

THURSDAY, JANUARY 30, 1902.

## THE ADVANCEMENT OF NATURAL KNOWLEDGE.

THE *London Gazette* announces that a petition for incorporation has been presented to His Majesty on behalf of a new body, "The British Academy for the Promotion of Historical, Philosophical and Philological Studies." An explanation has been given that the object of this institution is to do for the various departments of "literary science" what the Royal Society has achieved for "natural science." The causes which have led up to this proposal may be stated as follows. At a meeting of the representatives of the chief European and American academies held at Wiesbaden in October 1899, an International Association of the principal Scientific and Literary Academies of the world was decided upon. Most of the academies represented are divided into two sections, a section of natural science and a section of historico-philosophical science. And on this ground the scheme provided for the division of the new association into two sections, "scientific" and "literary," the word "literary" being used only as a short title to embrace the sciences of language, history, philosophy, archæology and other subjects the proper study of which is based on scientific methods. At the conference the representatives of the Royal Society, not feeling themselves competent to represent the United Kingdom in the philosophico-historical section, were unofficially requested to take such steps as might be possible to fill this gap in the future.

The next steps taken may be gathered from the Report of the Royal Society Council presented to the Society on November 30, 1901.

The secretaries, apparently in fulfilment of their undertaking at Wiesbaden, wrote on the subject to the president of the Society of Antiquaries, Viscount Dillon, on November 21, 1899. A meeting was called at which, among others, several fellows of the Royal Society and of the Society of Antiquaries were present. The conclusion arrived at was that the idea of an academy to represent the philosophico-historical subjects formed by the simple federation of existing societies was not one which appeared to meet the views of those present.

At the same time the late Prof. Sidgwick drew up a plan which was approved by several of those attending the meeting and "of which the resolution passed at that meeting might be considered a part." This plan pointed out that the Royal Society might enlarge its scope, and include a section corresponding to the "philosophico-historical" and "philological" division of the German Royal Academies and Societies.

The next step taken was the reference of the matter to a special committee of the Royal Society.

The Committee point out that four possible ways of dealing with the matter were submitted to them:—

"(1) The creation of an organisation independent of the Royal Society, though possibly in some way connected with it, in which case they might both form parts of some larger body, as, for instance, the French Academies form parts of the Institute of France.

"(2) The creation of two 'Academies' within the

Royal Society, one of Mathematics and Natural Sciences, the other of Philosophy-History, each Academy having its own Council, Secretaries and President, and the President of each being in turn President of the whole Society.

"(3) The creation of two or of three 'Sections' of the Royal Society, either A and B, corresponding to the Academies just named; or A, Mathematical and Physical Sciences; B, Biological Sciences; C, Philosophico-Historical Sciences.

"(4) The election of some 25 to 50 Fellows representing the Philosophico-Historical subjects, to serve as a nucleus, and the creation of three or four committees, similar to those already existing, viz., one for Ethnography and Archæology, one for Philology, one for Statistics and Political Economy, and one for Psychology, the Officers and Council remaining, so far as statute and enactment are concerned, precisely as they are at present."

After these schemes had been formulated they were discussed at an interview with a number of representatives of the philosophico-historical sciences. Concerning this interview we read:—

"They all expressed themselves in favour of any effort for the corporate representation of those sciences being associated in some way or other with the Royal Society. They seemed unanimous in feeling the great desirability of the organisation and official representation of the Philosophico-Historical subjects, both on the ground of the general encouragement of their pursuit, and also, and more especially, as a means of developing the more scientific methods of treating those subjects.

"The general opinion of these gentlemen upon the practical courses discussed in the Report seemed to be in favour of the plan numbered (3) in the Report, but, recognising the practical difficulties in the way of carrying out any such scheme immediately, they were generally in favour of an effort being made on the lines laid down in plan numbered (4) as a beginning, in the belief that should its adoption lead, as they believe it would, to greater activity in this country in the studies in question, there might ultimately develop out of it some more formal organisation, such as is contemplated in the other plans submitted."

It is frankly stated that the Committee were much impressed by the concurrence of opinion among the gentlemen whom they consulted and by the high value they set on the inclusion within the scope of the Royal Society's action of the subjects they represented.

After the Report of this Committee was sent in to the Council, a special meeting of the Society was called for May 9, 1901. Unfortunately there is no record of what took place at it, but at the Council meeting in June the following resolution was passed:—"That the Council, while sympathising with the desire to secure corporate organisation for the exact literary studies considered in the Report, is of opinion that it is undesirable that the Royal Society should itself initiate the establishment of a British Academy."

The *Times* now tells us that on June 28, 1901, a month after this resolution was arrived at, those interested in the proper representation of the "literary" subjects met at the British Museum and

"after long and careful deliberation resolved to promote the establishment of a British Academy of Historical, Philosophical and Philological Studies on conditions which would satisfy the requirements of the International Association of Academies. It was further decided that the Academy should petition for incorporation by Royal



Charter, and that the nomination of the first Fellows under the proposed charter should be forthwith taken in hand. Before the close of last year, on December 17, the British Academy held its first meeting at the British Museum and petitioned His Majesty for incorporation by Charter."

According to the draft Charter, the petitioners will be the first Fellows of the Academy, and the President and Council will be elected by the Fellows from amongst their own number. New Fellows will be elected at a general meeting of the Fellows.

The announcement in the *London Gazette* states that His Majesty has referred the petition to a committee of the Lords of the Council. Notice is further given that all petitions for or against such grant should be sent to the Privy Council Office on or before February 14 next.

The following letter from Sir Norman Lockyer appears in the *Times* of yesterday (January 29):—

SIR,—All students of natural knowledge in this country should agree as to the importance of the step recently taken to organise certain branches of it, concerning which you have given your readers much information. There are, however, some points connected with the movement on which you have not yet touched. Will you permit me to refer to them and the conclusion to which they lead?

The petition to His Majesty for a charter to embrace the organisation of historical, philosophical and philological sciences was rendered necessary by the action of the council of the Royal Society, who declined to "initiate the establishment of a British Academy" dealing with these subjects. But, in the first instance, the desire of those interested in the movement was that the Royal Society might include in itself a section corresponding to the philosophico-historical and philological division of the Continental academies; it was not a question of establishing a British Academy.

To consider the matter in this form a committee of the Royal Society was appointed, and its report has recently been published. In this report we have the following reference to the subjects dealt with by the historical and philological sections of foreign academies:—

These subjects have, in England, hitherto remained unorganised—that is to say, the workers in each one of them have been brought into little or no relation with the workers in each of the others. Societies have been founded for the promotion of some of them, but these societies are not linked together by the membership of their leading members in one body of recognised authority and influence, such as the Royal Society provides for the investigators of various branches of mathematical, observational, and experimental science.

The advantages which the gathering into one body of the men most eminent in the subjects above specified have secured in Germany, France, Italy and Belgium do not exist here, and the absence of any effort to secure them has often excited the surprise of learned men in those countries. Neither is there in England any series of Transactions similar to those of the leading academies of Continental Europe, in which records of the most fruitful inquiries in those subjects, or even systematised references to such inquiries, may be found.

We are next told that the following reasons, among others, have been suggested by eminent men as making it desirable that the Royal Society should take action in the matter:—

Assuming the organisation of the above subjects to be called for in the general interest of the intellectual progress of the country, the Royal Society can promote their organisation more effectively than could be done by the persons who are occupied in the study of them, because these persons have no sort of combined corporate existence, and no voluntary group of them would appear to have a proper *locus standi* for appealing to the

public or approaching the Government in order to attain the object sought.

It has been urged on general grounds that the inclusion by the Royal Society of a section corresponding to the philosophico-historical and philological divisions of the German academies would strengthen the society by broadening the range of its scientific activity and increasing its influence; and would be to its advantage inasmuch as such a course would anticipate and thereby make needless the formation of an association which, by gathering the subjects within its scope, might to that extent be in rivalry with the Royal Society, and tend to narrow the legitimate range of its activity.

And next comes the most important part of the report, indicating that in the past, and by the three charters granted by His Majesty Charles II., the subjects under discussion were, and should now be, held to refer to "natural knowledge," and, therefore, should be dealt with by the Royal Society:—

The society exists for the promotion of natural knowledge. The interpretation of the term "natural knowledge," according to the present practice of the Royal Society, assigns to it a range from mathematics to the various biological sciences, and this secures the inclusion of the scientific study of man in his biological relations.

It is evident that the charters have never been interpreted as confining the "studies" of the society to "further promoting by the authority of experiments the science of natural things and of useful arts" in the strict modern meaning of those words. Indeed, the second charter in terms empowers the society to hold meetings "for the examination and investigation of experiments and of natural things," and both charters authorise it to enjoy "mutual intelligence and affairs with all and all manner of foreigners" . . . "in matters or things philosophical, mathematical, or mechanical." The provisions of the first statutes that the business of the society at its meetings shall be "to order, take account, consider, and discourse of philosophical experiments and observations; to read, hear, and discourse upon letters, reports, and other papers containing philosophical matters; and also to view and discourse upon rarities of nature and art," and the long and uninterrupted usage to receive papers on observational sciences, such as geology, or on pure mathematics, certainly do establish a *contemporanea expositio* which must be taken into account as *optimus interpret* and *fortissima in lege*.

Even had papers upon philological, psychological, or other subjects been entirely absent, no stress could be laid upon that fact, if in the opinion of the society those subjects have, under modern methods of treatment, become observational sciences, and as fully parts of "natural knowledge" as those subjects which were recognised as such at the epoch of the foundation of the society.

It would clearly be *ultra vires* for the society to resolve to receive a new class of papers, incapable of being regarded either in subject-matter or in scientific treatment as in the same category as those which have hitherto been received. But it would not be unlawful for the society to determine to receive papers on subjects not hitherto regarded as properly within its scope if it came deliberately to the conclusion that, in view of the scientific method in which they were now being treated, those subjects ought not to be excluded from its study.

The committee was not content with expressing its own view on this important matter; it privately consulted two high legal authorities, whose opinion led the committee to believe, in confirmation of the views above stated, that the inclusion within the scope of the society of such subjects as have been referred to, if treated by scientific methods, is "within the powers of the society."

Two extracts from the first charter granted by Charles II. alone seem to establish this conclusion. The charter begins as follows (I give the English translation as it runs in the "Record of the Royal Society, 1897") :—

Charles II., by the grace of God King of England, Scotland, France, and Ireland, Defender of the Faith, &c., to all to whom these present Letters shall come, greeting.

We have long and fully resolved with Ourselves to extend not only the boundaries of the Empire, but also the very arts and sciences. Therefore we look with favour upon all forms of



learning, but with particular grace we encourage philosophical studies, especially those which by actual experiment attempt either to shape out a new philosophy or to perfect the old. In order, therefore, that such studies, which have not hitherto been sufficiently brilliant in any part of the world, may shine conspicuously amongst our people, and that at length the whole world of letters may always recognise us not only as the Defender of the Faith, but also as the universal lover and patron of every kind of truth: Know ye, &c.

Of the "Fellows" we read later on:—

The more eminently they are distinguished for the study of every kind of learning and good letters, the more ardently they desire to promote the honour, studies, and advantage of this Society . . . the more we wish them to be especially deemed fitting and worthy of being admitted into the number of the Fellows of the same Society.

"Every kind of learning and good letters" seems to me pretty general, and it does not seem improper to take the words "philosophical studies," in connection with Bacon's definition of philosophy, as dealing with a three-fold division, of matters divine (supernatural), natural, and human, which also, perhaps, explains the subsequent insistence upon natural, as opposed to supernatural, knowledge.

But, without labouring this point further, I suggest that subjects the study of which by scientific methods increases the sum of natural knowledge must all stand on the same footing. I use the word "scientific" in its widest, which I believe to be the truest, sense, as including all additions to natural knowledge got by investigation. Human history and development are as important to mankind as the history and development of fishes. The Royal Society now practically neglects the one and encourages the other.

It is possible, then, to say the least, that the present general action of the society, and I say general, because the action changes from time to time, is really not in accordance with its charters; it certainly is not with its first practice. The charters make the society the head centre of the intellect of the kingdom engaged in making new natural knowledge, and therefore until these charters of King Charles II. are abrogated or revised there is no place logically for a new charter by King Edward VII. giving power to a new body to deal with the subjects the duty of the organisation and encouragement of which was previously committed to the Royal Society.

There can be no question that the gradual departure of the action of the Royal Society from the course laid down in the charters, and actually followed for a time, has been the gradual expansion and increased importance of experimental and observational methods of work, which of themselves are sufficient to employ the existing administrative machinery. But, if the whole work cannot be done inside the society as it exists at present, the question arises, Cannot some be organised side by side with it? Here, again, there may be difficulties; but, as the committee wisely say with regard to the first proposal:—

We are far from intending to express an opinion that any difficulties of detail ought to prevent the important issues involved from being fully considered in their largest bearings, having regard to the great benefits which might be expected to result to the progress of the philosophico-historical studies, and possibly to the Royal Society itself, from the inclusion of those studies within the scope of the society's action.

It is right that I should say that the Royal Society Council, in the resolution from which I have already quoted, expresses sympathy with the desire to secure a proper representation of the subjects now in question, and did not refuse to include them within itself, although its action may give colour to the belief in such an effect.

At present the Royal Society is the unique recognised centre of the general scientific activity in this country.

Will it be conducive to the interests of science, or even of the Royal Society itself, that in future there should be two entirely separate centres?

But will not this state of things be brought about if, without any general consideration, a charter is at once granted to the new body?

The important thing to secure is that the two bodies dealing with the two great groups of scientific subjects shall form part of one organisation—some enlarged Royal Society. What the *nexus* shall be is a matter of such subordinate importance that I do not propose now to refer to it further.

May not this present difficulty, Sir, be really a blessing in disguise? Does it not merely emphasise the activity of the scientific spirit and the employment of the scientific method in new regions, and suggest that the time has arrived, at the beginning of a new century and a new reign, for doing for the science of to-day what Charles II. did for the science of the seventeenth century—that is, organising and coordinating it on a broad basis?

It is clear that the question so wisely referred by His Majesty Edward VII. to the Privy Council is no light one, for the acts of a previous King of England and the future development of British science are involved. The present confusion is great and will become greater if a new charter is granted without a comparison and possible revision of the existing ones; and, short of an inquiry, by a Royal Commission or by some other means, to consider the question, it is difficult to see how the proper organisation of natural knowledge in the future can be secured.

It is fortunate that there is ample time for this important matter to be considered carefully in all its bearings, for not till 1904 can any British representation of the philosophico-historical subjects be considered by the International Association of Academies.

May I finally be permitted to say, Sir, how entirely I agree with the remarks in the leading article in the *Times* of the 16th inst. concerning the importance of organising literature as well as science? Science has undoubtedly gained by the charters of Charles II., and on this ground alone it may be urged that literature will be a gainer if it also is similarly organised. Certainly the most impressive sight I saw in Paris last year, when attending the first meeting of the International Association of Academies as a Royal Society delegate, was the reception of a new literary member of the Académie Française. The combination of troops representing the Government and members of other academies representing the Institute of France formed a picture which is not easily forgotten; it was one also to set one thinking.

I am, Sir, your obedient servant,

NORMAN LOCKYER.

### THE EIFFEL TOWER.

*La Tour Eiffel en 1900.* Par M. G. Eiffel, Officier de la Légion d'Honneur. Pp. 363. (Paris: Masson and Co., 1902.)

IN a handsome volume, profusely illustrated with engravings and photographs, M. Eiffel has given an elaborate account, from its earliest conception, of the lofty structure that will always bear his name, and of the mechanical devices which have secured its success, both as a worthy monument of the art of construction and as a source of delight to the millions who have ascended it. We understand and regret that this monograph in some measure owes its appearance to the attacks of detractors, and it is intended to furnish a complete answer to those who, disapproving of the structure, have commented on its puerility and its uselessness. This ill will, well pronounced in the early days of the structure, and to which