House.

Their dis-
interested
policy.

Parl. Paper
164 of 1835.
—

Report of
1845, Ap-
pendix
No. 3.

Objections
alleged
against
Scotch and
Irish
Boards.

One Central
Authority
proposed,
and that
the Trinity
House.

House, by the concurrent voice of the Government, the Parliament, and the public, was pronounced to be the most proper body to be entrusted with the discharge of this great national duty.

That opinion confirmed in 1845.

Recommendation of the Committee in 1845.

Application of Revenues to Charitable Purposes.

Expropriation of Funds.

A new system established by Merchant Shipping Act, 1854.

This deliberate opinion was confirmed ten years subsequently, in 1845, when a Select Committee of the House of Commons, after mature consideration of all the circumstances relative to, and connected with, the actual state of the several establishments for managing the Lights, &c., in England, Scotland, and Ireland, were of opinion—

“That all public and general Lighthouses, and Floating Lights, Buoys, and Beacons, in the United Kingdom, should be placed under the management of one Board, resident in London ; and that that Central Board in London should be the Trinity Board of Deptford Strand.”

We need not dwell upon the details of the surrender, at a subsequent period, of the surplus Revenues received by the Trinity House, for Light Dues, which had previously been applied to charitable purposes. The eloquent appeal made by their illustrious Master the Prince Consort on behalf of the destitute seamen who were recipients of the charity, failed to alter the resolution of those statesmen who had predetermined to secure possession of the Funds, and administer them under their own control. The Trinity House, considering themselves as guardians of a sacred fiduciary trust, yielded reluctantly ; and the Merchant Shipping Act of 1854 consummated the expropriation of Funds, which the Crown, the Parliament, and the most ancient prescription had before respected as inviolable.

A new system of Lighthouse administration was now established. By the Merchant Shipping Act of 1854, and its complement in 1855, the Powers or Rights of the Trinity Board of London, Edinburgh, and Dublin were confirmed, subject to a new controlling authority, vested in the Board of Trade. The London Trinity House could inspect the Lighthouses in Scotland and Ireland ; and on the Board of Trade, upon complaint, was conferred the power of in-

spection, and of enforcing the production of such information as they might require. The General Lighthouse authorities could control Local authorities ; and in case of default by Local bodies, the Local Lighthouses might be transferred to General Lighthouse authority. Each of the General authorities still had power within its jurisdiction to erect new Lighthouses, Buoys, and Beacons, and to alter, vary, or remove Lighthouses, &c. ; but this Power in the case of the Commissioners of Northern Lighthouses and the Corporation of Dublin was subject to the sanction of the Trinity House, with an appeal to the Board of Trade. In the last resort, the Board of Trade was constituted the final appellate jurisdiction in all executive and administrative matters concerning the construction and maintenance of Lighthouses. We may have occasion to recur to other incidental arrangements provided in the Statute ; but as regards the right of levying Dues, Parliament confirmed the power exercised by the Crown to revise all Light Dues ; whilst the General authorities were still empowered to alter and regulate Light Dues.

But the greatest change effected was in the establishment of the Mercantile Marine Fund, by which all Light Dues received by, and accruing to, the Trinity House, and all rates and moneys received by the Trinity House for Ballastage and Lastage, were carried to the Fund, which was in this manner appropriated to defray all charges and expenses incurred by the General Lighthouse authorities.

Parliament by this act transferred to a Department of the Government the supreme control over all the Light Dues, and the Trinity House consented to the expropriation of its revenues. The Board of Trade also secured by law a concurrent jurisdiction over Lighthouses, in all essential matters, with the Trinity House and other General authorities.

The new system was now launched. Whether any practical improvement was effected upon the system which previously prevailed, may reasonably be doubted. From the Report before us, which points out the evils which have

New Dis-
tribution of
Powers.

Right of
Levying
Dues.

Mercantile
Marine
Fund.

Control
assumed by
the Board
of Trade.

New system
on trial.

Lord
Clarence
Paget's
Motion,
1858.

flowed from the double government established, we may reasonably infer that no material improvement has been made, other than what in the natural progress of things, under the old system, must have been effected. However this may be, when the Earl of Derby's Government was in power, the Opposition cast about for some grievance, and in April 1858 Lord Clarence Paget, after a long and laboured attack upon the English system of Lighthouses, Buoys, and Beacons, proposed a Resolution to the House of Commons in conformity with the recommendation of the Select Committee of 1845,—

“That all expenses for the erection and maintenance
“of Lighthouses, Floating Lights, Buoys, and
“Beacons, on the coast of the United Kingdom, be
“henceforth defrayed out of the public revenue.”

His compa-
rison of
English
and French
Lights.

His Lordship's speech was altogether illogical. Instead of addressing himself to the question proposed, of taxation, and its incidence, connected with the Lighthouse system, and in what way the requisite funds were to be derived, his Lordship delivered a laboured essay upon the comparative sufficiency and efficiency of the English and French Lights and Buoyage. The gallant officer gave an account of his visit to Paris, and in what way he was received by M. Reynaud, the Engineer-in-chief, Secretary to the Light-house Commission, charged with the direction of the service. We are not informed of all that passed between the two gentlemen; but we have only heard, upon tolerably good authority, that M. Reynaud's account of the conversation differs very essentially from that given by his Lordship in the House of Commons.

English
patriotism
and French
skill.

We may with propriety question the good taste of that class of politicians who are incessantly endeavouring to make political capital by extolling foreign institutions at the expense of our own. Whatever encomiums Lord Clarence Paget poured forth, extolling the French system of Lighting and Buoyage, we beg to remind him that M. Reynaud and the French engineers avow, that in all the main features they have imitated the English system.

Of course, the English system, mainly governed and developed by the Trinity House, being of long anterior organization, has been susceptible of modern improvements, which the fertile genius of the French people has not been slow to apply and improve. But when his Lordship descended upon the Buoyage system of the Thames, and insisted upon the adoption of a uniform scheme of Buoys, painted Black and Red, in imitation of the French practice, and ridiculed the prevailing dissimilar systems which existed in various parts of the Kingdom, he only betrayed his own imperfect and superficial knowledge, or speculated upon the want of information in the House of Commons on the subject.

In refutation of the mis-statements, as regards Lights, made on that occasion, we need only refer to the evidence given last year before the Select Committee of the House of Commons on Merchant Shipping ; and with respect to Buoyage, it will suffice to reproduce here the testimony given by the French Commissioner sent over to this country to report to the Department of *Ponts et Chaussées* :—

His state-
ments re-
futed.

“ The English organization leaves almost nothing to
 “ be wished for ; and it will be actually difficult to
 “ see Buoys maintained with more care, and pre-
 “ served in a more perfect order, than those of the
 “ Trinity House Corporation.”

We have thus placed the testimony of one enlightened Frenchman, in respect to our Buoys, in direct opposition to that of Lord Clarence Paget. His Lordship, after reading this, will probably feel that, at all events, his rash and undeserved censure, passed upon the Trinity House system, is not, it appears, shared by the enlightened engineers of France. The effect, nevertheless, of Lord Clarence Paget's speech was to extort from Mr. Henley, then President of the Board of Trade, a promise that a Royal Commission should issue, to examine into the whole question of Lights, Buoys, and Beacons ; previously to which, however, he, in a very few words, demolished all the various arguments which had been urged with a view to demonstrate the inferiority of the English system of administration to that of

Royal Com-
mission
conceded.

Objection
made by
Mr. Lowe.

France. Notwithstanding this, Mr. Henley consented to the appointment of a Commission, having for its object to inquire into the questions of condition and management, but withdrew, as will appear, from their consideration the whole question of taxation, and the source whence the funds were to be derived. The inconvenience of a double government was dwelt upon in the debate by Mr. Lowe, who had learnt his lesson when formerly Vice-President of the Board of Trade; but that gentleman especially condemned the proposal now revived by the Commission which has just made its Report, that any Minister of the Crown should be placed in the position of submitting Estimates to the House without having the power to control the expenditure. Such, however, is the main feature of the Report just promulgated.

Mr. Card-
well's testi-
mony in fa-
vour of the
new system.

Mr. Cardwell, who framed the Merchant Shipping Act of 1854, judiciously pointed out the advantages of the existing system. He reminded the House of Commons that the Select Committee of 1845, by a vote of six to four, recommended that the future Central Board should be that of the Trinity House of Deptford Strand; and demonstrated that, whatever might be advanced about the inconvenience of a double government, the whole responsibility of managing the Lights was left, in England, Scotland, and Ireland, to three distinct bodies, so that each country had its own special officer presiding over the service. He might have added, that in France, and indeed in every other country, an analogous system prevailed, and the "control of the purse" had not paralysed the efforts which all parties had been making of recent years to produce the best light upon the most economical expenditure.

Royal Com-
mission
issued,
1858.

Under these circumstances, the Earl of Derby's Government in December 1858 issued a Royal Commission, composed of Rear-Admiral W. A. B. Hamilton, Captain A. P. Ryder, R.N., Dr. John Hall Gladstone, Mr. Duncan Dunbar, and Mr. Samuel Robert Graves, to inquire into the number, quality, and position, as well as the expense of constructing and maintaining the Lighthouses, Floating

Lights, Buoys, and Beacons on the coasts of the United Kingdom, both absolutely and relatively, as compared with the Lighthouses, Floating Lights, Buoys, and Beacons on the coasts of any foreign countries, and into the sufficiency of the said Lighthouses, Floating Lights, Buoys, and Beacons, for the efficient lighting and buoying of the coasts of the United Kingdom. They were further to inquire whether the system of management and control under which the Lighthouses, Floating Lights, Buoys, and Beacons on the coasts of the United Kingdom are constructed and maintained, according to the provisions of the "Merchant Shipping Act, 1854," is well adapted for securing the most efficient lighting and buoying of the coasts of the United Kingdom, with a due regard to economy; or whether any, and, if any, what, change might be advantageously made in that system. The Lighthouse system in our Colonial Possessions, under the superintendence of the Government, was also to be brought within the scope of the inquiries of the Commissioners. The powers of the Commission were limited to the above special points; and the paramount question as to the mode by which the requisite funds to maintain any system were to be raised, we must repeat, was altogether withdrawn from their consideration. The Chairman, however, disdained to be fettered by the Royal commands, and, as we shall see presently, delivered a pretty decisive opinion upon that point.

We may refer hereafter to the peculiar constitution of the Commission, in which the Scotch element was not only "sufficiently" represented, but in number and influence greatly predominated. Mr. J. Frederick Campbell, of Islay, appeared upon the scene of political life as Secretary to the Commission, and seems to have started suddenly, fully armed with profound optical knowledge. The Commissioners vouch for the extraordinary success of his experiments. It is almost inconceivable that so sudden a "new light"—so "flashing" an inspiration of optical science, catoptric, dioptric, and holophotal, could have been actually obtained in so short a

Powers
conferred
on Com-
missioners.

Question of
Taxation
withdrawn.

Constitu-
tion of the
Commis-
sion.

time, from chance alone. Dr. John Hall Gladstone reinforced the Commission with the weight of his scientific acquirements, but to what extent they proved of any value we are not informed. We do not detect any sly puff of this gentleman's scientific achievements introduced into the Report, whilst "the peculiar genius and aptness" of the Secretary for the work on hand finds a grateful record, and his alleged notable discovery in optics, which the Royal Commissioners afterwards confessed to be no discovery at all, is ostentatiously obtruded upon the public.

The arrangement and distribution of subjects in the Report are open to severe criticism; but we shall be glad, however, to render justice to the abilities of the Secretary as a classifier, when his abstracts and summaries of the evidence shall be published, provided they are more ably and impartially executed than the Report founded upon them.

*Letter of
Admiral
Hamilton.*

The first anomaly which struck us, in examining the document just published under the collective authority of the Royal Commissioners and the individual dictation of the Chairman, is the extraordinary letter of Rear-Admiral W. A. B. Hamilton, dated the 10th of January last, two months prior to the signing and sealing of the Report by himself and his colleagues. This communication was made admittedly before the whole of the evidence was taken, the examination of Captain Sulivan, R.N., having been deferred till the last.

*Its ten-
dency and
object.*

The gallant Chairman's letter, which is altogether without precedent in any similar Report to be found in Parliamentary records, must, from its form, tone, and substance, incur general reprobation. It bears evidence throughout of a determination to carry out an impracticable scheme of Lighthouse Government, crudely concocted in the writer's own mind; and he does not affect to disguise that he is throughout dictating his commands to his obsequious brother Commissioners in order to influence the adoption of his views in their joint Report. Having made up his mind to recommend a preposterous scheme, the gallant admiral tells his colleagues, "I am sure" you have

*Report,
p. 10.*

Note, id.

made up your minds to be satisfied of this, and "I am sure" you will be of opinion that so-and-so; and assuming the certainty of the most imaginative and improbable events, as *faits accomplis*, he rushes to the conclusion, that as the time is not far distant when "the Board of Trade" "will naturally cease to be the representative in Parliament "of the Lighthouse Board," therefore the power had better be transferred to the Admiralty!!! Our readers will probably consider with us that the whole recommendation is undeserving serious notice. It is especially inapplicable at this moment, when almost every newspaper in the country announces in its columns the threatened extinction of the Admiralty Board and its rumoured reconstruction.

Letter of
Admiral
Hamilton,
p. 60.
Report,
p. 41.

The main recommendations made by Admiral Hamilton having been adopted by the Commissioners collectively and embodied in their Report, we shall proceed to deal with the allegations made in that official document. Admiral Hamilton makes the unwarrantable assertion, on his individual responsibility, that the Trinity House "have "more or less 'leant' upon the Admiralty in fulfilment Page 49. "of their duties;" which groundless assertion is repeated in the Report, and is further attempted to be bolstered up by a letter, not yet before us, from the Board of Admiralty to the Commissioners, to the effect "that the "Admiralty is already in the almost daily exercise of "Lighthouse business; and not only as so stated, 'irre- "sponsibly' engaged, but to an extent, and in a manner, "which, with Admiral Hamilton's acquaintance with Ad- "miralty business, he was scarcely aware of." The Admiral then furnishes an example of "a rather rotary Page 49. "process," as he calls it, which is evidently pirated from a ridiculous satire of the "Circumlocution Office," the object of which is plainly to draw a most partial comparison in favour of the Admiralty, to the disparagement of the Board of Trade and the Trinity House. We cannot doubt, that if the Admiral had applied to the Board of Trade, or to the Trinity House, in order to become correctly informed of the source whence practical information on almost every

Report.
—
Letter of
the Chair-
man, p. 49,
note.

essential point originated, he would have discovered that the Trinity House readily furnishes all the most authentic material facts and information, silently and unostentatiously, whenever required by any Department of Government for the benefit of the public interests. We aver boldly, that the Admiralty "leans" upon the Trinity House to a far greater extent than that Corporation leans upon the Admiralty, in the performance of those duties confided especially to its care; and we defy Admiral Hamilton to prove that the Trinity House is ever at a loss for the effective and unaided discharge of its duties. It seems, therefore, that the prejudices of the gallant Admiral in favour of Admiralty control have betrayed him into an egregious error of alleged facts.

After Admiral Hamilton, in his letter, has, in imagination, subverted the existing system, which works well, and dogmatically settled the seat of power in the new Central Board—a task proverbially easy in theory—he displays great ignorance of the mechanism of our English Institutions. Having, in his own idea, established a complete Board, he tells his brother Commissioners, that "of course" "it would be competent to the Government to increase the "number of the Central Board." The newly-appointed members are also to be subject always to the approval of the Government; so that it would appear that, after the perfection of centralization has been attained, the Government is to have the power to step in, control the composition of the new Board, and swamp it utterly by an arbitrary addition of members; and all this is to be, "of "course," in defiance of all constitutional practice, and long successful administrative experience of established principles, interwoven with our Constitutional system.

We have paused a moment to notice Admiral Hamilton's injudicious letter; and, with becoming respect for his rank and acknowledged talents, we have claimed the privilege of pointing out those crude theories, by means of which administrative reformers too often seek to compass their objects, and to overthrow time-honoured Institutions.

Report,
p. 45.

id.

Report.

—
Chairman's
Letter,
p. 45.

REPORT.

It is to the Report itself, in all essential points founded upon the Admiral's letter, that we shall now address ourselves.

We have pointed out the peculiar constitution of the Committee. The Scotch element having been so predominant, it can be no matter of surprise that a strong Scotch bias prevails in every page of the Report. If it had been designed to pack a jury of Scotchmen in order to decide upon various questions, in which both countries in a spirit of honourable emulation contended for superiority, the object could not have been more completely accomplished than in the present instance. A large numerical majority of Scotch judges were appointed to sit in judgment upon English administrative matters, involving the delicate questions of disputed rights, authority, and executive capacity, and it is not to be wondered at that a most partial testimony is given in favour of Scottish success and superiority. We shall see how far this is deserved; its obvious tendency being to disparage English administration.

Without stopping to decide which is the best form of eliciting information, whether by oral or written testimony, and waiting with becoming patience for all the little "bits of evidence" the Commission have collected so industriously, we pursue our task of examining the Report itself.

The Commissioners start at once with the bold assertion that "The west coasts of Scotland and Ireland are still insufficiently illuminated; and the Channel Islands, lying near the track of ships bound up Channel, and surrounded by rapid tides, have been left in a state of culpable darkness, although a light is now being erected on the Hanois Rocks, on the west coast of Guernsey."

The plain and only inference to be drawn from these allegations, coupled as they are with similar insinuations dispersed throughout the Report, must be that English maladministration has prevented Ireland and Scotland from being sufficiently illuminated, while the state of "culpable

Number
of Lights.
Report,
p. 5.

Charge of
negligence
refuted.

darkness" of the Channel Islands is inferentially imputed to the Trinity House. A charge of culpability should be clear and unambiguous. The Royal Commissioners infer only that the Trinity House has with culpable neglect left this important part of our Channel navigation in darkness. They, however, omit to state that the Trinity House had no authority by law to erect Lights on the Channel Islands until the passing of the Merchant Shipping Act in 1854. That body had recognized, in 1846, the necessity of providing a Lighthouse in Guernsey; but, owing to the disinclination of the Assembly of States in that island to contribute their fair proportion to its maintenance, the negotiation remained in abeyance during several years. The States having consented at length to the tolls proposed by the Board of Trade and the Trinity House, the erection of the Lighthouse was immediately commenced.

With this refutation, we may in fairness retort, that the insidious reflection cast upon the Trinity House rather proved that the Royal Commissioners were themselves in a state of "culpable darkness" about the real facts of the case, or were misled, when they imputed censure in quarters totally free from blame.

Report, p.3. As regards the west coasts of Ireland and Scotland being still insufficiently illuminated, we shall not dilate upon the subject, nor take the hint given by the Commissioners. The suggestion of the remedy indistinctly thrown out would, if seriously entertained, invidiously revive a variety of questions which might provoke national animosities. Parliament having appropriated the revenues collected from English Shipping to the extent of £1,200,000, in the absorption of all the Private Lights in the Kingdom, and in the erection and maintenance of numerous Lights in England and Wales, the Board of Trade might, under the same authority, be called upon to contribute a still greater proportion of English revenues to Scotland and Ireland than the necessities of their commerce, or the probable saving of life and property, might render necessary or even just. Already, since 1854 and the establishment of the

Mercantile Marine Fund, a much larger appropriation of money has been devoted to the construction of Lighthouses in Scotland and Ireland than previously. We do not mean to state that the appropriation was not called for; but when it is now urged that the Scotch coast is still insufficiently illuminated, that alleged insufficiency does not arise from any want of liberality on the part of the Board of Trade in contributing ample funds to the lighting of their coasts respectively.

See Annual
Accounts of
Mercantile
Marine
Fund.

LIGHTHOUSES.

In the Tables prepared by the Commissioners (Appendix Nos. 1 & 2) it will be seen that the Lighthouses in England on shore are stated to be 171, being one for 14·0 miles, and those in France 224, being one for 12·3 miles.

Light-
houses on
shore.

In this invidious comparison between France and England, the omission of all consideration of the Floating Light Ships in the United Kingdom betrays at the first blush the partiality of the Commissioners. Every practical man knows that a mere abstract comparison of averages or numbers is no more demonstrative proof of logical accuracy, than the number of coins in a man's pocket is the test of the value of money in his possession. Other qualities and combinations enter into all similar calculations.

The Americans, always animated by a jealous pride in the superiority of their Institutions, ingenuously illustrate this point in a clear manner. Alluding to the cost of Lights with relation to numbers, they say,—

“This mode of comparing the Lights of other nations “with those of the United States *is not fair [sic in orig.]*, “inasmuch as by it the most powerful and best-attended “Lights are placed on a parallel, in a financial point of view, “with those *in every respect inferior to them*. In this esti-“mate, the Lights of the United States are included, from “the pier-head, with a single lamp upon it, to the largest “and most important seacoast light.”

American
Report,
1852,
p. 96.

In like manner it is quite deceptive to compare the

abstract number of the French Lights with the number of English, Scotch, and Irish Lights ; and the given extent of coast-line of each territory only renders the problem more complex.

With a slight effort of ingenuity, and even by employing the same figures and numbers given by the Royal Commissioners, there would be little difficulty in constructing a Table to demonstrate that the English provide a far greater measured amount of Lights on our coasts than the French.

Number,
Position,
and Effi-
ciency of
Lights.
Report,
p. 5.

Royal Com-
missioners'
Report,
p. 6.

Statistical
calculations
delusive.

French
Lights
cross their
fire.

Let us, however, deal dispassionately with the questions raised of the number, position, and efficiency of the Lights. The Commissioners roundly assert that "The British coasts "are, as respects number and position, not so well *guarded* "as the French, *for* their lights are purposely so placed on "the coast of France as to cross their fire."

This sounds unpleasant, and almost alarming, to English ears ; but we are somewhat reassured in the next page when we learn that "the coasts of the United Kingdom "are better guarded than those of Norway, or perhaps any "other country excepting France."

We need not, however, for our present object, follow the Commissioners in the calculation of the number of Lights in France, compared with the number in Ireland and Scotland ; but we must impress upon our readers at the outset, that mere abstract statistical calculations of number of Lights and extent of coast furnish the most imperfect data wherefrom to form a comprehensive and correct judgment of the absolute sufficiency of a National Lighthouse System.

As regards the Lights on the French coast being so placed as to "cross their fire," the slightest glance at the configuration of the English coast, sailing up the Channel, marked as it is by conspicuous headlands, with great indentations and bays, renders an embarrassing proximity of Lights, like that in some places on the French coast, perplexing and superfluous. Vessels do not sail round the indentations of the coast ; nor is it always necessary to maintain expensive Floating Lights, placed at intervals

between the great headlands which distinguish our coast-line. From the magnificent Lighthouse of Bishop Rock, which will bear a favourable comparison with any similar structure in the world, passing on to the Eddystone, in the direct track of vessels sailing up the Channel, eastward to Beachy Head, the Trinity House has constructed edifices which are proud monuments of English engineering skill, and maintains Lights which the concurrent testimony of British and Foreign mariners pronounces to be unsurpassed. In all these comparisons, however, especially where minor Lights are concerned, it must be constantly borne in mind that in France the apparatus of the modern Dioptric system was adopted at once in 1825 throughout the whole Lighthouse service. The United States and Spain, in the reformation of their respective administrations, adopted the same system. But in the United Kingdom the old reflectors have only been replaced from time to time by the refracting apparatus. Is any blame, therefore, to be imputed to the Trinity House for this? The Commissioners admit that it is still a matter of dispute whether the purely Catoptric principle is not better than the Dioptric under certain circumstances. Mr. Alan Stevenson, whose authority on the subject cannot be questioned in any quarter, speaks in the following terms of the fitness of dioptric instruments for Revolving Lights:—“ By placing eight reflectors on “ each face of a revolving frame, a light may be obtained “ as brilliant as that derived from the great annular lens. “ The divergence of the rays from the lens being less than “ from the reflector, it becomes difficult to produce by lenses “ the appearance which characterizes the catoptric revol- “ ving lights, already so well known to British mariners; “ and any change of existing lights, which would of course “ affect their appearance, must therefore involve some prac- “ tical objections, which do not at all apply to the case of “ new lights.” The Trinity House have admitted the advantage of the catadioptric principle by its general adoption. But every case of change must rest upon its individual merits; and the decision of the Trinity House, in the

Bishop
Rock to
Beachy
Head.

Mr. Alan
Stevenson's
Rudiment-
ary
Treatise
on Light-
houses, &c.
J. Weale,
1850.

selection of the most appropriate light, can only be taken after experimentally testing and weighing all the proposed alterations, balanced against the prospective and permanent advantages.

But, however, the best exculpation of the Trinity House upon the disputed point of comparative illumination will, after all, be found in the Report of the Royal Commissioners. "In England, too," they say, "there seems at first sight to be a somewhat smaller provision made for illuminating the coasts than in France; yet if the 41 English Floating Lights be added to the 171 Lighthouses, *as indeed justice requires*, England will be found to provide a Light for every 11·37 nautical miles of coast, while France furnishes one for only every 12·3 miles."

Therefore the plain truth is at last admitted, and is made patent to the world, that the coast of England, notwithstanding the additional expense of her numerous Floating Ships, has relatively a greater number of Lights than the coast of France.

Quality of
Lights.

The testimony given by an overwhelming majority of mariners in favour of the quality of the Lights of the United Kingdom, as compared with Foreign Lights, ought to be deemed conclusive as regards the undoubted superiority of Great Britain in that respect. Of 586 correspondents who were asked,—"Do you think the coasts of the United Kingdom as well lighted as any of the foreign coasts? 514 consider the coasts of the United Kingdom as well lighted as any others with which they are acquainted; while in reply to the question—If you think that the coasts of the United Kingdom are not so well lighted as those of any other country or countries, name those countries in the order in which you prefer their lights;—out of 311, 200 express their preference of the British Lights, and only 33 prefer those of any other country; and not one foreigner prefers the lighting of any foreign shore."

Report,
p. 12.

id.

This unequivocal evidence in favour of England not satisfying the Commissioners, they set about the ungracious

task of analysing the testimony of their correspondents, with a view to fritter away its value, and then they discover that "out of the 200, only 42 profess to be well acquainted with the coasts of France, while it must be remembered "there are 25 who express a preference for the French "lighting."

Report,
p. 12.

The precise aim of these contradictory strictures, unless it be to embarrass the judgment, is not very apparent. It is, however, admitted that, upon a test of comparison suggested by the Commissioners, "112 witnesses are in *id.* "favour of British Lights, and 72 in favour of Foreign "Lights, giving a majority in favour of British Lights of "40 on 184 comparisons; 15 of the 25 British Lights "mentioned are preferred to the Foreign Lights compared "with them; 1 is equal; 9 are inferior; giving a majority "of 6 in favour of British Lights. Of the 15 British "Lights preferred, 9 are inferior, giving a majority of 6 "in favour of British Lights. Of the 15 British Lights "preferred, 9 are catoptric revolving or flashing, 2 ca- "toptric fixed; 2 dioptric fixed, 2 dioptric revolving. "Nine British Lights are said to be inferior to those "Foreign Lights compared with them. Of these British "Lights, 3 are dioptric fixed, 2 dioptric revolving or "flashing; 2 catoptric fixed, 2 catoptric revolving."

Now, as regards this point of comparative illumination, we will not appeal to British patriotism merely; but, while discussing this point, we ask the impartial reader to recur to Lord Clarence Paget's speech of April 1858, out of which the Commission had its origin, and there he will find the following invidious statement:—

His Lordship said,—“It would be his duty to point out “that this great maritime country, which had been the “pioneer of free and unrestricted intercourse among na- “tions, was, he regretted to say, *the lowest among the “nations as regards the Lighting and Buoying the coasts.*”

Hansard,
vol. cxlix.
p. 1111.

His Lordship proceeded to extol everything French and to undervalue everything English, and in a strain of invective and ridicule quite unsuited to the occasion, said,—

Hansard,
vol. cxlix.
p. 1113.

" Any person who happened to be leaving Folkestone on
 " his way to Paris, on a fine night, and was fortunate enough
 " not to be sea-sick, might observe a magnificent bright
 " light, as it were, at his feet, while he might also per-
 " ceive a little light, such as apparently might be produced
 " from a farthing candle. The latter proceeded from
 " Dungeness, which was only about twelve miles,—the
 " former light from Cape Grisnez, which was twenty-five
 " miles distant. Was it not, he would ask, disgraceful
 " to this country that she should be so far behind France
 " in so important a particular?"

This odious comparison of two unequal and incongruous objects is in the highest degree disingenuous. The comparison of a fixed light like Dungeness with a revolving one as at Beachy Head or Grisnez, could only have been made with a view to draw an absurd contrast between two dissimilar objects. No seafaring man that we know of, except Lord Clarence Paget, would in common justice, or indeed common sense, compare the Dungeness Light with the Grisnez Light. If his Lordship had suspended his observations until he arrived about mid-channel, in the position then gained, within the focus of a reflector, and being equidistant from Grisnez and Dungeness, instead of being so distressed at the paltry light of the latter, which he compared to a farthing candle, he would have discovered that the difference between Dungeness and Grisnez is not greater than that between any other Fixed and Revolving Light. And if by a further effort down Channel, his Lordship had extended the sphere of his circumscribed vision and had taken in a more comprehensive range, he would at no great distance have descried, at Beachy Head, a first-class beautiful Light, rivalling and, indeed, eclipsing the French Light of similar degree. The Royal Commissioners are compelled to admit the excellence of this Trinity House Light in the following terms:—

Compari-
son of
Beachy
Head Light

" Beachy Head, for example, is a catoptric revolving
 " light, showing ten reflectors on one face, and is favourably
 " compared with Grisnez, which is a dioptric flashing light,

“though Grisnez is some feet higher than Beachy Head.
 “There is but one lamp at Grisnez, burning, according to
 “regulation, 785 gallons ; at Beachy Head there are thirty
 “lamps, burning about 1000 gallons of oil in a year.”

with
Grisnez
Light.

This is a complete refutation of Lord Clarence Paget's unpatriotic charge of English maladministration and inferiority in respect of the illumination of our coasts. If, therefore, the overwhelming testimony of numerous disinterested witnesses establishes the fact that, as regards the number of Lights, England presents already a small excess, the number having been steadily and gradually increasing during the last two centuries and a half whenever the interests of commerce demanded, we are not quite so lamentably behind the French on that point as Lord Clarence Paget asserts. The grand comprehensive system established by the French in 1825, in conformity with a Report in 1819, by which a number of additional lights was placed on what were deemed the best positions, and their whole system organized (still with the advantage of English models), has undoubtedly claims to admiration. But England is by no means behind in the race of improvement, as we are making steady and increasing progress, not only in magnificent Lighthouse structures which vie with any in the world, but in the number, quality, and efficiency of our Lights. As regards quality, taking the Light of Grisnez, so often referred to, and which is mentioned as seen at great distances by 108 witnesses, the Commissioners acknowledge that, “of the twelve British Lights compared with it, seven are said to be better, five worse ; and of forty-eight com-“parisons between it and British Lights, thirty are in favour of the latter.”

Lord
Clarence
Paget's
attack
repelled.

Report,
p. 13.

They add, “The above evidence then goes to show” [we think incontrovertibly] “that the quality of British Lights, speaking generally, is equal to the quality of Lights in any other part of the world ; and the testimony is especially valuable because the men who give it are mariners, those best able to judge of the appearance of the light.”

After this irresistible evidence in favour of the results of

Trinity House administration, we cannot doubt that his Lordship, animated by the honourable and chivalrous feeling of his profession, will, notwithstanding the long interval which has elapsed, yet avail himself of his position in the House of Commons to withdraw his unfounded allegations. The decision arrived at by the Commissioners, that Report, p. 6. the coasts of the United Kingdom are better guarded than those of any country, *excepting France*, must, in respect of the exception made, unsupported as it is by proof, be reversed; and England, "as justice requires," is fairly entitled to the foremost rank when compared with France in the sufficiency and efficiency of the Lights on their coasts.

The Report goes on to state:—

Source of Light. Report, p. 13. “With reference to the source of light, the observations of the Commissioners have placed it beyond doubt that the French have the advantage over the English and Irish in the height and brilliancy of their flames, owing mainly to their use of the Mechanical Lamp.”

Mechanical Lamp. Upon this point we may remark, that on the early introduction of the Dioptric apparatus into Great Britain, the Mechanical Lamp was adopted, having four wicks and four pumps, contained in one vessel. Each pump supplied each separate wick. But experience proved that this lamp was not well adapted for general use, inasmuch as when one or more of the pumps became damaged, the corresponding wick was rendered inefficient. A preference has therefore been given to the more simple and certain Fountain Lamp, which has produced the light which the Commissioners declare will bear a favourable comparison with that of foreign countries.

Fountain Lamp. **Comparative consumption of oil** The use of three wicks instead of four was adopted, not for the purpose of economizing oil; but as the result of experiments gave a larger consumption of oil by the use of the three wicks than by the four, it seemed expedient to remove the small central wick, with a view to promote combustion by allowing a freer access of air to the inner wicks. As regards consumption of oil, we must first dispute the alleged fact that from the mechanical pump lamp

used by the Northern Commissioners, which burns 794 gallons of oil, there are produced "flames of about double "the height of those in England and Ireland."

In France, the regulation standard of consumption of oil ^{in France,} for a first-class Dioptric Light, as at Grisnez, is 785 gallons ; in England the Commissioners give the average at 474. Here, again, is exhibited the fallacy of comparative averages. The Commissioners admit that at Beachy Head 1000 gallons of oil is the annual consumption. We need not dilate upon that point ; but as regards the excessive amount of oil alleged to be consumed in the Northern Lights, and ^{in Scotland.} assumed to be the real cause of superior illumination, we must confess ourselves perplexed about the matter, although by no means convinced. The Scotch, in a higher latitude, burn their lamps only from the departure until the return of daylight, whilst the Trinity House keep their lights burning from sundown to sunrise ; and yet the Scotch, who, it is said, save £1300 per annum by their system, consume nevertheless almost double the quantity of oil. The thing is altogether incredible. There must be some mistake, or some "cooking" with this oil, as it is quite at variance with all practical experience to be satisfied that the oil is in this manner consumed in the mechanical lamp. As the superintending authorities over the keepers of the Lighthouses may occasionally complain of excessive expenditure of oil, or, on the other hand, of the insufficiency of an *effective* flame, the keepers will endeavour to ingratiate themselves with their employers, and can readily resort to means whereby the consumption of oil may be increased or diminished. The alleged excessive quantity of oil said to be burnt in the Scotch Lighthouses is to us altogether inexplicable, and the most practical men in the Kingdom, thoroughly conversant with the whole subject, avow frankly to us that they cannot upon this point afford us any reasonable explanation. They, however, one and all, reiterate the contradiction we have given to the assertion made "that the "flames produced in Scotland are twice as high as those in "England and Ireland."

**Faraday's
Report on
Whitby ex-
periments.**

The question at issue may perhaps be brought under consideration in the clearest point of view by a reference to the Report of Prof. Faraday in relation to the Focal Points of Lighthouse Apparatus made last year. The South Light at Whitby was inferior, on the occasion of his previous visit, to the North Light, although both lamps were of the same construction. That in the North House was left unchanged, to serve as a standard ; that in the South House was changed for one with four wicks and a plentiful overflow, and the light it now gives is not merely considerably greater than before, but more than that of the North Light. It has burnt well from the first. The average proportion of oil consumed in a fortnight is 15 pints for the South Light (a mechanical lamp with four burners), and 13 pints for the North Light (a Fountain lamp with three wick burners) per 12 hours : these quantities accord with the proportion of light which they really give.

The Royal Commissioners, when on a visit with the Elder Brethren, considered the South Whitby Light to be now equal to the Calais Light, the difference in consumption of oil in the South Light being in excess over the North Light 13 per cent.

Comparing thus, by way of illustration, one of the best first-class English Lights, admitted to be equal to one of the best first-class French Lights, and assuming the average consumption of oil in England to be, as stated, 474 gallons, To which we add an estimated excess of 13

per cent. consumed at the South Light.

at Whitby 63 gallons,

The total increased average con-

sumption would be 537 gallons.

Therefore, without admitting that the height of the flame in Scotland necessarily renders the light more effective, it is demonstrated beyond all controversy, that in England the present average being 474, nevertheless, with an increased average calculated on the highest estimated consumption of a first-class light, it would only be raised to

537 gallons, which still falls short by 257 gallons of the extraordinary quantity of 794 gallons alleged by the Commissioners to be consumed in Scotland. It is out of our power to give the public any reasonable explanation of the discrepancy which exists.

As for the gratuitous statement that the Elder Brethren of the Trinity House have lately admitted the propriety of returning to the fourth wick, and are now making experiments with a view to ascertain the best possible description of mechanical lamp, all we need say is, that for many years past, long before the appointment of the Commission, the Elder Brethren have been incessantly occupied in devising and testing the best apparatus in every form, for the development of the most improved Source of Lighthouse illumination.

In their unremitting endeavours to perform satisfactorily the important functions entrusted to them, the Elder Brethren have not relied upon their own experience alone. That eminent philosopher and most skilful experimenter, Professor Faraday, whose name is a guarantee of the surest application of the highest scientific principles with sound practical knowledge, has been consulted by the Elder Brethren in all those points in which Professor Faraday's great chemical genius and skill might be available. It would be difficult, or, indeed, as the Commissioners admit, impossible to find the rare qualities of a Faraday combined in any salaried member of a new Board, as contemplated by the Commissioners. United with Professor Faraday in the unremitting efforts made by the Elder Brethren to improve the existing system, Mr. James Chance of Birmingham has contributed his varied, extensive, and practical experience. Without wishing to undervalue the benefits to optical knowledge which other men of talent have conferred upon science, we feel sure that the opinions of these two eminent men, each in his peculiar sphere, would outweigh, in the estimation of the discerning public, all the partial, and often erroneous dogmas which abound in the Report before us. It would appear,

Scientific advisers.

Report,
p. 30.

id.

therefore, from what we have stated, that the present arrangements of the Trinity House are not altogether carried out without "scientific thought." The admirable arrangements made by the Trinity House in every department of its administration furnish the best reply to the unwarrantable observation of the Commissioners,

"That by having secured the services of Mr. Faraday,
 "they are fortunately prevented from ever finally committing themselves to the adoption of any impracticable scheme." The Commissioners, ever willing to wound the Trinity House, make similar damaging insinuations throughout their Report. The animus of these indirect attacks is but too apparent. It might be deemed undignified to resent them and answer them in the tone they deserve.

Whilst referring to these two scientific advisers, we must, however, take the opportunity of noticing, amongst the "summary of defects" recapitulated by the Commissioners, the following :—

Adjust-
ment of
Prisms.
Report, p. 9.

"The dip of the sea horizon below the geometrical horizon has never, in the United Kingdom, been properly taken into account in dioptric lights, although where the light is high above the surface of the sea, as, for instance, 240 feet at Whitby, this makes the important difference of 0·16 inch in the proper position of the flame."

id. p. 10.

"The various pieces of which a dioptric illuminating apparatus is composed have not even been adjusted to the flame and the geometrical horizon with sufficient accuracy."

"The flame in English and Irish lights is kept far too low, owing to the use of only three wicks, and of the Fountain lamp, which burns, on an average, only 474 gallons of oil annually in England, and 442 in Ireland."

id. p. 14.

In noticing this, we must premise that the Commissioners admit "that they found in France the same errors of adjustment." Indeed it is only in Scotland that every-

thing seems to be perfect in the eyes of the Commissioners, who say,—

“ The flames maintained in the Scotch 1st order Light-houses appear to have their sections of maximum lumenosity so high, as in some cases to compensate for this neglect, so far as the lenses are concerned.”

Report,
p. 10,
note.

It might be supposed that these points, or “ defects,” as they are called, of the English system had been for the first time discovered and brought under the consideration of the public, and had at last awakened the Elder Brethren to a new and sudden appreciation of their importance. It is not necessary here to recapitulate the numerous efforts made by the Elder Brethren to accomplish the object in view. But, however, as regards “ the defects ” or neglect connected with the Focal changes and adjustments at Whitby Lighthouse, we may with confidence refer to the official Report of Professor Faraday upon the subject, written long before the publication of the Report of the Commissioners.

Scientific
Report
thereon.

That eminent man having visited Whitby in company with Mr. Chance, and having been occupied eight or nine days in practising new methods of adjustment and correction, he, with more modesty and diffidence than mark the opinions propounded in the Report, “ arrived at a best, if not *the* best, arrangement.” Professor Faraday added—“ The method of adjustment is now so perfect, that the Authorities can hardly require more accuracy than the manufacturer can ensure. The Trinity House may direct, at its pleasure, that the light of one part of an apparatus shall be thrown chiefly in one direction, as the sea horizon, and that of another part in another relative direction, as nearer to the coast ; and I have no doubt, that if the electric light, or any other of the compressed intense illuminations, be hereafter adopted, the principles and methods of adjustment now devised and carried into practice will prove of very great and special advantage.”

Experi-
ments at
Whitby
Light-
house.

The Elder Brethren approved of the adjustment made by Faraday, and directed that it should be the type and

Faraday's
Report
adopted.

pattern of adjustment for all the Octants of both the Whitby Lighthouses.

We could not allow this scientific point to pass altogether unnoticed, because we know how prejudicially a little smattering of newly acquired learning, emanating from authority, operates sometimes on the public mind. It might be imagined that some grievous defect had remained unnoticed and uncorrected in England and Ireland. The very existence of the error is still questioned by competent authorities. That the flame is yet susceptible of improvement, except of course in Scotland, where everything is perfect, no one pretends to deny; but the Report of Professor Faraday proves that everything that the actual state of optical knowledge could achieve has already been done; and whenever any scientific discoverer shall suggest the best remedy, by a nicer adjustment of Dioptric prisms, or otherwise, we are sure that the Elder Brethren will rejoice to be able to adopt it.

Light at the
Point of
Ayre,

Report,
p. 9.

condemned
by the Com-
missioners,

We have no desire to indulge in any satiric vein directed against the often unjust and partial strictures of the Commissioners; but with reference to this very point of Catoptric Lights being "so faulty," and not fulfilling perfectly the conditions required, the Commissioners illustrate this defect by reference to the Light in the Isle of Man. They say, speaking of this Light, "that it throws only a portion of the light produced on the sea, where it is wanted, whilst, on the contrary, a very large portion is thrown upon the sky; and as the Light at the Point of Ayre is revolving and shows all round, it illuminates the highest hills in the Isle of Man, and great part of the light produced is wasted."

This is the unkindest cut of all. We have been told over and over again by the Commissioners in their Report, that the Scotch, by their highly developed superior skill and economy (except in oil), compensated for the neglect exhibited by the English and Irish. What then will be said when we tell our readers that this much-condemned Light at the Point of Ayre, in the Isle of Man,

which illuminates the tops of the hills, and leaves the sea “in culpable darkness,” is not a Trinity House Light, but a Scotch Light, under the management and direction of the Scotch Board! The Royal Commissioners have evidently committed a blunder in mistaking the Light at the Point of Ayre for an inefficient English Light.

is a Scotch Light.

One single word as regards Distinctiveness. The Commissioners recommend the employment of more Red Lights, and “that Red and Prominent White Lights should be “made revolving.” They also condemn the exhibition of “two lights, even on separate towers, in order to form “a distinction from a neighbouring light.” “By this “means, the expense,” they say, “is very nearly doubled; “and where distinction is the only object gained, it appears “to show more prodigality than ingenuity.”

Distinctiveness.

Report,
p. 11.

These recommendations, as may be judged by the language employed, rest upon the most superficial and desultory reasoning. The Trinity House is fully aware of the advantages in power which a Revolving Light bears over a fixed one, and it has been adopted when deemed consistent with the safety of navigation. The too frequent recurrence of Revolving Lights, only distinguishable by the period of revolution, differing perhaps by a few seconds, might lead to mistakes and serious consequences; the uneducated and unthinking mariner not always being competent, like one more educated, to measure with any degree of certainty the periodic recurrence of the Revolving Light; and in unfavourable weather this difficulty is greatly increased. It is for this reason that double Lights are occasionally exhibited by all the various General Authorities, in order to put mistakes out of the question. They have had another advantage, that of being usefully employed as Leading or Clearing Lights.

We must remark here, that the comments of the Commissioners on the distinctness and insufficiency of Red Lights are most misleading and unwarrantable as regards the Trinity House; the deficiency in the number of Red Lights of that Corporation being animadverted upon by the

Report,
p. 11.

Commissioners in their usual inconsequential manner, and “more Red Lights are recommended by them to be made “revolving.” It is the fact, however, that there are no other Red Revolving Lights in the whole United Kingdom except those of the Trinity House.

In the Table (see Appendix, No. 3) the Commissioners give credit to the Trinity House for five Red Lights and thirteen White and Red Lights. If these latter be made up because a Red Light has been introduced here and there, merely to guard a sand or danger, we beg to inform the Commissioners that the Red colour is not for the purpose of distinction, but to meet some local difficulty in the navigation.

We suppose the Commissioners do not claim the merit of having induced the Trinity House to make the Gunfleet a Red Revolving Light, nor those in Cardigan Bay, the Varne, and Prince’s Channel. The decision to make the Hanois and Dowsing Red Revolving Lights was taken before the Commissioners threw their “superior” light over the darkness which previously prevailed. No man of common sense would place a Red Light where he could

Stevenson,
Rudiment-
ary
Treatise,
&c., p. 129. place a White one; but, as Mr. Stevenson remarks, “On a coast so thickly studded with Lighthouses as that of Britain, the number of distinctions is insufficient to supply all our wants, so that we are sometimes reluctantly compelled to adopt a *single Red Light* in some situation of lesser importance, or which, from some local circumstances and the appearance of the lights, which must be seen by the mariner before passing it, is not likely to be mistaken for any other. The great loss of light by coloured media causes the red beam in a Revolving Light to be seen at a shorter distance than the white, and it is conceivable that, in certain circumstances, this might lead the mariner to mistake a *Red and White Light* for a White Light revolving at half the velocity. Such a mistake might perhaps prove dangerous; but the Lights are generally so situated, that there is ample time for the mariner, after first discovering the Red Light, and thus

"correcting any mistake, to shape his course accordingly."

This authoritative explanation from the pen of Mr. Stevenson, while, however, it may perhaps be susceptible of a slight reservation on some points, disposes nevertheless completely of the unjustifiable remarks of the Commissioners; and if the two statements could appear hereafter in the "Index Map projected by our Secretary," the public would be able to appreciate the comments made by the Commissioners at their exact value.

We have thus reviewed the chief points raised by the Commissioners in their Report in respect of number, position, quality, and "sufficiency as regards efficiency" of Lights. Our space forbids us to refer at length to minor points, such as the alleged erroneous position of astragals, want of filters, &c.; but we could easily prove the incessant attention of the Trinity House to such matters, and their regard for the personal comfort and moral care of the men in their employ.

The remarks relating to Fog Signals in the Report are quite valueless from want of precision. As regards the recommendation of Admiral FitzRoy's device for Signalling Storms from Lighthouses, we shall offer no opinion on the matter, as we cannot perceive its necessary connexion with the efficiency of Lights; but when the Commissioners assert unequivocally "that, had such a system existed when "the 'Royal Charter' was lost, that fearful wreck might "possibly have been avoided," it is so completely at variance with a well-known recorded historical fact, that we are astonished that the Commissioners should have hazarded such an assertion. Everybody knows that the 'Royal Charter' was lost on a dangerous lee shore, which she kept in hopes of meeting a pilot. She had previously made the Skerries and Lynas Lights; and the gale in which she was wrecked had commenced twelve hours before she took the ground.

The portion of the Report of the Commissioners upon the subject of the expense of construction and maintenance of Lighthouses is marked by the same spirit of partiality

Fog Signals.

Storm Signals.

Report,
p. 11.

Annual
Register,
vol. ci.
pp. 153,
154.

Mansfield's
Report.

Expense of
Construction
and Main-
tenance.

and injustice to the Trinity House which pervades the whole of the document before us. Under this head, the larger expenditure in the structures of the Northern Commissioners is glossed over, when comparing them with those erected by the Trinity House, and the comparisons made are especially misleading.

The Eddystone Lighthouse, built by Smeaton in the preceding generation, was then deemed the triumph of engineering art. The Trinity Corporation has in the present day erected a prouder monument of engineering skill, at a commanding position on one of the rocks in the Scilly Isles, called Bishop Rock, which stands isolated, and exposed to the accumulated force of the waves which sweep across the Atlantic. Some idea may be formed of the violence of the waves at Bishop Rock when we describe the following well-authenticated facts:—In January 1860, an anvil weighing two hundred weight was washed out of the central hole, which was about four feet in depth and two and a half in width, in the rock; and a bell, weighing three hundred weight, was washed away from the gallery, nearly a hundred feet above high-water mark. Such is the almost incredible force of the waves at Bishop Rock, and thus the isolated Lighthouse built there is exposed to an almost inconceivable shock. The Commissioners extol “the magnificent work” at Skerryvore; they have no commendation to bestow upon the English work at Bishop Rock. The grandeur of that erection must, however, be admired, and its fame will survive and be identified with the Administration of the Trinity House, when the Commissioners and their ill-judged criticisms are forgotten. The Commissioners, in expatiating upon the engineering difficulties to be overcome in these structures, do not omit to magnify those which, in the stormy regions of Scotland, the engineer had to surmount. When contrasting the expense of the construction of the two Lighthouses, the Commissioners state, that “at Skerryvore the workmen, the materials, and “all the requisite stores had to be conveyed a distance “five times as great as that of Scilly.” The precise di-

Bishop
Rock
Light-
house.
Force of
the waves
at Bishop
Rock.

Skerry-
vore,
p. 14.

stance from which the materials were carried in Scotland is not stated; but we must inform our readers that the stone used at Bishop Rock was quarried at Carnsew in Cornwall, and was shipped at Penryn, a distance of sixty miles from the Bishop Rock. The Commissioners give the following estimate of the height and expense of the three following Lighthouses :—

	Height in feet.	Cost.	
“Bishop Rock, England, Scilly Isles	145	£36,559 18 9	Report,
“Bell Rock, Scotland, East Coast .	117	61,331 9 2	p. 14.
“Skerry Vore, Scotland, West Coast	158	83,126 12 1.”	

It is stated that the Skerryvore and Bishop Rock Lighthouses “are, to a certain extent, comparable works, “both being erected on rocks almost covered by the sea at “high water, both far from land, and exposed to the force “of the Atlantic.” The real facts are, that the Bishop is an almost perpendicular rock, with a depth of 17 to 20 fathoms within a stone’s throw all round it. The rock on which it is built is only 52 feet square; and although its summit is above high-water mark, the structure begins, as it were, at the base of the rock. In fact, the lowest course of masonry is built one foot under low-water mark, and the sea had to be dammed out to isolate a space on which to lay the lowest stone. Nothing could be more exposed than this position to the whole force of the Atlantic, and yet the expense of erection only amounted to £36,559. The Skerryvore, with which the Commissioners have compared it, may be described in the words of Mr. Stevenson the architect. A reef of rocks, breaking the violence of the sea, surrounds the spot on which the Lighthouse is erected: the rock itself is 280 feet square, dry at low water; and the rise of tide is 12 to 13 feet spring tides, 3 feet neap tides. “Before the excavation for the tower was made, a “single conical loaf of rock, about 5 feet in diameter, rose “to the height of 18 feet above the level of high water, “and the greater part of the rest of its surface about 6 feet “above the tide-mark.” These facts disprove the alleged

resemblance, and demonstrate the numerous points of difference between the two structures. The Bishop Rock Light was built on a cone, the greater part of which was 19 feet *below* high-water mark, the Skerryvore on one 18 feet *above* it.

Vindication
of Trinity
House.

Having thus briefly referred to the English and Scotch edifices, we may fairly claim for the Trinity House a verdict in their favour at the hands of the public on the counts of greater difficulties in the erection, greater economy in expenditure, and equal if not greater "magnificence" in the structure of these important national works.

Scotch
Light-
houses.
Report,
p. 14.

The Commissioners go on to say—"In Scotland there are a number of modern Lighthouses on the mainland, "as at Girdleness, Buchanness, Covesca Skerries, and Ardnamurchan—handsome towers from 115 to 120 feet "in height, with substantial edifices for keepers around "their base, and these have cost £10,000 or £11,000 for "the building alone. The only Lighthouse on the mainland in England equalling them in height and fairly comparable is that at St. Catherine's Head*, in the Isle of Wight, which cost £7673 17s. 2d. It also is of stone. The Irish Lighthouse at Kinsale, 100 feet high, is somewhat comparable with these Scotch erections, and cost "about £9000.

Report,
p. 14.

"The usual Lighthouses on the mainland of England, or "on rocky islands, built by the Trinity House, are much "smaller erections, often costing no more than from £3000 "to £5000, and rarely exceeding £7500.

"The average cost of a Lighthouse on the mainland, or "on rocky islands, in Scotland, is about £8000.

"In general the Irish Lighthouses, even on the mainland, have been erected at an expense of £10,000; but "this includes the illuminating apparatus, and in some instances the formation of a road."

id. p. 15.

* We suppose we may say with propriety that we have sailed "round" the Isle of Wight, but we have never heard of St. Catherine's Head. We presume the Commissioners refer to St. Catherine Point, which is not a *headland*, but a comparatively low point well-known to all mariners.

In reviewing this statement, in which the economy and administrative capacity of the Trinity House stand out conspicuously pre-eminent, the Commissioners, after launching a sarcasm at the Board of Trade, from whom *alone* they have received complaints respecting the cost of erection of the Scotch Lights, fall in rapture with these edifices : “The Report, p. 15.

“structures erected during this century in that country
 “are doubtless most substantially built, generally of granite,
 “and of great height ; there seems to be very little outlay
 “on mere ornament, and they present a noble appearance
 “as public works. But when the great difference in cost
 “between them and English Lighthouses, designed to serve
 “a similar purpose, is considered, there can be little doubt
 “either that the Scotch and Irish Authorities have not
 “paid due regard to economy, or that the English Au-
 “thorities, keeping economy too closely in view, have not
 “erected edifices worthy of themselves and of the nation ;
 “unless, indeed, there be some circumstances which render
 “similar erections necessarily more costly in Scotland and
 “Ireland.”

The Commissioners, however, cannot get over the plain fact respecting the excessive cost, and they thus resort to these illogical sophistries in order to evade the just and obvious admission of the effective and more economical administration of the Trinity House. The English Lighthouses are painted red or snow-white, and, if less magnificent in structural beauty, are visible as beacons by day as well as by night ; while the handsome Scotch edifices, from want of paint, are at a distance undistinguishable during the daylight.

As regards the comparison with foreign countries, especially with France, the Commissioners discover some “startling results.” They point out that the Phare de Bréhat, comparable to the Bishop Rock and Skerryvore Lighthouses, cost but £23,120. This extraordinary statement necessarily forces them to explain that the above estimate did not include the payments to the Government engineers, the transport of material by Government vessels,

Their ex-
cessive
cost.

Compari-
son with
Foreign
Countries.
Report,
p. 15.
French
Lighthouse
at Bréhat.

and some other matters, and, finally, the “startling results” disappear, and the Commissioners are forced to admit that the above and “other circumstances render the “comparison of little value.” In short, the Commissioners, after reciting the average cost of four Spanish Lighthouses, which was £5,450, the highest being only £7,611; an American first-class Light, which cost £8,600; a Dutch one, of 166 feet high, at West Schouwen, which cost £6,400; a Danish one, at Skagen, which cost £10,673; the Hohe Weg, at Bremen, which cost £10,996; the Norwegian Light, at Little Førder, which cost £7,500; and one built of iron, at Rundö, which cost £10,800—on the whole, comparing these sums with the sums paid in England, and embracing in the respective estimates every consideration of cost, the Commissioners arrive at the conclusion that “the outlay of Foreign Governments in the construction of “Lighthouses, making every allowance for the advantages “which a more centralized system gives in such a com-“parison, appears to be rather greater than the outlay in-“curred by the English Board.”

Here again we have an unqualified admission of the greater efficiency of the Trinity House; and nevertheless it is upon such incontrovertible evidence of facts proving the economy practised in England, that the Commissioners have arrived at a condemnation of our whole Lighthouse system, which they recommend should be transferred to other hands. A more perverse, unjustifiable verdict, in the face of all the proofs adduced directly to the contrary, can scarcely be conceived.

Now, as regards the expense of maintenance, in our Appendix, No. 4, will be found a copy of the Table prepared by the Commissioners, showing the averages, which refer only to first-order dioptric lights, or catoptric lights of the largest description. In this instance we have the old absurdity repeated, of a totally fallacious estimate by averages. In what way, by means of estimated averages, when some Lighthouses have thirty lamps, and some only two, can precision be arrived at?

Cost of
other
Foreign
Light-
houses.

Report,
p. 15.

Superiority
of England
established.

Expense of
Main-
tenance,p.16.

We entreat our readers, however, to cast their eyes at the Table No. 4, where they will find that the excessive cost of maintenance of a first-class Dioptric Light in Scotland, viz. £380, is contrasted with the cost of the same class Light in England, viz. £265. The cost of maintenance of the Catoptric Light in Scotland is £385; in England it is only £340.

The relative charges of the Dioptric and Catoptric Lights differ materially; but the Commissioners say that "it is evident at a glance that, as the Scotch Dioptric Lights burn a larger amount of oil than the English or Irish, they are more expensive in that item; but in this particular, expense becomes a measure of efficiency." We have impeached, in the strongest terms, the correctness of the statement that the alleged excessively greater consumption of oil is necessarily the standard of efficiency. As regards the alleged saving of £1300 by lighting and extinguishing the lamps at tabulated periods, the practice would not be usefully available in a more southern latitude. Until the matter of the discrepancy of the quantity of oil consumed is cleared up satisfactorily, it is evident, to use the profound remark of the Commissioners, there must exist "a greater discrepancy than exactness would warrant."

As regards the expense of maintenance compared with Foreign Countries, we shall content ourselves with pointing out that the total average expenditure of four French Lights on the mainland, given by the Commissioners, is £320 0 0. The cost of similar English Lights is given at £265 5 1

England
and Scot-
land com-
pared.

Report,
p. 16.

Expense of
Main-
tenance.

Vide Ap-
pendix,
No. 5.

Showing an economy in favour of England of £54 14 11

The Commissioners, betraying throughout their bias against the English system, when tabulating the English Lights, add significantly, "Total Expenditure *as returned*" —inferring, we suppose, that some items were suppressed. These insinuations, abounding as they do throughout the Report, are not worthy of observation.

Superior
economy
compared
with
France.

The Commissioners, in reviewing the subject, reiterate the same fallacies which we have before refuted. "The

"French," they say, "pay their keepers much less than is paid by any of the General Authorities in the United Kingdom; but their outlay in oil is, very properly, greater than in England and Ireland." The value of labour in France, as well as that of money, is not taken into consideration by the Commissioners; while their own arbitrary opinion on the consumption of oil is again pronounced authoritatively as a foregone conclusion.

FLOATING LIGHTS.

Floating Lights.

Report,
p. 19.

By the Table (Appendix, No. 6) of the number of Light-Ships in position in the United Kingdom, it will be seen that thirty-four have been placed, and are maintained, by the Trinity House. In this respect, the Northern Commissioners figure as a total blank; the Dublin Board has four; France has only two; and Spain has not established any. In the United States, "the vessels used frequently to leave their stations and run into harbour in heavy weather." In England, the Light-vessels, it is admitted, very seldom go adrift; and there is no instance on record in which the crew have voluntarily run from their stations in bad weather. When they have been driven from their moorings, the vessels have always been replaced in a very short time; and none have ever been wrecked; nor have the Lights ever been accidentally extinguished.

Such is the evidence put on record by the Commissioners; but they have not one word to say in commendation of Trinity House administration in this respect. We must, however, take leave to affirm, that if the Trinity House Authorities had not been men of practical knowledge, or had been deficient in "scientific thought," the position and permanent stability of the Floating Lights would not have been so uninterruptedly secured. The new vessels of the Ballast Board are of larger size than many of the older built English vessels; but the superiority claimed for the Dublin vessels is only obtained at an increased expenditure of £2600 each. Most of the Trinity House

vessels have been built many years ; but the Commissioners pass unnoticed the modern ships constructed by them, which are unsurpassed in all the qualities essential to accomplish the objects for which they are destined. The Commissioners, by their very superficial remarks, leave the impression that the existing forms of Light-Ships are susceptible of great improvement ; and doubtless, in the present age of scientific progress, certain modifications, after practical experience of their utility, may be made ; but if the test of efficiency is safe-riding, the certainty of exhibiting Lights,—and of keeping station, and it is admitted that these conditions are fulfilled by the vessels of the Trinity House,—any additional expense incurred in building ships of larger size might indeed, upon very reasonable grounds, expose the Authorities to a charge of prodigality.

We could dilate much upon the whole question of Light-Ships, the special purposes of which the Commissioners do not appear to comprehend. We must, however, say one word upon the question thrown out in the most speculative and superficial manner by the Commissioners, “ whether “ the dioptric principle might not be more generally intro-“ duced into Floating Lights, and whether some of the “ improved methods for producing light could not be “ adopted afloat ? ” The Commissioners allege that in three instances the Dioptric principle has been adopted, one of which is at Stockton-on-Tees, and “ they recommend the “ more general adoption of the principle.”

We must, in passing, deny that the instances referred to prove in any way the adoption of the principle, these special cases being entirely exceptional.

The intelligent reader is well aware that the Source of Light in Light-Ships is necessarily the combustion of oil. The apparatus by which the light is directed to where it is needed consists of silvered reflectors and Argand lamps.

We shall not discuss the question whether the most exposed situations for a Light-Ship are the most dangerous or disagreeable, nor which is the spot where the “ nastiest ” sea is to be found, whether at the embouchure of rivers, or

Form of
Light-
Ships.

Dioptric
principle
recom-
mended.

Report,
p. 18.

Light in
Light-
Ships.

Report,
p. 17.

in the open sea; but we will take the evidence of the Commissioners themselves, as they say "that when the wind is strong, and its direction across a strong tide, a vessel often rides broadside to the sea. In the open sea the tides are not so strong, and the waves are longer. "The Light-vessel at the Goodwin was seen by the Commissioners so riding, to windward of her moorings, broadside to the sea, and rolling heavily." Now, this graphic and pretty significant description of the "heavily rolling" motion of a Light-Ship, in an exposed position, is obviously intended to convey a reproach against the build of the Light-Ship. Until the Commissioners point out some practical remedy for this, we must expect a ship to roll, and, what is still more inevitable, the oscillation of the light will be more or less excessive and rapid.

Dioptric principle inapplicable to Light-Ships.

Now, with all these unavoidable circumstances of a rolling sea and consequent oscillation of the Light, and keeping in view the indispensable condition of success to the Dioptric principle laid down by the Commissioners, and in which the Elder Brethren, we are sure, perfectly concur, namely that the dioptric prisms should be adjusted with faultless mathematical accuracy to the smallest fractional part of an inch to the horizon, the Commissioners actually propose the substitution of the Dioptric principle for Floating Lights.

It is self-evident that the Commissioners, in making this recommendation, pronounce a sentence of self-condemnation upon their own total want of judgment, and we leave them to extricate themselves in the best way they can from the dilemma in which they stand placed by publishing to the world their own inconsistent and irreconcileable theoretical speculations.

BUOYS.

Number of Buoys. The number of Buoys in the United Kingdom is given in our Appendix, Table No. 7. The great relative prepon-

derance of the Trinity House Buoys in position and in reserve will be eminently conspicuous.

In considering the important question of Buoyage, we must recur to Lord Clarence Paget's attack upon the existing system, in his speech already referred to, and in which, as on the subject of Lights, his Lordship extolled the superiority of the French system, and derided and decried our own. His Lordship, as he said in his speech, "honestly" told the French Authorities that great benefit would be conferred upon our Shipping Interests "by taking a leaf out of their book;" and, indeed, nothing short of a National uniform system of Buoys, painted of one colour on one side a channel, and another colour on the opposite side, would satisfy his Lordship.

The Commissioners say, "Till lately there was no attempt at uniformity in any part of the British Isles; but the Northern Commissioners adopted a system, the main feature of which is placing red buoys on the starboard side in entering the harbour, and black on the port hand. The Irish Board have frequently adopted a system too, but it is exactly the reverse of the Scotch; and only last year the Trinity House have decided to buoy channels uniformly, but on a totally different plan, namely red or black buoys to starboard, and chequered to port; but they do not contemplate applying it to channels already buoyed."

The Commissioners admit that there is no ground for dissatisfaction in the position of the English Buoys. They also place the fact upon record, that "of the 356 Trinity House Buoys in position, only 14 broke adrift in 1858." The Commissioners might have added, that those which broke adrift were Buoys of minor importance. But the Report, as it stands, furnishes conclusive testimony as regards the stability of the Buoys; and when it is considered that the Buoys on the Helwick and Skewweather in the Bristol Channel have to maintain their position in spite of the S.W. wind and "rasping tides;" at the Rundlesstone in a race; at the Manacles in 20 fathoms water; and

French uniform system.

Various systems in the United Kingdom.

Report,
p. 20.

that the Buoys at the back of the Goodwin, at the Gabbards and Cross Sands, are exposed to the violence of the winds and waves, and contingencies of all kinds, their occasional displacement would not be a matter of surprise, but rather it is a wonder that they should hold at all.

We need not enter into the question of sufficiency, as the Commissioners say—"That the coasts of the United Kingdom are better supplied with Buoys than any foreign coasts is borne out by the almost unanimous opinions expressed by 488 persons who follow the sea."

Report,
p. 20.

id.

Again, as to quality—"The Buoys in foreign countries do not appear to equal those of the British Isles, either in size or general efficiency; but the adoption of a National system of Buoyage, as in France, is evidently an advantage."

We must confess that we are not quite so enamoured of French uniformity, or indeed of everything French, as Lord Clarence Paget, or as the Commissioners avow themselves. No doubt it is very amusing, and will always raise a smile, especially in the House of Commons, to ridicule the notion of the conceivable possibility that an enemy, favoured by a fresh system of Buoyage, "could hereafter sail any night up the Thames and burn Chatham." But, quite apart from all political considerations, and looking at the question as strictly confined to the interests of commerce and the safety of human life, we must refuse to admit the expediency of adopting a system of uniformity as regards Buoyage.

Speech of
Lord C.
Paget,
April 1858.

Black
Buoys and
Red Buoys.

The Elder Brethren of the Trinity House are as well aware as the Commissioners that Black and Red Buoys are more conspicuous than White; but when we are required to copy a uniform system of buoyage to be adapted to a most intricate, difficult, and variable navigation, we must hesitate before we countenance the adoption of any such universal change as Lord Clarence Paget or the Commissioners propose. A system of Black Buoys on one side the Channel and Red Buoys on the other would lead to inextricable confusion. Some of those which now exist have been placed in their positions for more than a century, and

continual additions have been made to meet the requirements of increasing navigation.

The Trinity House by its admirable system of Buoys has not merely made each Channel distinguishable from the one on either side of it, but has also rendered each buoy so distinguishable, that even in a fog, the navigator, though a stranger, may, with the aid of his chart, know his exact position by the bearing of any buoy of which he chances to get sight, which would be impossible if the buoys were of uniform colour. The Trinity House system, or “want of system,” has so far answered its purpose, that any accident from mistaking a buoy has not been known to occur for many years, although 60,000 vessels enter and leave the Thames annually.

When Lord Clarence Paget complimented the French Authorities upon their much-lauded system which he sought to imitate, we shrewdly suspect that M. Reynaud “reciprocated” similar courtesies, extolled the Trinity House system, and smiled at his Lordship’s simplicity or “honesty.” We have already adduced the testimony of M. Degrand to the effect that “the English organization left almost nothing to be wished for.” Let us add that able engineer’s opinion with respect to the Buoyage of the Thames :—

“En prenant, pour exemple, la Tamise, qui à elle seule “compte, depuis son embouchure jusqu’à Londres, près de “soixante-dix bouées, le nombre de caractères différents “assignés à ces bouées ne dépasse pas dix-sept; et cependant, “pour vingt-deux routes différentes que les pilotes peuvent “suivre à l’embouchure de la rivière, les combinaisons em- “ployées sont suffisantes pour qu’on ne rencontre jamais, “dans le voisinage l’une de l’autre, deux bouées présentant “exactement les mêmes apparences*.”

M. De-
grand's ap-
proval of
Trinity
House
Buoyage.

Le Bali-
sage et
L’Éclairage
Maritime.
8vo. Paris,
1856, p.104.

* “Taking the Thames, for example, which alone numbers, from its mouth up to London, nearly seventy buoys, the number of different characters assigned to these buoys does not exceed seventeen; and nevertheless, for the twenty-two different channels by which pilots can enter the mouth of the river, the combinations employed

Report of
Select
Committee,
Merchant
Shipping,
1860.
Q. 6476.

Captain Sulivan, R.N., C.B., in his evidence given last year, says, "If we take the Thames for instance, which is probably the most intricate navigation of our coasts, it is now so lighted and buoyed that a stranger with a chart in his hand, if he was at all capable of navigating his vessel, could bring her in and out of any one of the channels. It is literally marked, like a roadway, by posts; and a man, unless he was quite unfit to command a vessel, with the chart of the Thames, with the present buoys and beacons marked on it, ought to be able to bring his ship through any of the channels. I will illustrate this by one fact, which happened to myself. I was going down with a ship, never having been through the channels of the Thames before, except the 'Swin,' through which I took my ship out and home."

Inexpediency of a change of system.

With this concurrent testimony of one of the most eminent French engineers, having a specialty with respect to the whole subject, and that of the above distinguished officer attached to the Board of Trade, as well as the general approbation of a multitude of witnesses who express themselves in favour of the perfect arrangements of the Trinity House, it would be absolutely senseless, and indeed it would be an act of infatuated destructiveness, to disturb and overthrow a system which has endured for so many generations—a system with which every British mariner has become conversant, and which moreover is the model upon which many maritime countries in the world have organized their respective Buoyage systems.

BEACONAGE.

Report,
p. 21.
Vide Appendix,
No. 8.

The Commissioners say that "the Beacons they have seen abroad, and those described in the Returns from are so well distributed, that two buoys exhibiting exactly similar characters are never found in close neighbourhood of each other."

"Foreign Countries, do not seem to be better than those
"of the United Kingdom, except in so far as there is a
"National System."

Here again we have a national system commended, without any reason given for its adoption. A so-called "uniform" system in these matters may be compared to the expression "equalization" in fiscal arrangements. Any one who has paid the smallest attention to such subjects knows perfectly well that with a regulated "uniformity" or "equalization" great dissimilarity and inequality may result; and both are often as impracticable in science as applied to mechanical operations, as they prove to be in political economy. The principle of judicious discriminating differentiation must be resorted to in all cases where every conceivable degree of diversity exists, as in the navigation of the British Channels.

EXPENSE OF MANAGEMENT.

The Commissioners admit that it is very difficult to compare the expense of management by the three Great Lighthouse Authorities. The different character of their respective functions and works renders, in fact, any complete and decisive comparison absolutely impossible. We shall, however, demonstrate that the affairs of the Trinity House, in its general system of management and expenditure, involving as it does the expense of superintendence over other General and Local Authorities, and other charges not brought under consideration in the present inquiry, are managed with as much regard to economy as the business of any of the coexistent Boards. The work performed by the Trinity House, whose administration has been at various periods the butt against which political popularity-hunters have directed their attacks, insinuating against this Corporation all kinds of jobbery, has, we think, been discharged in a manner which reflects honour upon the country, and, we conscientiously believe, as economically

Comparative Expense of Management.

and as efficiently as similar services are executed by any administrative department in the Kingdom.

Total Expenditure against Total Management.

The Royal Commissioners, having found themselves unequal to prepare any tabulated statement which would exhibit the actual expenditure and cost of management in all their features, have employed the services of a practical statistician, with a view to contrast the expense of management of the General Authorities with the amount spent in constructing and maintaining the whole works under their charge*.

Ratio of Charges and Expenditure.

Referring to the Table in the Appendix, No. 9, in columns I., II., III., the ratio of charge to the total expenditure of the Trinity House is made 18·6 per cent., whilst that of the Commissioners of Northern Lighthouses figures at only 7·4, and the Dublin Board at 8·4 per cent. This difference is easily accounted for by the fact that the excessive charge of Light-Ships, the cost of Floating Vessels, Superannuation, and Charities, still payable under Act of Parliament, together with other items which do not fall upon the Scotch and Irish Boards, constitute heavy charges in the expenditure of the Trinity House, and therefore the comparison is quite delusive. The apparent excess in the ratio to the total expenditure connected with the salaries and other expenses of the Central Office, exhibited in columns IV. and V., is easily explained by the greater quantity of work executed at the London Board, in the superintendence of Light-Ships, Buoys, and Beacons. We venture to affirm, that there are no officers in the Kingdom in any department of the State, or, indeed, in any private establishment, who perform more arduous and more important services than the Elder Brethren, with so little remuneration. They hold

Services of the Elder Brethren.

* The Commissioners, although the whole question of taxation, or the source of the funds by which the Lights, Buoys, and Beacons are sustained, was especially withdrawn from their consideration, have disregarded this, and they announce that, "with great labour and at considerable expense," they have prepared information on this subject. Until this information is published, it would be premature to offer an opinion on the subject.

their office as a position of dignity and honour, which they have gained by the character they have respectively acquired of special nautical attainments, and practical experience in their profession. The Corporation having enjoyed uninterruptedly the confidence of the Crown, the Parliament, and the Merchant Navy during nearly four centuries, every sincere friend of our ancient institutions must be of opinion that the Elder Brethren would not be acquitted before the world, if they did not repel the attacks, now for the first time levelled at the Corporation, and impeaching their administrative capacity and integrity.

The Commissioners having admitted that it was beyond their power to make any fair comparison of the expense of management by the three General Lighthouse Authorities, mainly on account of the different character of their respective works, they set about an attempt to compare the amount expended in Management and Maintenance of vessels with the work done.

We have reproduced this Table in Appendix No. 10. The Commissioners, in drawing attention to this Table, say, "It will be seen that the sites illuminated by the "Commissioners of Northern Lighthouses, and the Ballast "Board, amount together to 119, thus just exceeding those "illuminated by the Trinity House; and that the amount "of oil consumed (a measure of the light produced) is con- "siderably more; but that, on the other hand, the spots "buoyed in Scotland and Ireland together amount to only "145, which is 211 short of the number buoyed by the "Trinity House. The cost of maintenance and repair of "the whole is considerably more by the English than by the "other two Boards together; but when it is remembered "that the Trinity House maintains so many Floating "Lights, this will not appear surprising." But, having made this proper explanation, they add: "This fact, how- "ever, and the additional 211 buoys, *seem not competent* "to explain the £35,125 9s. 9d. which the Trinity House "spends in management over and above what is spent by "the other two Boards together."

Management and Maintenance of Vessels, and work done.

Management and Maintenance, and work done.

We have made some unsuccessful efforts to unravel the principle and details upon which the Commissioners have founded their statement, and we will only repeat, that the account as drawn up, of Management and Maintenance of vessels, with a view to compare those branches of expenditure with the work done, gives an imperfect view of the whole system, as the general charge of superintendence performed by the Trinity House necessarily involves a large outlay in vessels and cost of services which the other General Authorities do not incur.

Contradic-tory reason-ing in the Report.

Report,
p. 34.

We do not think it necessary to dwell any longer upon the question of expenditure in Management, as nothing will satisfy the Commissioners in that respect. If economy is practised, they question whether it be true economy; and they accuse the Board of Trade of having steadily kept economy rather than progress in view, and the saving thereby effected they represent as false economy; and other insinuations are thrown out with a view to damage the existing system in the estimation of Parliament and the public. In the next sentence, the Commissioners, still inveighing against the Board of Trade and the Trinity House, make the statement that £10,000 additional to the demands made by the Northern Commissioners was expended in a Lighthouse at Shetland, because one site was preferred by the Board of Trade to that recommended by the Northern Commissioners. The Royal Commissioners animadvert upon the whole proceeding, and tell the Board of Trade that the Northern Commissioners are still of opinion that they were in the right, and the Board of Trade and the Trinity House are both wrong. Nevertheless, with these exaggerated statements, levelled against a double government, which, it is alleged, involves endless references to the highest controlling authority, and causes unsatisfactory correspondence and prejudicial delays, the Royal Commissioners actually propose to transfer to the Admiralty the final arbitrement of all these duties; and, as we shall see, they would, practically, make the floor of the House of Commons the scene upon which all

these alleged contentions about construction, rates, charges, management, expenditure, and taste in Lighthouse architecture should be finally deliberated and contested.

We must in this place notice briefly another subject. The Commissioners point out that “a very large portion of “the expense incurred by the Trinity House is for District “Tenders and Superintendents. It amounted in 1858 to “£19,012 4s. 8d.”; and then the Commissioners, in the face of all experience, and in apparently profound ignorance of the subject under consideration, add, “This sum “might be mostly, if not entirely, saved by the employ-“ment of the staff of the Coast-guard, and the steam “gun-boats and sailing tenders of that force—a force “which is likely to become a permanent institution of the “country.”

Now, in the first place, the proposed sweeping transfer of the command and management of a well-appointed and well-equipped establishment of vessels now employed as tenders in the service of the Trinity House at the various localities where they are incessantly required, and built expressly and well-adapted for their special purpose, is to be made over to the Coast-guard—that is, to the State, and to be managed by the subordinate naval force known under the above appellation. This hypothetical imaginary scheme rests upon the preliminary assumption or fallacy that Parliament will hereafter take upon itself the whole of the aggregate expenditure of Lighthouses, Buoys, and Beacons. Without raising that question here, we must protest against the folly—we can describe it by no other word—of supposing that any money can be saved by transferring the charge of this service from one body perfectly fit to direct it, to another body totally inexperienced in the business. If the Royal Commissioners had examined into the various duties of the Trinity House and their agents, and into the multifarious accounts which pass through their hands, the perfect order in which their accounts are kept, the payments they have to make monthly to the various parties employed under the Corporation, banking transactions, &c., the Com-

Absurdity
of the
scheme.

missioners could not, with common sense and honesty, have recommended that duties of such importance could have been transferred to the supervision of any naval officer whose gun-boat might for a limited period happen to be stationed in the vicinity of a Lighthouse.

During a period of hostilities, the commander of a gun-boat might be called upon to neglect military duties, in order to transport glass, cylinders, lenses, stores, &c., and to inspect these Lights for the purpose of making alterations in the delicate processes of scientific illumination. The proceedings of one officer, who might by chance be stationed near a Lighthouse, would probably be reversed by his successor, or *vice versa*. It is quite absurd to suppose that the business would be as well performed as at present, when it is conducted by experienced persons, specially educated for the purpose, and acting under a complete organized system.

Report on
Manning
the Navy.

With a view to greater economy the idea is altogether delusive. The Coast-guard was only transferred from the Customs to the Admiralty in the year 1856, and we have the authority of the Royal Commission which sat in 1859, that at present its numbers are insufficient for the protection of the revenue, and for the discharge of those duties for the preservation of life and property in case of shipwreck, which a recent statute has assigned to it. And yet, with these facts known to every Member of Parliament, that the Coast-guard has already duties to perform actually requiring an increase of their force, the Royal Commissioners seriously propose to employ the staff of the Coast-guard for Lighthouse services, and pretend to say that by such a transfer the expense would be mostly or entirely saved. It is quite inconceivable to suppose that Parliament would ever consent to any such ill-considered project.

CHANGE OF SYSTEM OF GOVERNMENT.

Change of
system.

We fear that we have already wearied our readers by so many repeated references to technical details connected

with our Lighthouse system, but the Report of the Royal Commissioners rendered such a course absolutely unavoidable. We have, we believe, noticed the main points contained in the recent Report in reference to administrative government in England. Reserving the right at a future period to discuss various details which we have been compelled to pass over unnoticed, we have now, lastly, to consider the great and sweeping change of the Executive system proposed by the Royal Commissioners. Their proposition may be summed up in a few words. Considering the alleged imperfections of the existing treble government in England, which, by an infelicitous figure of speech, is transformed into a "triangular" government for the Irish Lighthouses, and a "quadrilateral" government for Scotland and Ireland, the Commissioners recommend that this government should be quintupled, and the House of Commons be made the appellate authority, where all Lighthouse business shall be finally disposed of.

We must insist upon it that this would be the effect of the change proposed. The Commissioners recommend, in conformity with the previously expressed authoritative opinion pronounced by their Chairman, Admiral Hamilton, that the Government and Management of the Lights, Buoys, and Beacons in the United Kingdom, and of certain Lighthouses in the Colonies, should be vested in a new Central Board, constituted of eleven persons. The name of an ancient Corporation, identified as it is with time-honoured associations, is to be perpetuated, but stripped of its power and influence, and no longer possessing the advantage of that knowledge, judgment, and experience which, in its collective capacity, it has exercised for the benefit of the Merchant Navy of the Kingdom and the public interests throughout many generations. The new Board is to be called the "Trinity Commissioners for Lights" *only*. Four members are to be elected by the Elder Brethren, in such a manner as to ensure the retirement and election of one member annually after the first four years; and to these four are to be added one member for Scotland, to reside in

New system
proposed.

Constitu-
tion of New
Central
Board.

Report,
P. 39.

Edinburgh, and another for Ireland, to reside in Dublin, elected every four years—the whole to be eligible for re-election; and in addition to the above six members, who should be engaged in no other business, “one other member is to be selected by the Government, with special reference to his scientific acquirements in those branches of knowledge which relate to Coast Illumination: the whole subject to the approval of GOVERNMENT, and to have salaries commensurate with the importance of their duties and with the necessary engagement of their time.”

Proposed New Board. To these it is proposed to add the Astronomer Royal, the Hydrographer of the Admiralty, the Comptroller-General of the Coast-guard, and one of the Professional Members of the Board of Trade, which last four persons would be *ex-officio* “Trinity Commissioners for Lights,” and are to be liberally paid for their attendance at the Weekly Boards, “or oftener if summoned.”

The Commissioners admit frankly that the appointment of “a governing body, such as is sketched out above, implies “the transference to it of the Lighthouse duties of the “Board of Trade, Trinity House, Commissioners of Northern Lighthouses, and Ballast Board.”

Thus the whole existing system established for centuries for the discharge of the ministerial duties now performed by the officers of the Trinity House and the other coexisting bodies is to be overthrown and superseded.

Its Staff. The new Central Board is to be provided with a Staff: the Chief Officer of this staff is to possess qualifications of a special order, “such as are only to be found in a person trained to the business of what the Astronomer Royal, in his letter of the 10th of November last, aptly terms an ‘Optical Engineer.’ Such an officer is to be appointed, together with three Inspectors of Lights, one for each country, who should themselves be well acquainted with optical engineering.”

To be visited by the Royal Society. The Royal Society, by Royal Warrant, is to be authorized to make an annual visit of inspection; and the officers of the Coast-guard are to aid in the Lighthouse

service; and lastly, the new Board is to be represented in Parliament.

The Commissioners on this point say, "Whether the funds to be provided for the Lighthouse service continue to be raised by dues, or *by the simple and more economic mode of a tonnage rate*, or ultimately from Imperial funds, the estimates regulating the amount of these funds will have to be submitted to Parliament; and as the proposed Central Board would not be represented in, and would not be directly responsible to Parliament, some department of Government will have to present the estimates to the House of Commons, and, whatever that department might be, it would necessarily *in some sense be responsible for those estimates*; but this responsibility should extend no further than to the being able fully to explain the several items of those estimates to the House."

Its Representation in Parliament.

This representative body the Commissioners propose should be either the Board of Trade or the Admiralty.

By a long argumentative process the Commissioners show their preference, and "lean" towards the Board of Admiralty. They assume, altogether erroneously, that the Board of Trade and the Trinity House "have more or less *leant upon the Admiralty in fulfilling their duties*," and insist that there is a "necessary affinity" between the Hydrographic Staff of the Admiralty and the Lighthouse Service. Whilst, on the other hand, the Commissioners admit that the Board of Trade has since 1854 acquired much valuable experience, and devoted great attention to Lighthouse business, and has "most scrupulously kept in check all Lighthouse expenditure," nevertheless the Commissioners, by a most inconsequential conclusion, leave it an open question, to be decided by Government (and not by Parliament), "whether the Board of Trade or the Admiralty is for the future to represent our Lighthouse Government in Parliament." The Commissioners, next reverting to the unanimous opinions of the several Parliamentary Committees, embodied as those opinions are in the recommendation of the Committee of 1845, viz. "that

Preference given to the Admiralty.

Limitation
of repre-
sentative
respon-
sibility.

“ all expenses for the erection and maintenance of Light-houses, Floating Lights, Buoys, and Beacons on the Coast of the United Kingdom be thenceforth defrayed out of the Public Revenue”—the *representative duties* they say “ would be confined to the presentation of estimates of a simple nature prepared by the Trinity House Commissioners in a comprehensive form, and the *acquiring of information necessary* for the full explanation of these estimates to the House of Commons.”

We have thus, in as few words as possible, recapitulated the whole scheme of the Commissioners, as embodied in the Report; and we confidently anticipate that, having carried the attention of those readers who are interested like ourselves in the consideration of this important subject through the previous pages, we have demonstrated that no just or valid reasons have been given by the Commissioners for the sweeping changes they propose.

Objections
stated.

We shall, as briefly as possible, state the objections which we believe both Parliament and the Shipping Interests will make to the adoption of any such project as that which Admiral Hamilton has originated. The Commissioners, transgressing the bounds of inquiry fixed by the Royal Command, have irrelevantly, on more than one occasion in their Report, brought under notice the great Parliamentary question, as to the source whence the Funds to defray the Lighthouse expenses are to be derived—whether “ by dues, or by the simple and more economic mode of a tonnage rate, or ultimately from Imperial funds.”

Modes of
raising the
requisite
Funds re-
capitulated.

We are thus forced reluctantly to touch upon this important question. Until Parliament shall henceforth consent to take upon itself the whole Lighthouse expenditure, as well as that of Buoys and Beacons, it is obvious to every reflecting mind that the whole scheme proposed by the Commissioners has no Parliamentary or constitutional basis upon which it can rest. It is baseless as the fabric of any other political vision.

The suggestions made in Parliament at various periods to establish a new Central Board, have had their origin

mainly in the desire which not a majority, but only a portion of the Shipping Interests entertain to throw the entire charge upon the State.

We will give, in few words, an exposition of the whole question, in the shape it must inevitably assume whenever brought forward hereafter in Parliament. It is undoubtedly a legitimate and fair mode of raising the requisite funds for the construction and maintenance of Lighthouses by levying just and moderate Light Dues upon the Shipping Interests, which are specially benefited by the advantage of such public works. It seems scarcely possible, according to the *dictum* of Adam Smith, "to invent a more equitable "tax for maintaining such works," the whole charge being merged in the price of freight, and ultimately paid by the consumer. The present system, which fixes the toll according to the benefit derived, is perfectly fair in principle and practice; and we are led to concur with the opinions of the Lords of the Committee of Privy Council for Trade, pronounced after great deliberation, "that to sacrifice this "advantage for the greater apparent simplicity of a tonnage rate would be a great mistake."

By a Table prepared by the Board of Trade, in reply to a proposition to levy an annual sum per ton in lieu of Light-Dues per voyage, it was shown that a difference of from 8s. 2d. per ton to £4 9s. 11d. would be payable by different vessels; and "whatever that rate might be, without reference "to the nature and number of their respective voyages—and "however the number of distinctions and qualifications "might be increased by which the unfairness of the system "might be reduced—so, in proportion as the number of "distinctions is increased, simplicity must be sacrificed, "and no possible distinctions can render the proposed "system as fair as the present one."

We presume that this authoritative opinion is conclusive against the change from the present system of collecting a separate toll for each Light which a vessel passes. The present system may appear complicated; it is nevertheless well understood, causes little trouble or dispute, gives rise

Fairness of
a general
Toll.

Letter of
Board of
Trade,
April 6,
1860.
Report on
Merchant
Shipping,
1860,
Appendix,
No. 12.

Inequality
of a Ton-
nage Rate.

Advantages
of existing
system.

to no opportunity of evasion, and costs not more than $2\frac{1}{2}$ per cent., which will be reduced, as the commissions formerly paid to collectors of Customs cease.

Opinion
of the
Govern-
ment as to
an Imperial
tax.

Hansard,
August 4,
1859.

Having therefore disposed of that point, we need only refer to the declaration made by Mr. Milner Gibson the last time when this question was formally raised in the House of Commons. The President of the Board of Trade said, after pointing out that the sums collected by Light-Dues were no longer applied to the Debts of the Trinity House, incurred in the purchase of the private Lights of the Kingdom, and to charitable pensions granted by that Corporation, but were now dedicated exclusively to the maintenance of the Lighthouses, which were mainly for the benefit of the Mercantile Shipping of the country, remarked as follows:—“As to the proposal of defraying “the expense of the Lighthouses out of the public revenue, “it was a question more for the Chancellor of the Ex-“chequer than the Board of Trade; but he doubted if the “Chancellor of the Exchequer was prepared to throw so “large a sum as £200,000 or £300,000 a year on the “Consolidated Fund, or whether the House of Commons “would consent to entertain the suggestion. *He could “not hold out any expectation that the Government would “make such a proposal.*”

General
opinion
adverse to
any change.

It would appear from this unequivocal declaration of the present Ministers of the Crown, confirmed as it was by the whole tendency of the evidence given by Mr. T. H. Farrer, of the Board of Trade, before the Select Committee on Merchant Shipping last year, that the opinion of the Government is opposed to any change in the *mode of raising* the requisite funds for Lighthouse purposes; however, it will doubtless be their desire to reduce and regulate the Light-Dues at the earliest possible period.

Powers and
Rights re-
served by
Merchant
Shipping
Act, 1854.

Now the powers and rights of the existing General and Local Authorities were specially reserved by the Merchant Shipping Act of 1854. The power of raising funds was perpetuated in the respective Authorities, and Parliament merely conferred upon the Board of Trade the power of

control, audit, regulation, and revision. The House of Commons at present, when taking into consideration the annual estimates, only entertain and sanction such votes respecting Lights as are maintained out of the general taxation of the country (such as Colonial Lights), as provided by law. Therefore, until Parliament assumes the charge, cost, and responsibility of managing the Lighthouse system in the United Kingdom, it is quite inexact to state “that the *estimates* regulating the amount of these funds “will have to be submitted to Parliament.” The Commissioners misconceive the constitutional form and substance of the whole proceeding. The Board of Trade at present, pursuant to Act of Parliament, lays before the House of Commons an account of the Mercantile Marine Fund, showing the income and expenditure for the year ; but no Parliamentary action follows, nor is any portion of the funds embraced in the accounts included in the Appropriation Acts of each year. In point of fact, the House of Commons has, *quoad hoc*, nothing to do with the matter. It has secured full publicity of the accounts, and all parties agree that the utmost vigilance has been exercised by the Board of Trade—indeed to such an extent, as the Commissioners allege, that it has led to a “false economy.”

Therefore, as regards the *mode* of raising the requisite funds in future, the most unequivocal opinion has been expressed by successive Governments against any change of the existing system, by which a very large proportion of the total revenue is contributed by Foreign Ships ; and as regards the present administration and control over the funds collected, we have shown, by the evidence of the Commissioners themselves, that not a shadow of complaint can be preferred, either against the Board of Trade for want of due vigilance in watching over the expenditure, or of undue interference with the General Authorities, so as to cause impediments in the execution of approved works ; neither still less against the Trinity House and other General Authorities for any shortcomings in the performance of the important duties assigned to them.

Repo
p. 41.

17 & 18
Vict.
cap. 104,
sec. 429.

Constitu-
tional
power of
Parliament.

No grounds
for change
of system.

Effect of
double go-
vernment
on expen-
diture.

The Board of Trade, it is true, shortly after the passing of the Act, at the time when Mr. Lowe was Vice-President of that Department, claimed the merit of having effected a saving of £90,000 a year in the expenditure connected with Light-Dues; but that Right Honourable gentleman, although called upon, omitted to explain to the House that the completion of the payments of the principal and interest, provided for by annual appropriation from the general funds of the Trinity House for the absorption of Private Lights, was effected a short time after the passing of the Act of 1854. The cessation of these payments, amounting together to £60,000 a year, and the payment of £30,000 a year, before paid by the Trinity Board to decayed Merchant Seamen, their wives and orphans, and now discontinued, made together the sum of £90,000, which he took credit for having effected; when, in point of fact, the reduction followed from previous arrangements in which the Board of Trade had no participation or control. Accordingly, in justice to the Trinity House Corporation, it must be stated that the double government established in 1854 has had little or no practical influence in effecting subsequently to that measure a general reduction of expenditure. The annual publication of the accounts of the Mercantile Marine Fund has tested the efficiency and correctness of the existing financial system; and the proposition made by the Royal Commissioners in their Report, even if its adoption were not inconsistent with all Parliamentary usage, would, in the form they suggest, furnish no new check in respect of control over expenditure.

Recapitu-
lation.

Therefore, having shown to our readers the exact bearing of the whole question as regards the preliminary and essential point of taxation—having pointed out the difficulties incidental to the establishment of a tonnage rate, and the objections raised thereto by the Government—having reproduced the declaration of the present Ministers of the Crown in opposition to the proposition that the whole charge should be thrown upon the country at large

—we are compelled, until Parliament shall sanction other arrangements, to fall back upon the existing system of raising the requisite funds. The Commissioners, however, insist that their ill-considered scheme of change of government is applicable to the state of the existing law, as laid down in the Merchant Shipping Act of 1854, which we wholly deny; and even if it could by any conceivable possibility be brought into operation in spite of the provisions of that Act, we deliberately assert that its adoption would be in the highest degree objectionable, for the following reasons:—

First, that it is inexpedient and uncalled for.

Secondly, that it is more expensive, and not so efficient.

And thirdly, that it is impracticable, and at variance with our constitutional system of government.

In our introductory observations we pointed out that the functions performed by the Trinity House had been at all times deemed of such national importance, that in every vicissitude of our history it had been agreed by common consent, and with a view to the public good, that no political or undue influence should interfere in the discharge of those important duties. In one word, the safety of life and property, the interests of commerce, together with the national considerations depending upon the proper and effective administration of the Lighthouse business and other maritime duties, rendered it indispensable that to some trustworthy body should be confided the active superintendence and management of the entire system. During the last half-century, in which so many political changes have been suggested and effected in our administrative, municipal, and domestic institutions, the Trinity House has by no means escaped scrutiny, and the invariable result, as we have already shown, has been that, whatever political party may have been in power, the Trinity House has been looked up to as a body so fixed, so assured, so settled, which had performed its duties so exemplarily during many generations, that the greatest reliance might be placed upon its collective experience, integrity, and administrative capacity.

The change
inexpedient
and un-
called for.

The change
inexpedient
and un-
called for.

Hence resulted the repeated opinions given by Parliamentary Committees, that in the event of a total change of the fiscal arrangements by which the requisite funds might be collected, the administration of the funds, and their application to the purposes intended, should be confided to the Trinity House of Deptford Strand.

If we recur to the period when these recommendations were made, we shall find abundant evidence to show that a widespread, almost ineradicable belief prevailed that the Trinity House was some occult, irresponsible body, in which jobbery and every conceivable abuse reigned unchecked. The day of public trial and exposure arrived ; Parliament in 1854 passed the Merchant Shipping Act, by which the accounts of the Trinity House were subjected to the inexorable scrutiny of a department of the Government ; and instead of irregularity, disorder, or misapplication of funds, everything was found systematically conducted ; the utmost order prevailed in the accounts ; and the best proof that can be exhibited of the due appropriation of the funds entrusted to their care is that, since the passing of that Act in 1854, no reduction in expenditure has been effected, although it will be remembered, the Royal Commissioners expressly charge the Board of Trade, in the exercise of their power of control, with having steadily kept economy in view rather than progress.

Therefore, in the total absence of any charge of abuse or neglect against the Corporation, but with irresistible proof, as we have shown in the preceding pages, that, with regard to the public interests, they have conducted the whole business entrusted to their care in the most satisfactory manner—and indeed, as compared even with the new system recently established in France, even to the honour of England,—we have completely answered all the various allegations contained in the Report of the Royal Commissioners, in which the Trinity House is even incidentally inculpated ; and if any reasonable doubt could yet remain of the perfect efficiency with which their whole business has been conducted, we are sure that that body, if called upon

officially, would completely remove every vestige of complaint upon which the Commissioners have founded their inconclusive recommendation. In the number, position, and efficiency of our Lights, we have shown that we equal, if not excel, our great rivals in art and science on the other side of the Channel.

The change
inexpedient
and un-
called for.

We have also proved that, taking "sufficiency as regards "efficiency," England, as compared even with France, is entitled to the foremost rank. Upon what grounds, then, is it asked that we should overthrow the existing system? that we should decimate the numbers of the existing Corporation of the Trinity House, reduce the practical knowledge of the collective Body to the mere valueless exercise of an electoral act, whereby only four of their number would be sent to represent them in a new Board, there to be exposed to be outvoted by a majority of *ex-officio* and other members?

It would be quite self-delusive to conceal, that the proposition of the Royal Commissioners, if it could by any conceivable possibility be realized, would strike at the very root of all the useful power exercised for ages by the Trinity House. The four gentlemen who, in rotation, serve on the "Light Committee" at the Trinity House, perform duties exactly corresponding with similar standing Committees in the House of Commons, and other great institutions of the country. They are empowered by the chief body from which their powers emanate, merely to consider and settle practical details; those details having been arranged, it is by the Chief Governing Body that the principle and final practical application of these details must be decided; and they thus derive their value and efficiency from the collective wisdom and responsibility of the whole Corporation. Again, the Commissioners, in drawing up their paper scheme, seem to have left out of consideration altogether the business of Buoyage and Beaconage, besides many other collateral duties, which at present form part of a well-adjusted comprehensive system.

Through some infatuation in favour of French centraliza-

The change
inexpedient
and un-
called for.

tion and absolutism, the Commissioners imagine that, by the disintegration of the Trinity Board, and by depriving all the Local Authorities throughout the Kingdom of the rights and powers which the Legislature has respected, they can erect a bran-new Board *à la Française*, which is to be compelled to "lean" upon the Admiralty. This must inevitably be the result, if an Executive Department of the State be invested with the full control of the new Board. With the complete "control of the purse," the new Central Board must at once fall under the command of the Admiralty. Was such an arrangement successful in France? We can tell the Commissioners, from an authority they cannot dispute, that when the Lighthouse system was under the French *Département de la Marine*, it totally failed—it was a complete nullity. At the period when the French Revolutionists overthrew every corporate body in France, they also imagined that the Lighthouse system had some "necessary affinity" with the Admiralty, and accordingly, in 1792, *la Surveillance et l'Entretien des Phares et Fanaux* was for the first time placed under the *Département de la Marine*. Napoleon I., when he ascended the Imperial throne, with his quicksightedness in everything relating to administrative systems, saw the error committed, and resolved to transfer the business to the *Département des Ponts et Chaussées*. We give the result in the words of M. A. Dumoustier, *Chef de division de la Navigation*. By a decree of the 7th of March, 1806, the supervision and maintenance of Lights and Beacons were confided to the "*administration des ponts et chaussées*, " *qui les revendique comme une de ses attributions les plus importantes.*" The "*revendication*" of these duties in France to persons more competent to perform them than a Board of Admiralty must carry conviction even to Commissioners, who are so fascinated with everything French, that a Board of Admiralty is not the proper department to superintend the business.

For these reasons, and many others we could adduce, if our space and time admitted, we are warranted in assert-

Bulletin
des Lois,
15 Sept.
1792.

Adminis-
tration
Française,
8vo, Paris,
1856.

ing that the proposed change of system, and especially its transfer to an Admiralty Board, would impair the efficiency of the Lights, and be not only inexpedient, but wholly uncalled for.

That the proposed scheme, both as respects the cost of the new governing body, and the public works executed, would be less expensive, is altogether a delusion. The salaries, "the liberal salaries," which must necessarily be paid to remunerate the services of the Members of the new Board, including the chief officer and "superior" Hydrographer, would at once equal, if it did not greatly exceed, the amount paid to the whole of the Elder Brethren of the Trinity House, who perform other responsible duties besides those relating to Lighthouses. The grave questions of compensations, superannuations, and rights of purchase, and many serious considerations of like nature, cannot be shut out of view. The vested rights of the General and Local Lighthouse Authorities throughout the United Kingdom are held in virtue of ancient Charters, ratified and confirmed by numerous Acts of Parliament, and it is impossible to conceive that Parliament, for the sake of a mere experiment, which as we have seen failed in France, would attempt an alienation of those rights, where neither delinquency, abuse, nor neglect had been proved; but, on the contrary, where all the business had been performed with eminent efficiency and success. So far as respects the cost of the governing bodies, very grave considerations induce the belief that the experiment of a new Board would be far more expensive than the present system.

It would be only to go over the ground we have traversed in the preceding pages to demonstrate that no saving would be effected in the cost of the construction and maintenance of Lighthouses, Buoys, and Beacons by the change proposed. The Trinity House brings to bear its accumulated experience upon all new works proposed by the coexistent General or Local Authorities. The expediency, cost, and public utility of every new work are carefully weighed and decided, and every matter connected with its execution, or

The scheme
is more
expensive
and less
efficient.

The scheme
is more ex-
pensive
and less
efficient.

the maintenance of such new work, is at present rigorously investigated. The Board of Trade, with an effective officer at its command, reviews the whole subject. The assistance of Professor Faraday and Mr. James Chance is called in at all times when their valuable services are needed. Whenever the services of an eminent scientific man are required, let him be paid liberally, and if you will, munificently for such special services; but it would be just as injudicious to make such a person a permanent Member of a Board of Works for Lighthouses, as to take an engineer, employed perhaps in constructing the Great Metropolitan Sewer or a railway, and transform him into a Member of the Cabinet. The system so much lauded in France does not countenance any such practice.

If any one takes the trouble to examine the ill-fangled scheme by which the new governing body is to be constituted, it will be seen at once that the four members contributed from the Trinity House would form but a feeble and powerless minority when merged into the new Board. Whenever the Government thought proper to interpose, either to promote some work, or to prevent its being executed, it is quite obvious that the *ex-officio* members could come down and utterly swamp the whole previous proceedings of the really acting body.

The letter of Admiral Hamilton, to which we have so frequently referred, makes no disguise about the matter. He says, it would be competent, "of course," to the Government to increase the number of the Central Board. Here the political character of the project peeps out; and it must be obvious to every one of our readers, judging from the experience of similarly constituted Government Boards, that as there would be actually in the proposed scheme no control whatever over the disposition of the funds except on the floor of the House of Commons, every scope would be given for the adoption of the most expensive untried experiments, and an increased, improvident expenditure. General confusion and "want of system" would supersede the well-ordered business which now

marks the administration of the Lighthouse system. If the The scheme
is more ex-
pensive
and less
efficient. alleged "over-jealous exercise of control" by the President of the Board of Trade is to be made the especial reason for the removal of all control whatever over the New Central Board, it requires no particular sagacity to foresee that the new Board would be tempted into every sort of extravagance, and could never secure the confidence of Parliament or of the Public. Like the Lighthouse Board of France, established in 1792, which "leant" wholly upon Admiralty assistance, it would terminate in failure, and the business would again have to be placed in other hands. Deprived of the collective experience of the numerous but moderately paid Elder Brethren of the Trinity House, the new Board must inevitably be less efficient and more costly.

If, for the above reasons, the change of system proposed by the Commissioners be inexpedient, and would lead to greater expense, as it is otherwise totally repugnant to the constitutional principles upon which our government rests, we may pronounce that it is altogether impracticable, by whatever curious "exhaustive process the whole scheme Report,
The scheme
imprac-
ticable and
unconsti-
tutional.
p. 39.

"has been arrived at." Parliament has not yet assumed the charge of the whole Lighthouse system; and, judging from the authorities we have quoted, there seems no probability of its substituting a Tonnage-rate for the mode of raising the Lighthouse revenues, or throwing upon the country such a burden. The Report before us, nevertheless, with a pertinacity somewhat remarkable, insists "that, "under the existing system of collecting the Light-Dues, "the estimates regulating the amount will have to be submitted to Parliament." Upon what grounds, we ask, is this assertion made? Have these estimates been presented annually to Parliament since 1854? Nothing of the sort. The Ministers of the Crown, in the Miscellaneous Estimates, take a grant for such Colonial or other Lighthouse as are provided for by Imperial funds; but it is quite a gratuitous mistake on the part of the Commissioners to state that Government will have to submit to Parliament any such estimates for the general Lighthouses of the

The scheme United Kingdom. The whole notion is conceived in confusion and error. The Commissioners should have studied the provisions of the Merchant Shipping Act of 1854, and a few pages of Blackstone's Commentaries, before they ventured upon any such assertion. We only wonder how well-informed gentlemen, who, from their education and position, might be supposed to be versed in the principles of our Constitutional practice, should have hazarded such a theory in a formal document.

We repeat to them, that, beyond the publication of the Accounts of the Mercantile Marine Fund, provided by Statute, Parliament, until it finds the money, has no concern in the matter. This is therefore an insurmountable bar, *in limine*, to the whole project. Upon any other hypothesis of raising the funds, the preposterous notion, that any Minister of the Crown would go down to the House of Commons, and, being irresponsible himself, when presenting the estimates of a more irresponsible Board, should stand up and justify an expenditure of which he knows nothing, is so repugnant to common sense, and betrays such a glaring ignorance of Parliamentary practice, obligations and duties, that it would be a perfect waste of time to dilate upon this obvious blot of the whole scheme. But if all these proceedings are ridiculous, how can it be conceived that the House of Commons itself, passing a self-denying ordinance abdicating its own functions, which are peculiarly to watch over and check the public expenditure, should consent to grant this new Central Board of Lights leave and licence to act uncontrolled as they please? We have a profound respect for the House of Commons; but, considering the pressure and competition of its various Members for public grants for Harbours, Piers, and subventions of all kinds, it certainly seems the climax of absurdity, to suppose that in the matter of Lighthouses, with the patronage incidental thereto, the Members of the House of Commons would neglect their duties, waive their privileges, and vote away the public money without any inquiry, or control over the expenditure.

It is, indeed, this incidental patronage which we cannot altogether pass over in silence.

At present the entire patronage of the Trinity House appointments rests with the Elder Brethren ; and whatever public opinion may be out of doors, we can assert unequivocally, that neither directly nor indirectly is that patronage ever put in motion for party or political purposes. Amongst the honorary members of the Board are various noble and distinguished men, including some of the highest personages in the realm, of different and adverse political opinions. These are all fully aware that the Trinity House patronage is never exerted as a political power.

The scheme impracticable and unconstitutional.

If the scheme which Admiral Hamilton proposes could be carried into execution, and the Corporation of the Trinity House could be transformed into a new Government Board, denominated the "Trinity Commissioners for Lights," can it for a moment be doubted that the patronage, now exercised impartially and exclusively for the public interests, uninfluenced by political bias, would be at once handed over to the Ministry of the day ? We need say no more on the subject. It must be obvious to every one conversant with the working of our political machine, that this power ought not at all events to be added to the already overwhelming influence which has of late years grown up out of the system of centralization.

We have performed the task which we ventured to undertake. We are well aware of the magnitude of the interests involved, and only fear they may suffer through our want of ability in advocating them. The justice of the case will, however, enlist on our side the aid of more vigorous and accomplished minds in Parliament and throughout the country. We felt, however, the deep insult offered to an honourable body of men ; and the principle having been instilled into us that a clear unblemished character comprehends not only the integrity that will not offer, but the spirit which will not submit to an injury, and, whether it belongs to a corporation or to an individual, is the founda-

The scheme impracticable and unconstitutional.

tion of public and private honour and security, we have presented the offence with all the indignation it deserves.

At the very moment when the Report of the Commissioners was brought under our notice, other wondrous discoveries made by means of optical science startled the public. Certain learned persons discovered inexplicable dark lines in the bright luminary which sheds light and life over the universe. They are almost as invisible as they are inscrutable. We never heard, however, that the luminosity of the body examined was impaired by their observations. It still shines with undiminished lustre. In like manner the Commissioners, with the new light of their recently acquired optical science, imagine they have discovered some dark points in the Body which governs our Lighthouse system. With microscopic eyes, they have magnified these imaginary defects, and would make the public believe, if they could, that the Lighthouse system is about to be eclipsed, and to perish in total darkness; or, at all events, that we have not quite so much light as our neighbours, especially in France, where these and all other matters were at all times better managed. We are of a different opinion. We have shown that England takes the foremost rank in regard to coast illumination—that she stands unrivalled in the number, quality, and position of her Lights; and with this conviction in the minds of the public, we rest assured that Parliament will not, without due deliberation, interfere to undermine and overthrow a system of Lighthouse government which has been successfully administered during so many years by the Elder Brethren of the Trinity House Corporation of Deptford Strand.

APPENDIX.

No. 1.

Table of the number and the nature of the Lights in the United Kingdom, as taken from the Admiralty List.

Country.	Lights on shore.			Floating Lights.	Total.
	General Authority.	Local Authority.	Total.		
England	82	89	171	41	212
Scotland	46	67	113	1	114
Ireland	69	4	73	5	78
Total . . .	197	160	357	47	404

No. 2.

Table of the number and position of Lights in the United Kingdom as compared with Foreign countries, showing the proportion between the number of Lights and the amount of Coast Line in England, Scotland, and Ireland, with the proportion between the number of Lights and the Coast Line in France.

Country.	Number of Lighthouses on shore.	Coast Line.	Proportion.
England	171	Nautical miles.	1 for 14·0 miles.
Scotland	113	4469	1 „ 39·5 „
Ireland	73	2518	1 „ 34·5 „
France	224	2763	1 „ 12·3 „

No. 3.

Table showing the means of distinction between Lights,
classified according to colour.

Country.	WHITE.	COLOURED.					
	White and Red.	Red.	Green.	Red and Green.	Red, White, and Green.	Blue.	
England—							
Trinity House	64	13	5	0	0	0	0
Local	31	4	20	4	2	1	2
Scotland—							
Northern Commissioners	32	10	3	0	0	1	0
Local	31	5	25	1	1	0	0
Ireland—							
Ballast Board	49	16	3	0	0	1	0
Local	4	3	3	0	0	0	0
Total.....	211	51	59	5	3	3	2

No. 4.

Table of the average expense of maintenance of Lighthouses, referring only to 1st order Dioptric Lights, or Catoptric Lights of the largest description.

Country.	Oil.	Wicks.	Keepers' Salaries.	Repairs of Building.	Repairs of Apparatus.	Painting.	Total Expenditure (as returned).
England—Dioptric	£ 76 18 0	£ 1 14 2	£ 126 10 9 2 suits of clothes, coals, &c.	£ 29 6 2	£ 13 2 4	£ 24 2 8	£ 265 5 1
„ Catoptric	127 6 2	1 6 5	141 8 4 2 suits of clothes, coals, &c.	30 8 0	15 0 6	21 1 8	340 5 0
Scotland—Dioptric	133 3 2	1 1 0	116 15 7 and land.	1 8 8	8 13 0	2 0 0	380 9 6
„ Catoptric	136 5 0	2 13 6	109 13 1 and land.	2 13 3	8 6 4	2 1 4	385 12 7
Ireland—Dioptric	75 10 0	2 5 0	119 17 5	3 6 11	7 19 4	34 5 6	405 9 5
„ Catoptric	140 9 0	2 4 9	110 15 4	9 11 2	23 5 7	44 5 1	485 11 3

No. 5.

Table comparing the expense of maintenance of a first order Dioptric Light in Foreign countries with that incurred in England, Scotland, and Ireland.

Country.	Lighthouse.	Total Expenditure.		
		£	s.	d.
France	Bréhat (Rock)	415	0	0
,"	Mainland lights; average of four	320	0	0
Spain	Average.....	340	0	0
Denmark	Skagen	274	17	11

No. 6.

Table showing the number of Floating Lights in the United Kingdom.

Country.	Floating Lights in position.	Floating Lights in reserve.
England—Trinity House	34	4
," Local Authorities	7	3
Scotland—Northern Commissioners
," Local Authorities	1	..
Ireland—Ballast Board	4	1
," Local Authorities	1	..
Total	47	8

No. 7.

Table showing the number of Buoys in the United Kingdom, excluding Wreck Buoys and Warping Buoys.

Country.	Buoys in position.	Buoys in reserve.
England—Trinity House	356	438
," Admiralty	65	..
," Local Authorities	375	..
Scotland—Northern Commissioners	92	79
," Local Authorities	64	..
Ireland—Ballast Board.....	53	56
," Local Authorities	104	..
Total.....	1,109	573

No. 8.

Table showing the number of Beacons in the United Kingdom.

England—Trinity House	67
" Admiralty	7
" Channel Islands	19
Scotland—Northern Commissioners	33
" Clyde	82
Ireland—Ballast Board	53

No. 9.

Table showing the expense of management of the Three Great Lighthouse Authorities.

General Authority.	I. Total Expenditure of each Board, including the Expenses shown in the following Columns. Also the Expense of maintaining Light- houses, Floating Lights, Buoys, Beacons, &c., and Superannua- tion Allowances to retired Officers.	II. Salaries of the Home Establishment, Office Expenses, Law Charges, Travelling Expenses, Salaries and Wages at the District Establish- ments, &c. &c.	III. Ratio to the total Expenditure.	IV. Salaries and other Expenses con- nected with the Central Office.	V. Ratio to the total Expenditure.	VI. Expense of maintaining Steam and Sailing Vessels.	VII. Ratio to the total Expenditure.
£ s. d.	£ s. d.	Per cent.	£ s. d.	Per cent.	£ s. d.	Per cent.	£ s. d.
Trinity House ...	172,285 0 6	32,073 13 0	18·6	18,482 5 1	10·7	18,825 10 5	10·9
Commissioners of Northern Lighthouses }	59,746 15 3	4,476 13 1	7·4	3,664 13 3	6·0	6,596 18 0	11·0
Ballast Board ...	46,658 2 3	3,945 4 10	8·4	3,164 7 3	6·7	754 17 9	1·6

No. 10.

Table comparing the amount expended in management and maintenance of vessels with the work done.

General Authority.	Sites Illumi- nated.	Gallons of Oil burnt.	Spots Buoyed.	Cost of Maintenance and Repair.	Cost of Management and Vessels.
Trinity House.....	115	45,031	356	£ 70,686 10 3	£ 50,899 3 5
Commiss ^{rs} of Northern Lighthouses.....	46	25,884	92	17,618 4 2	10,073 11 1
Ballast Board	73	33,942	53	31,591 .5 2	4,700 2 7

