wonderful. The size, quality, and shape vary considerably in the different streams, the largest being caught in the Sacramento river. While the salmon theoretically must have clear water, it is remarkable that it seems to thrive in the muddy waters of the Sacramento." Here is possibly some news for Mr. Frank Buckland.

THE Government of Honduras, in Central America, has granted to M. de la Roche for ten years the exclusive privilege of planting and exporting Corozo nut, paying two reals each hundred weight as royalty. What Corozo nut may mean, it is not easy to say.

MR. E. G. SQUIER, late commissioner of the United States in Peru, reprints a paper read before the American Geographical Society, containing Observations on the Geography and Archæology of Peru.

PROFESSORS JOHN TORREY and Asa Gray reprint from the Proceedings of the American Academy of Arts and Sciences their "Revision of the Eriogoneæ," a tribe of the order *Polygonaceæ*, first instituted by Mr. Bentham, wholly American, and especially characteristic of the drier western regions of the northern continent. They recognise seven genera, the same number as Mr. Bentham, the number of species being increased from 105 to 115.

THE Quekett Microscopical Club has just issued its fifth Report. The number of members has increased during the last five years from eleven to over 500, "all imbued with a strong desire to seek out the unfathomable stores of interest revealed by the microscope, and all influenced by that insatiable thirst for the observation of the minute and the beautiful that only the microscope can open to view." The club now meets twice a month throughout the year, at University College, Gower Street, and excursions are made during the summer season for the purpose of providing microscopical research.

WE have just received the prospectus of the Ladies' Educational Association, and we are glad to see that the lectures will include two subjects in Science, a chemical course by Professor Williamson, and a course of eighteen lectures on experimental physics, by Professor G. Carey Foster. Both courses will be delivered at University College. By applying to the secretary, a free ticket can be procured for the first lecture of each course; those requiring class tickets, free tickets for opening lectures, prospectuses, and information, are requested to send to the hon. secretary, J. E. Milne, Esq., 27, Oxford-square, Hyde-park, W.

THE two volumes now published of Willkomm and Lange's "Prodromus Floræ Hispanicæ," include the Ferns, Gymnospermæ, Monocotyledones, Apetalæ, and Gamopetalæ.

EXPERIENCE only too clearly shows that familiarity breeds contempt. Even earthquakes are now quite appreciated in some parts of the world. Thus the *San Francisco Bulletin* of the 11th August says, "Popular prejudice is rather in favour of these lighter demonstrations of subterranean force, as they seem to stave off the heavier shocks." What next?

THE Smithsonian Institute of Washington has appointed a committee of scientific men to make a series of experiments to ascertain the temperature of the earth's crust at a considerable depth below the surface. For this purpose an artesian well at St. Louis is to be utilised, and as this is 3,843 feet deep some interesting results may be looked for.

THE decree of the Committee of the National Defence of Paris announcing that all woods and forests which might endanger the defence of the country will be set on fire on the approach of the enemy, has already been acted upon to a large extent. Independently of the loss in an artistic and æsthetic point of view, we can hardly be aware, probably the Parisians are hardly aware themselves of the amount of self-sacrifice this resolution will entail on themselves, and on their descendants. For some years past the climate of the central regions of France has been rapidly becoming drier, to the serious injury of many of the crops, a result attributed in part to the extensive cutting down of forests. The destruction of the world-famous forests of Fontainebleau, St. Cloud, St. Germain, and the Bois de Boulogne, will involve a material loss to the country, possibly hardly exceeded by the actual expenses of the war itself.

## *THE BRITISH ASSOCIATION*

LIVERPOOL, *Tuesday Morning*

THE Liverpool meeting of the British Association is a great success. Distinguished visitors, a large company, interesting papers, and splendid weather, have all combined in its favour. The hotels are all full to overflowing, and accommodation extremely difficult to get. Almost all our well-known *habitués* are here; and among foreigners, Henry, Van Beneden, Stricker, Bolzani, and a number of others, lend lustre to the meetings. Professor Huxley's address on Wednesday was listened to by a large and attentive audience, who appeared thoroughly to follow his train of argument. At the general committee some new regulations of considerable importance were proposed, particulars of which will be found in another column. On Thursday a casual visitor to Liverpool would see at once, on emerging from the railway station at Lime-street, that something unusual was stirring. The centre of operations was the space that includes St. George's Hall, where several of the sections are located, and the closely adjoining Derby Museum, where the Biological Section is to be found, and the reception-room, reading-room, and post-office. In this space and the neighbouring streets, the members of the Association may be recognised by the little blue or buff map-cards they carry, as symbolical as Murray in a Continental tour. Taking the various sections in turn, we find three located in St. George's Hall, A, E, and G. The Geographical Section is always a popular one, and attracted the largest audience of any to listen to the well-known and popular president, Sir Roderick Murchison, deliver his opening address. The room selected was the small concert-room—not a very small one, by-the-bye—which was well filled, a large proportion of the audience being ladies, though I am afraid Sir Roderick's failing voice hardly reached the whole of the company. How large a proportion stayed to hear Sir H. Rawlinson's report on the Site of Paradise I did not wait to see. The two other sections in St. George's Hall, the Mathematical and Mechanical, had to be reached by long winding passages, past rooms redolent of the law; and were, of course, much more thinly attended, but very few ladies being met with here. Crossing over to the Derby Museum, and passing through the Reception Room, we reach the Free Public Library, where Professor Rolleston enchained a large audience by an address of upwards of an hour, which was generally admitted to be *the* address of the day. His commanding presence, measured diction, and his happy hits and classical allusions, exercised a great charm over the meeting, and many were the inquiries where a report of the speech was to be obtained. This section then divided into three sub-sections, under the presidency of Prof. Rolleston, Prof. Michael Foster, and Mr. John Evans, each of which attracted a goodly number of visitors. A very large audience listened to Dr. Brown-Séquard's long but very interesting account of his researches on the nervous system of guinea-pigs, of which little animal it is said, that he has left two thousand behind him in Paris, which, he fears, may fall a prey to the Prussians or to the exigencies of the siege. Those sections which are held at comparatively remote places are at a certain disadvantage, though many of the visitors appeared to avail themselves of cabs or of the

luxury of the tramway omnibuses, which London does not yet possess, to visit them. The Geological Section is held in a small and not very convenient room, the Concert Hall, in Lord Nelson Street. Here there was no opening address, and the attendance was small. The most remote of all is the Chemical Section at the Royal Institution in Colquitt Street. At the Section for Economic Science, in the Town Hall, I arrived just in time to hear the venerable Sir John Bowring propose a vote of thanks to the president, Prof. Jevons, for his opening address. The "economic" rule was there laid down, which might have been adopted with advantage in some of the other sections, that, during a discussion, no one was to speak for more than ten minutes. Considering the distance from the central buildings, the attendance here was not small; and the committee of this section appears to contain the largest infusion of the aristocratic element—Lord Derby, Lord Houghton, Sir J. K. Shuttleworth, and Lord Neaves. The first day was closed by a *soirée* given by the Mayor in the Town Hall, where about 1,400 visitors were collected, consisting of members of the Association and the principal visitors in Liverpool. A *soirée* was also held in the Free Public Library, where Mr. Moore and the Rev. H. H. Higgins had got together a very large and interesting collection of scientific objects and works of art, including the well-known and valuable "Mayer collection."

On Friday and Saturday I confined my visits to the several sections comprised under the head of Natural Science. In the Geological Section there have been several papers of great interest, Mr. Judd's having attracted particular attention, and the discussion which followed was thought very interesting. The chemists do not appear to have mustered in force; at all events, that section took a holiday on Saturday, and a good many interested in it have seized the opportunity of visiting some of the numerous chemical works in the neighbourhood. Section D, on the other hand, has suffered from a plethora of papers, notwithstanding its division into three sub-sections. The Geographical Section is always popular. Great disappointment was expressed at the withdrawal of Mr. Hepworth Dixon's paper, which was, however, to some extent compensated by the part he took in the discussion which followed Governor Gilpin's paper on Colorado. But the greatest crush on Friday was in Prof. Rolleston's sub-section; and the interest excited on the subject of Spontaneous Generation, by the president's opening address, was shown by the attention with which the crowded audience listened to a two-hours' discussion, for which purpose the three sub-sections were for a time united. The campaign was opened by a description of some recent experiments by Dr. Child, the well-known advocate of spontaneous generation, on Abiogenesis. This was followed up by an elaborate paper, on the other side, from Mr. Samuelson, which was succeeded by some remarks from Dr. Crace Calvert, who spoke of the extreme difficulty with which the atmosphere can be entirely freed from organic germs. The discussion which followed was sustained by Dr. Hooker, Mr. Bentham, and other distinguished naturalists, entirely on the orthodox side of Biogenesis. In the remarks with which he summed up the debate, Prof. Rolleston complimented Dr. Child on the gallantry with which he had stood in the breach alone against such a consensus of opposition; and expressed his regret at the absence of the great champion of Abiogenesis, Dr. Charlton Bastian—the report of whose experiments in NATURE, he said, it was the bounden duty of every one who had now heard the other side of the question to read. Prof. Huxley was not present during the discussion; and though Mr. Herbert Spencer was, he took no part in it. It is rumoured that the combat is to be renewed to-morrow by the chiefs themselves: if this is the case, probably the whole Association will be there to hear them. In a discussion which took place in the same section on Thursday, Mr. Gwyn Jeffreys spoke of the hindrance which the *Porcupine* dredging expedition in the Mediterranean had experienced from the unfavourable weather. He mentioned the fact, which is but little known to naturalists, and which is not without importance in reference to the theory of glacial epochs, that the species of mollusca dredged up from great depths in the Mediterranean in previous expeditions are identical with Arctic species. It is very gratifying that Prof. Wyville Thomson, who was prevented from taking his share in that expedition through illness, is now completely restored to health. Prof. Tyndall's eloquent discourse on Friday on the scientific uses of the imagination was just of the kind which pleases the audience for whom it was intended, and was rapturously applauded.

At a meeting of the General Committee yesterday afternoon, Prof. Huxley in the chair, invitations were read for meetings of the Association to be held at Edinburgh, Brighton, Bradford, and Belfast. The Scotch metropolis was represented by Prof. Balfour and Sir Walter Elliot, the southern watering-place by Mr. Hallett and Mr. Mayall the photographer, the Yorkshire manufacturing town by the Mayor of Bradford and Mr. Alderman Law, and the Irish city by Dr. M'Gee and Mr. Patterson. In reference to Brighton, it was mentioned that the three south-eastern counties of England have together only enjoyed one meeting of the Association during the last twenty-five years, the Thames appearing to be a kind of Rubicon which the Association has found a difficulty in crossing. It was moved by Sir Roderick Murchison, seconded by Mr. Cowan (who stated that the neighbourhood of Edinburgh manufactured 200 miles of paper per diem), that the next meeting of the Association be held at Edinburgh. Lord Houghton then moved, in accordance with the new resolution passed by the General Committee, that the meeting for 1872 be held at Brighton. This was seconded by Mr. Gassiot, and also carried unanimously. The motion of Prof. Stokes, seconded by Mr. Spottiswoode, that Sir William Thomson be the president-elect, was received with great enthusiasm. Sir Walter Elliot proposed, and Prof. Rolleston seconded, the appointment of the vice-presidents for 1871, viz., the Duke of Buccleuch, the Lord Provost of Edinburgh, the Right Hon. J. Inglis, Sir Alexander Grant, Sir Roderick Murchison, Sir Chas. Lyell, Dr. Lyon Playfair, and Dr. Christison. Prof. Crum Brown, Mr. Ed. Sang, and Mr. T. B. Margaret are to be the local secretaries; and the time fixed was the middle of August, the day to be settled by the Council. The committee then resumed the subject of Vivisection, which had been adjourned from the last meeting. Mr. Johnstone Stoney proposed the resolution of which he had given notice, that "Having regard to the well-known character of the British Association, and to the circumstance that the business of the General Committee is necessarily transacted under pressure of time, it is not expedient, under ordinary circumstances, that it be recommended to this committee to appoint committees or pass votes for investigations to be carried on by the method of vivisection." This resolution Mr. Stoney was anxious to withdraw in favour of two others, but the chairman decided that these could only be brought forward in the form of amendments. The original resolution was therefore seconded, *pro formâ*, by Prof. Stokes. Mr. Samuelson then proposed as an amendment, "That the committee of Section D be requested to draw up a statement of their views upon physiological experiments in their various bearings, and that this document be circulated among the members of the Association, and that the said committee be further requested to consider from time to time whether any steps can be taken by them or by the Association which will tend to reduce to its minimum the sufferings entailed by legitimate physiological inquiries, or which will have the effect of employing the influence of the Association in dis-

couragement of experiments which are not clearly legitimate of living animals." The amendment was seconded by Professor Rolleston, and carried by a large majority. The following appointments were then made :—Council : The President and President elect ; Vice-president and Vice-presidents elect ; General Secretaries and Assistant-secretary ; General Treasurer ; trustees, presidents of former years, and the following gentlemen :—Mr. Bateman, Dr. Beddoe, Mr. G. Busk, Dr. Debus, Mr. Warren Delarue, Mr. J. Evans, Captain Galton, Mr. F. Galton, Mr. Gassiot, Mr. Godwin-Austen, Lord Houghton, Mr. W. Huggins, Sir John Lubbock, Prof. W. A. Miller, Mr. Newmarch, Sir S. Northcote, Prof. Ramsay, Prof. Rankine, Dr. J. Simon, Lieut.-Col. Strange, Col. Sykes, Sir W. Tite, Prof. Tyndall, Mr. A. R. Wallace, Prof. Wheatstone, Prof. A. W. Williamson. General Secretaries, Prof. Hirst and Dr. Thomas Thomson. Assistant Secretary, Mr. Griffiths. Treasurer, Mr. Spottiswoode. Auditors, Mr. G. Busk, Dr. M. Foster, Mr. Gwyn Jeffreys. Mr. J. Evans and Dr. M. Foster were added to the Committee of Recommendations. B.

REPORT OF THE COUNCIL

"The Council have received the usual reports from the General Treasurer and from the Kew Committee. Their reports for the past year will be laid before the General Committee this day.

The Council have to report upon the action they have taken relative to each of the four resolutions referred to them by the General Committee at Exeter.

The first of these resolutions was—

'That the Council be requested to take into their consideration the existing relations between the Kew Committee and the British Association.'

The Council accordingly appointed a Committee of their own body to examine into these relations. This Committee had before them a special report drawn up by the Kew Committee, and, after due deliberation, they recommended—

'That the existing relations between the Kew Observatory and the British Association be continued unaltered until the completion, in 1872, of the magnetic and solar decennial period ; but that after that date all connexion between them shall cease.'

The Council adopted this recommendation, and now offer it, as their own, to the General Committee.

The second resolution referred to the Council was as follows :—

'That the full influence of the British Association for the Advancement of Science should at once be exerted to obtain the appointment of a Royal Commission to consider—

First, the character and value of existing institutions and facilities for scientific investigation, and the amount of time and money devoted to such purposes.

Secondly, what modifications or augmentations of the means and facilities that are at present available for the maintenance and extension of science are requisite ; and,

Thirdly, in what manner these can be best supplied.'

By a third resolution the Council was 'requested to ascertain whether the action of Government in relation to the higher scientific education has been in accordance with the principles of impartiality which were understood to guide them in this matter ; and to consider whether that action has been well calculated to utilise and develop the resources of the country for this end, and to favour the free development of the higher scientific education. That the Council be requested to take such measures as may appear to them best calculated to carry out the conclusions to which they may be led by these inquiries and deliberations.'

The Committee of the Council appointed to consider these two resolutions reported their opinion to be favourable to the appointment of a Royal Commission to inquire into the relations of the State to scientific instruction and investigation ; and they added that no such inquiry would, in their opinion, be complete which did not extend itself to the action of the State in relation to scientific education, and the effect of that action upon independent educational institutions.

Your President and Council, acting on the advice of this Committee, constituted themselves a Deputation and waited upon the Lord President of the Council. They are glad to be able to report that their efforts to bring this important subject before Her Majesty's Government have been attended with success. On the 18th of May, Her Majesty issued a Commission "to make inquiry with regard to Scientific Instruction and the Advancement of Science, and to inquire what aid thereto is derived from grants voted by Parliament or from endowments belonging to the several universities in Great Britain and Ireland and the colleges thereof, and whether such aid could be rendered in a manner more effectual for the purpose." The Commissioners appointed by Her Majesty are the Duke of Devonshire, the Marquis of Lansdowne, Sir John Lubbock, Bart., Sir James Phillips Kay Shuttleworth, Bart., Bernhard Samuelson, Esq., M.P., Dr. Sharpey, Professor Huxley, Dr. W. A. Miller, and Professor Stokes. J. Norman Lockyer, Esq., F.R.S., has been appointed Secretary to the Commissioners, who, up to last July, were engaged taking evidence with great assiduity, and have now adjourned their meetings until November. There is every reason to hope that valuable results will follow from their deliberations.

The fourth resolution which the General Committee referred to the Council was—

'That the rules under which members are admitted to the General Committee be reconsidered.'

A Committee of the Council devoted considerable care to a revision of the existing rules. The modified rules approved by the Council are now submitted for adoption to the present General Committee, whose constitution is, of course, not affected thereby. The most important of the proposed changes are that henceforth new claims to membership of the General Committee shall be forwarded to the Assistant General Secretary at least one month before the next ensuing Annual Meeting of the Association ; that these claims shall be submitted to the Council, whose decision upon them is to be final ; and that henceforth it is not the authorship of a paper in the Transactions of a scientific society which is alone to constitute a claim to membership of the General Committee, but the publication of any works or papers which have furthered the advancement of any of the subjects taken into consideration at the Sectional meetings of the Society.

Your Council has, also, had under its consideration the desirability of removing certain administrative inconveniences which arise from the circumstance that the next place of meeting is never decided upon by the General Committee until near the close of the actual meeting. They are of opinion that the arrangements of the General Officers would be greatly facilitated, and at the same time the convenience of those who invite the Association consulted, if the General Committee were to decide upon each place of meeting a year earlier than they do at present. In order to make the transition from the existing practice to the proposed one, your Council recommend that two of the invitations which will be received at the present meetings be accepted, one for 1871, and another for 1872.

It has often been urged that the Association labours under disadvantages in consequence of its not possessing central offices in London, where its Council and numerous committees could hold their meetings, where the books and memoirs which have been accumulating for years could be rendered accessible to Members, and where information concerning the Association's proceedings could be promptly obtained during the interval between annual meetings. The Council have had the subject under consideration, and in the event of the establishment at Kew being discontinued, they are prepared to recommend that suitable rooms, in a central situation, should be procured. The additional annual expenditure which this would involve would probably not exceed 150*l*.

The Council have added the names of Professor H. A. Newton and Professor C. S. Lyman, who were present at the Exeter meeting, to the list of corresponding members."

We append the new rules referred to in the Council's Report.

"*New Rules for Admission to the General Committee*

The General Committee will in future consist of the following classes of members :—

CLASS A.—PERMANENT MEMBERS

1. Members of the Council, presidents of the Association, and presidents of sections for the present and preceding years, with authors of reports in the Transactions of the Association.

2. Members who, by the publication of works or papers, have furthered the advancement of those subjects which are taken into consideration at the sectional meetings of the Association. With a view of submitting new claims under this rule to the decision