certain of the developments connected with the natural and exact sciences.—*The Popular Science Monthly.*

COMPULSORY GREEK AT OXFORD AND CAMBRIDGE.

THE discussion of the 'Greek question' by the resident members of Oxford and Cambridge has disclosed so many contradictory views that the average member of Convocation, in despair of definite guidance, may feel inclined to leave things as they are till the experts have made up their minds as to what they want, and why they want it. The limited proposals before 'Congregation' at Oxford were criticized partly because they went too far, partly for not going far enough —the latter, as we gather, being the view of their most formidable opponent, Sir William Anson, as it was of many half-hearted supporters. With all respect, indeed, to the weighty authority of the Cambridge Professor of Greek, Sir Richard Jebb, we can not follow his argument that the adverse vote at Oxford on a smaller proposal made it highly improbable that, whatever Cambridge might do, Oxford would consent to make Greek optional for all candidates for a degree. On the contrary, we are inclined to think that a bolder and more comprehensive proposal would have had a better chance at Oxford than one which raised a great and far-reaching question upon a comparatively small issue; and that Cambridge, if she goes full steam ahead, need not fear being left in the lurch by Oxford, with the result that, as Sir Richard Jebb seemed to fear, the University which retains more Greek will attract the ablest literary talent. The Master of Trinity, Dr. Montague Butler, a classical scholar of the first rank and a teacher of proved experience, regards such gloomy forecasts as baseless, and wholly dissents from Sir Richard Jebb's view that to make Greek optional would be a serious blow to the interests of the highest liberal education in England and throughout the empire. Who, indeed shall decide when such doctors disagree? It is evident, too, from the debates at either university that many who advocate the change do so in the interest of the same liberal education which its opponents think will be imperilled. They foresee danger if the universities continue to stand too fixedly upon the old ways, making no attempt to readjust their requirements to new conditions and to enlarged views of what constitutes a liberal education.—The London *Times.*

NOTES ON ENTOMOLOGY.

PROFESSOR A. P. MORSE has published the first entomological paper under the Carnegie Institution of Washington.* The greater part of the work is occupied by a list of the species taken (ninety in number), with notes on occurrence, habits, variations, etc. Before this systematic list there is some very interesting ethological matter comprising a classification of grasshoppers according to habitat, and an explanation of brachypterism in orthoptera. The classification by habitat is first into geophilous and phytophilous divisions, each divided into campestrian and sylvan groups, and the campestrian into xerophile and hydrophile societies. He finds an explanation of brachypterism in the fact that these species 'dwell in an environment of more or less dense, intricate, interlacing vegetal growth, * * * or in burrows, crevices, etc.' The excellent plates illustrate the habitats of various species.

Dr. R. W. Hoffmann has published a very interesting article on the morphology and physiology of certain parts of springtails.† He has studied particularly the structure and histology of the ventral tube of these tiny creatures; an organ not found elsewhere in insects, and whose function has never been well understood. Some have believed it to be an organ of generation, others considered it a breathing organ, or an organ to take up water, others thought it an organ of secretion, and still others as used to hold the end of the furcula. Many, however, have thought it was

* 'Researches on North American Acridiidæ.' Publ. no. 18, Carnegie Inst. Wash., Oct., 1904, pp. 55, 8 pls., 13 text figures.

† 'Über den Ventraltubus von *Tomocerus plumbeus* L. und seine Beziehungen zu den grossen unteren Kofdrüsen. Ein Beitrag zur Kenntniss der Collembolen.' *Zool. Anz.*, XXVIII., 1904, pp. 87–116.

useful to hold the creature to a surface by suction, and the author after examining the subject very thoroughly comes to the conclusion that the ventral tube is an organ of adhesion.

The one considerable group of American hemiptera, hitherto never catalogued, has at last received attention. Mr. Otto H. Swezey, who had worked on the life-histories of the Fulgoridæ, now presents a catalogue of that family,* listing nearly 180 species, arranged in 56 genera. The place of its publication proves that the public money is sometimes well spent. Three genera lack reference to place of publication; two of these by Westwood are as follows: *Cenchrea, Trans. Linn. Soc. Lond.,* Vol. XIX., p. 15, 1841; *Patara, ibid.,* p. 13. Interest in this family, one of the most attractive of the hemiptera, will doubtless now rapidly increase, and the many new species in collections (mentioned by the author) will receive the attention of the systematist.

The revival of interest in the Termitidæ has induced Mr. G. Jacobson to study the Russian forms.† There is an historical account of the knowledge of Russian termites; a systematic treatment of the species, describing two new species and one new variety of *Hodotermes;* notes on the life-history of the species; an account of the damage done by white ants in Russia; and a brief account of methods of destroying them. In an appendix Mr. J. W. Wassiljew gives some notes on the habits and nests of a species of the Transcaspian region.

There are but few connected accounts of the embryology of insects as a whole, therefore the book by Felix Henneguy will be of great assistance to all interested in this subject.‡ There is a general account of the external structure of insects, followed by chapters on the internal anatomy. The greater part (500 pp.) of the work deals with the embryology of insects, and subjects related thereto. A long bibliography is appended.

Mr. Distant has issued five parts of his promised 'Insecta Transvaaliensia.'* It is a separate publication, in large quarto; each part with two or three plates, several of them colored. He has been assisted in the work by many specialists. The parts so far issued are excellently prepared, and deal with parts of the orthoptera, lepidoptera and coleoptera (Cerambycidæ).

Claude Morley has published one volume of his promised monograph of British Ichneumonidæ.† This part treats of the subfamily Ichneumoninæ, deals with about 310 species belonging to 49 genera. In the main he follows the classification of Thomson. There are synoptic tables to the tribes, genera and species; a glossary is appended, and there are many unnumbered figures.

Fascicle 19 of Wytsman's 'Genera Insectorum' treats of the Vespidæ, or true wasps. It is by Dr. K. W. von Dalla Torre, and occupies 108 pp., with 6 colored plates. As usual there is a synopsis of the genera, and a catalogue of the known species. It is at once evident that this fascicle is one of the best of the series so far issued, and the result of a careful investigation of the species.

The First Report of the Wellcome Research Laboratories at the Gordon Memorial College has been issued by the Department of Education of the Sudan government at Khartoum, and contains 84 pages and many illustrations. There is an account of the habits and habitats of many Sudanese mosquitoes, and the results of the committee's work in locating the breeding places. Mr. Theobald has furnished a systematic article on the mosquitoes of the Sudan and of Abyssinia, illustrated with colored plates, and describing many new species. The same author enumerates other biting insects, and treats of several other injurious species,

* 'A preliminary catalogue of the described species of the family Fulgoridæ of North America, north of Mexico.' Bull. no. 3, Ohio Dept. Agric., Div. of Nursery and Orchard Inspection, Oct., 1904, 48 pp.

† 'Zur Kenntniss der Termiten Russlands.' *Ann. Mus. Zool. Acad. Imp. Sci.,* St. Petersbg., IX., pp. 57–107, 1904.

‡ 'Les Insectes: Morphologie, Reproduction et Embryogenie,' by L. Felix Henneguy, Paris, Masson et Cie, 1904, pp. 804, figs. 622.

* 'Insecta Transvaaliensia. Contributions to a knowledge of the entomology of South Africa,' by W. L. Distant, London, 1901–1904. 4to.

† 'Ichneumonologia Brittanica; the Ichneumons of Great Britain.'—Plymouth [England], 1903, 315 pp.

particularly of the melon bug and the Dura aphis.

NATHAN BANKS.

*INTERNATIONAL COOPERATION IN SOLAR RESEARCH.**

As chairman of the committee on solar research of the National Academy of Sciences, which had issued the call for the conference, Professor George E. Hale called the meeting to order and explained the purpose of the conference. After referring to previous movements to secure cooperation in solar research, he emphasized the importance of encouraging individual initiative, and urged that no less attention be paid to such encouragement than to the accomplishment of large pieces of routine work through cooperative effort.†

The following officers were then elected to serve for this meeting:

President—Professor George E. Hale.
Vice-president—Professor Henri Poincaré.
Recording secretary—Professor C. D. Perrine.

A motion that for this meeting the voting be by societies and that each society be allowed one vote, was adopted.

A motion was made and carried that the chairman of each society's committee should cast the vote for that society.

After some remarks by Professor Hale on cooperation the following motion was made by Professor Turner:

That this meeting is in favor of the organization of a scheme of international cooperation in solar research which shall encourage individual initiative, provide suggestions for definite lines of work, and facilitate the collection of results for publication.

This expression, after remarks by Professors Poincaré, Boltzmann and Hale, was made the sense of the meeting.

Professor Hale stated that in appointing its committee on Solar Research, the National Academy of Sciences had given the committee authority to join the president and foreign secretary of the academy in presenting its plans for cooperation to the International Association of Academies. The opportunity now existed of securing the views of the conference on this subject.

After remarks by various delegates upon the relations of scientific societies among themselves and to the International Association of Academies, the following motion was made by Professor Poincaré:

That a committee to be appointed at this meeting negotiate with the Academy of Sciences of Vienna with the view of obtaining the approval and the patronage of the International Association of Academies.

This motion was seconded by Professor Boltzmann and adopted.

A short discussion then ensued upon the fullness of the representation of interested individuals and societies in the preparation of plans for cooperation in solar research.

Dr. Bauer moved: That the sub-committee on terrestrial magnetism and atmospheric electricity of the international meteorological committee be invited to appoint a committee to cooperate with the solar research committee.

This motion was seconded by Mr. Rotch and adopted.

Professor Turner moved: That the Hungarian Academy of Sciences of Budapest also be invited to appoint a committee to cooperate with the solar research committee.

This motion was seconded by Professor Frost and adopted.

The following general motion was then made by Professor Poincaré and adopted:

That the international committee on solar research, to be appointed, be authorized to invite, at its discretion, societies and individuals which have been omitted, to cooperate.

The subject of the formation of an international committee was then discussed.

Professor Turner moved: That each committee participating be invited to appoint a member to serve on the international committee.

This motion was seconded by Professor Campbell and adopted.

Mr. Rotch, delegate of the sub-committee of the international meteorological committee on the relationship between meteorological

* Minutes of the meeting of delegates to the Conference on Solar Research, held in the Hall of Congresses, St. Louis, September 23, 1904.

† See *Astrophysical Journal*, December, 1904.