

study of ice structure and glaciation." Lieut. Campbell's party, in spite of extraordinary hardships, which included wintering away from its base, for which it was not prepared, was very successful in meteorological, magnetic, geological, and surveying work, while the penguins were the object of further study. Commander Evans had time to commend the work of Mr. Griffith-Taylor on the coast of Victoria Land (in geology and surveying), as well as that carried out on the ship, not only in the open ocean, but on the less-known coasts of New Zealand, no more fully than to intimate that each of these departments of the whole great undertaking is worthy of a lecture to itself, which it is to be hoped may be devoted to it.

Finally, reference is due to the results of the determination of the position of the south pole itself, as obtained by Amundsen and by Scott. The latter fixed the exact spot by means of a 4-in. theodolite, "at a point which only differed from Amundsen's reckoning by half a mile," that is to say, "by one scale division on the theodolite, which was graduated to half a minute of arc. Experts in navigation and surveying will always look on this splendidly accurate determination as a fine piece of work, by our own people as well as by the Norwegian explorers."

At the annual meeting of the society on Monday last, in the Theatre, Burlington Gardens, Lady Scott was presented by Earl Curzon with the patron's medal and the special Antarctic medal awarded to her husband in 1904, inclosed in an inscribed silver casket. Mrs. Wilson also received a patron's medal awarded to Dr. E. A. Wilson. To Lieut. Campbell was presented a gold watch as a special award.

#### THE BRITISH SCIENCE GUILD.

THE seventh annual meeting of the British Science Guild was held at the Mansion House on May 21, the Lord Mayor in the chair. In his opening remarks, the Lord Mayor made sympathetic reference to the aims and work of the guild, which, he said, seeks to further the application of scientific methods to all human endeavour and advocates the adoption of measures for the conservation of natural resources; in other words, its desire is to foster national efficiency. The Right Hon. Sir William Mather was elected president of the guild in succession to Lord Haldane, who has been president since its foundation. The new vice-presidents elected were Lord Sydenham, the Right Hon. the Lord Mayor of London, the Right Hon. Sir John Brunner, Bart., Sir Patrick Manson, and Sir Philip Watts; and other new members added to the executive committee are Mr. Charles Bathurst, M.P., Mr. R. Kaye Gray, Sir Philip Magnus, M.P., and Mr. Robert Mond.

The annual report, which was adopted at the meeting, surveys the activities of the guild in many directions. Reference is made in it to the new Post Office service for the synchronising of clocks—a subject which the guild has done much to promote. Other matters referred to are the final report of the Royal Commission on Tuberculosis, the new horticultural branch of the Board of Agriculture and Fisheries, the conversion of the Sleeping Sickness Bureau into the Tropical Diseases Bureau, the Society for the Promotion of Nature Reserves, and the Royal Commissions and Departmental Committees appointed during the year to deal with subjects with which science has some relationship. All these Commissions and Committees have been announced already in NATURE, but the report of the guild brings them together in a convenient form as a record of official action.

The various committees of the guild continue to do

valuable work. The medical and agricultural committees have drawn up a report on the Government's Milk and Dairies Bill. While recognising that the Bill is a very decided advance in the direction of obtaining pure milk, the committees feel that in certain respects stronger and more drastic action should be taken. A note upon the report of the committees appeared in NATURE of May 1 (p. 222).

A report on tide and wave energy, and on the possibility of utilising this form of energy for power purposes, is being drawn up by the committee on the conservation of natural sources of energy; also a report on the utilisation of peat, which occurs in such enormous quantities in some districts in the British Isles and British possessions.

Owing to the declaration of the Government of the intention to bring in a comprehensive scheme to reorganise the educational system of the country, a joint committee of the education committee and the technical education committee, with Sir William Mather as chairman, was appointed to consider the subject. A valuable report has been drafted, which urges that a scientific system of national education demands:—

(1) The duty of local authorities to make such provisions as will promote healthy growth during infancy and throughout school life.

(2) The absolute necessity of manual work and related practical exercises throughout the whole course of school instruction, and also in the training of teachers.

(3) Efficient public elementary schools within the reach of all children, and attendance at school compulsory until the age of fourteen years is reached.

(4) Attendance at continuation schools for at least six hours per week obligatory up to seventeen years of age for all young persons not otherwise receiving suitable education.

(5) Suitable secondary schools available for all who can profit by them and will undertake to complete the full course of instruction.

(6) The institution of school certificates to serve as passports to higher schools or universities, or as testaments of satisfactory completion of a school course.

(7) Examinations to occupy a secondary place in comparison with school records for the award of certificates, or to qualify for promotion to higher courses of study.

(8) Coordination of technical institutions and faculties of technology in universities in order to prevent overlapping and render specialised types of technological training available to students who have the capacity to profit by them.

(9) Increased grants to universities and other places of higher education for the purposes of ensuring the reduction of fees for all courses and promoting post-graduate research.

(10) The position and condition of service of teachers of every grade to be greatly improved in order to encourage men and women of the highest aptitude and qualifications to devote their lives to the work of teaching and the advancement of knowledge.

(11) Readjustment of the shares of the cost of education borne by the National Exchequer and by local authorities, so that educational progress may be made primarily a national responsibility.

The synchronisation of clocks committee refers to the Government action in connection with the subject, already mentioned. Since the guild took the matter up the Post Office has always viewed the matter sympathetically, and this new departure will, if it be taken up by those exposing public clocks, be

of the utmost value. It is hoped that the railway companies, at least in the metropolis, will take advantage of this enterprise on the part of the Postmaster-General. The borough councils have in the past not been very sympathetic, but perhaps, now that the matter will be arranged for them by the Post Office at such a trifling cost, they will adopt a more progressive attitude.

The explosives committee has considered the question of the available sources of nitrates, and the possibility of obtaining them during war; also the feasibility of manufacturing nitrates on a large commercial scale in this country. The committee considers that it is of the utmost importance that nitrates should be manufactured in Great Britain, even if the manufacture is not profitable; it is, however, of opinion that a commercially successful scheme is possible.

In the report of the Canadian committee reference is made to the conservation of natural resources of Canada. A source of great loss to the country is the prevalence of forest fires, and last year the Government spent the sum of 312,500*l.* in protection against this source of loss. The protection of native birds is also referred to. Much useful work has recently been done by the Canadian Waterways Commission, and in connection with this Dr. H. T. Barnes, the hon. secretary of the Canadian committee of the guild, has continued his valuable researches on ice formation in the St. Lawrence. Other subjects dealt with are radium standards, university settlement, prevention of tuberculosis, and free ice for the poor.

Appended to the report are the reports of committees dealing with the Milk and Dairies Bill, the work of the Canadian branch, and on a national system of education. Prof. R. A. Gregory contributes an appendix in which benefactions exceeding 10,000*l.* for the purposes of science and higher education are recorded, and a comparison is made between the incomes of universities and colleges in the United States and that of State-aided universities in Great Britain. From this article it appears that the total receipts of universities in the United States in the year 1910-11 amounted to nearly nineteen million pounds, and the benefactions to four and a half millions. In the same year, the total receipts of those universities and university colleges in Great Britain which participate in the Treasury grant were little more than 600,000*l.* The receipts from fees in England amounted to rather less than 32 per cent. of the total income. The amount received from endowment was about 15 per cent.; the receipts from local authorities 15.6 per cent. The total receipts of all kinds from the Exchequer amounted to 28.5 per cent. of the income.

As regards numbers of students in universities and technological institutions of university standard, comparison is made with Germany. There are twenty-one universities in the German Empire and eleven technical high schools or technical universities having the power to grant degrees. Taking the universities and technical high schools together, the statistics show that in the year 1910-11 they had about 71,000 matriculated students. The total number of full-time day students in the universities and university colleges of England and Wales (including those of Oxford and Cambridge) in 1910-11 was about 17,000, and in Scotland about 7600, in comparison with 55,000 in German universities. In the technical institutions of the United Kingdom, the number of day students in attendance was about 2000, in comparison with 16,000 in the technical high schools of Germany. From other tables given in the article it appears that more than 90 per cent. of the pupils in the

State-aided secondary schools of England and Wales are under sixteen years of age, and one-quarter of the pupils are under twelve years of age. More than four-fifths of the pupils have not passed an examination of university matriculation standard when they leave school. Two per cent. of the pupils proceed to universities, and 7 per cent. to technical schools and institutions, medical schools, training colleges for secondary-school teachers, and like places providing special training for professions, trades, or commercial occupations.

#### RECENT WORK IN ECONOMIC ENTOMOLOGY.

VALUABLE memoirs published by the Entomological Division of the United States Department of Agriculture are constantly reaching us. Of these, Bulletin 110, on "The Spring Grain-Aphis, or Greenbug," by F. M. Webster and W. J. Phillips, is of more than passing interest. The species described—*Toxoptera graminum*, Rondani—has been noticed as seriously destructive to wheat and other cereals in North America—especially in the Middle Western States—during several seasons from 1890. In the eastern hemisphere it has been recorded only from a few localities—Italy, Hungary, Belgium, India, South and East Africa. The bulletin, extended to 150 pages, gives a full account of the insect, its embryology, post-natal development, habits, and natural enemies. An interesting bionomical observation is that south of the 35th parallel the species reproduces itself only by successive generations of virgin females, and even further to the north the sexual generation may be omitted from the life-cycle in mild winters.

Another bulletin which contains welcome original contributions to our knowledge of the life-history of Hemiptera is No. 108, on "Leafhoppers affecting Cereals, Grasses, and Forage Crops," by Prof. Herbert Osborn. H. M. Russell's contribution (No. 118) on the bean thrips (*Heliothrips fasciatus*) is also noteworthy. It is needless to add that these bulletins all deal with practical means for the extermination or control of the pests.

As a contribution to animal parasitology, Bulletin 106, "The Life-history and Bionomics of some North American Ticks," by W. A. Hooker, F. C. Bishopp, and H. P. Wood, is worthy of mention. It forms an excellent introduction to the ticks of pathological importance, giving diagnostic characters of genera and species, and furnishing in each case details of the early stages in the life-history.

From the Canadian Department of Agriculture we have received Dr. C. Gordon Hewitt's Bulletin, No. 10, on the large larch sawfly (*Nematus Erichsonii*). This paper gives, in a handy form, particulars of the prevalence of the insect as a larch-destroyer in Europe and North America. British entomologists are familiar with Dr. Hewitt's work in connection with this insect in the Cumbrian lake district. He finds it still more injurious across the Atlantic, where, he believes, it must be regarded as an introduced species. Naturally he is endeavouring to acclimatise in Canada the ichneumon-fly (*Mesoleius tenthredinis*), which reduced so considerably the sawfly population on the shores of Thirlmere.

Dr. Hewitt has found time also to contribute to *Parasitology* (vol. v., No. 3, 1912), a short account of the larvæ and bionomics of *Fannia canicularis* and *F. scalaris* (better known to most naturalists under the generic name of Homalomyia). These curious spinose maggots have an unpleasant interest as occasional inhabitants of the human intestinal and urinary tracts.