

distribution of floating ice to be very important, and appeals to the hydrographic and meteorological institutes of the countries whose ships frequent high latitudes to induce the masters of vessels to keep a regular record of the occurrence of drifting ice. The Congress believes that the Danish Meteorological Institute in Copenhagen is the best adapted as an international centre for collecting the records.

(11) The Congress nominates an international committee to consider the nomenclature of the floor of the ocean, and to produce and publish at latest in time for the next Congress a chart of the ocean with revised nomenclature.

(12) The Congress hopes that the names of oceanic islands, especially in the Pacific, will be revised with a view to ascertaining and preserving the native names. Where no native names exist or can be ascertained, the names given by the discoverers should be used. The arbitrary changing of established names ought to be opposed by every means.

(13) The Congress recognises the desirability of obtaining data for a more exact estimate than now exists of countries in which there is no means of taking a census, and desires to bring the matter to the notice of such Governments as have foreign possessions.

(14) The Congress expresses sympathy with the proposal to equip an expedition in New South Wales, with the sole object of endeavouring to discover remains or traces of the route of the Leichhardt expedition, which perished in the interior of Australia fifty-two years ago.

(15) The Congress is favourable to the foundation of an international seismological society, and appoints an international committee for the study of earthquakes.

(16) The Congress believes the production of a map of the world on the scale of 1 : 1,000,000, the sheets bounded by meridians and parallels, to be both useful and desirable. The Permanent Bureau of the Congress is instructed to deal with the question, and in the first instance to secure the preparation of a projection for the map with degree-lines on the determined scale.

(17) The Congress considers the establishment of an International Cartographical Association of service, and appoints a committee to take preliminary steps.

THE SCIENTIFIC CONFERENCE AT WIESBADEN.

WE refer in a leading article to one of the most important developments of scientific organisation which our time has seen. The proceedings at a recent conference at Wiesbaden, dealing with this matter, are thus stated in Monday's *Times* :—

"For several years past there has existed an Association or Cartell of the Academies of Sciences of Munich and Vienna and of the Royal Societies of Sciences of Göttingen and Leipzig, which has met yearly to discuss matters of common interest, and the combined action of these bodies has in several ways been fruitful of results. Representatives of the Royal Society of London attended the meeting held last year at Göttingen, as well as that which took place the previous year at Leipzig, chiefly with the object of discussing the project of an international catalogue of scientific literature which the society has been engaged in promoting.

"When the invitation was conveyed to the Royal Society of London to send representatives to the Göttingen meeting it was intimated that the Cartell would be glad to learn the views of the society as to the possibility of its joining the association. The delegates appointed from London were instructed to state that the Royal Society would be disposed to join provided that the organisation were so extended as to assume a truly international character. This suggestion was not only accepted in principle at Göttingen, but it was agreed that the Royal Society of London should be requested to take the steps, if thought desirable, to ascertain how far the establishment of such an international association would commend itself to the leading scientific bodies of other countries.

"The Royal Society of Sciences of Berlin, although not included in the Cartell, has for several years past been represented at its meetings. When the Royal Society of London had ascertained that the project was likely to find favour it was agreed that the Royal Society and the Berlin Academy should together issue an invitation to the Academy of Science, Paris, the Imperial Academy of Sciences, St. Petersburg, the

Reale Accademia dei Lincei, Rome, the National Academy, Washington, U.S.A., as well as to the bodies included in the Cartell, requesting them to send delegates to a conference to be held in Wiesbaden on the 10th and 11th of this month.

"At the conference, excepting the Reale Accademia dei Lincei, which was unable to send delegates, although in full sympathy with the movement, all the bodies invited were represented—the Berlin Academy by Messrs. Auwers, Virchow and Diels; the Göttingen Society by Messrs. Ehlers and Leo; the Leipzig Society by Messrs. Windisch and Wislicenus; the Royal Society by Messrs. Rücker, Armstrong and Schuster; the Munich Academy by Messrs. von Zittel Dyck and von Sicherer; the Paris Academy by Messrs. Darboux and Moissan; the St. Petersburg Academy by Messrs. Famintzine and Salemann; the Washington Academy by Messrs. Newcomb, Remsen and Bowditch; and the Vienna Academy by Messrs. Mussafia, von Lang, Lieben and Gomperz.

"Prof. Auwers, one of the secretaries of the Berlin Academy, occupied the chair, and the success of the meeting was largely due to the extreme ability and tact, combined with judicious firmness, with which he conducted the proceedings. Besides showing himself a master of the three languages—German, French and English—used in the debates, he was thoroughly informed on every point which came up for discussion. Fortunately, all the delegates appeared to be actuated by the desire to co-operate, and there was little difficulty in framing statutes which all were prepared to accept.

"The immediate outcome of the conference has been that it is resolved to found an international union of the principal scientific and literary bodies of the world, the object of which will be to initiate or promote scientific enterprises of general interest recommended by one or more of the associated bodies, and to facilitate scientific intercourse between different countries. It is to be known as the International Association of Academies. A number of important bodies besides those represented at Wiesbaden are to be invited to join. General meetings of delegates from the various constituent academies are to take place, as a rule, at intervals of three years, but the interval may be varied and special meetings held if necessary. The Royal Society had proposed, prior to the conference, that the first general meeting should be held in Paris next year. At the general meetings two sections will be constituted, one dealing with mathematics and the natural sciences, the other with arts and philosophy.

"A council is to be appointed which will carry on the business in the intervals between meetings. The formation of committees of experts to initiate and promote scientific investigations of international importance is also contemplated.

"It remains to be mentioned that the Berlin Academy had also arranged for the entertainment of the delegates at the close of the debates. On the Monday evening they were invited to attend a performance of Lortzing's opera *Undine*, and on the Tuesday they were entertained at dinner in the Kurhaus. On the latter occasion Prof. Virchow occupied the chair, and opened the proceedings by toasting the delegates generally; he was followed by Prof. Darboux, of Paris, who proposed the health of the Berlin Academy. In the course of the evening, in characteristic German style, every other possible toast was proposed by one or other of the delegates.

"It is to be hoped that when the statutes framed at the conference are communicated to the various bodies interested they will meet with approval, and that the establishment of the organisation will soon be an accomplished fact. In times when political feeling is so strongly developed the provision of a common platform on which all nations can meet amicably and co-operate in furthering scientific enterprises must prove of the very greatest value; and if the spirit of amity which prevailed at the conference be extended to future meetings the success of the association is assured."

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Sir Michael Foster has been reappointed a manager of the Balfour Fund for zoological research.

Mr. Yule Oldham, reader in geography, is giving three courses of lectures this term : (1) on the Geography of Europe, for history students; (2) on Physical Geography; and (3) on the History of Geographical Discovery.

The degree of M.A. honoris causa is to be conferred on Dr. Somerville, the recently-elected Professor of Agriculture.

Mr. W. N. Shaw, F.R.S., is reappointed Assistant-Director of the Cavendish Laboratory.

Prof. D. J. Cunningham, F.R.S., of Dublin, is appointed an Elector to the chair of Anatomy, and Prof. W. F. R. Weldon, F.R.S., of Oxford, an Elector to the chair of Zoology, in succession to the late Sir W. H. Flower.

Dr. D. MacAlister, of St. John's College, has been re-elected a representative of the University on the General Medical Council for five years.

Fifteen candidates have passed the recent examination in sanitary science, and have thus qualified for the Diploma in Public Health.

THE destruction of the Technical Institute at West Ham by a fire which occurred on Monday night, and was first discovered in the chemical laboratory, is a disaster to technical education in London. The Institute commenced a short time ago an admirable programme of work in science and technology, and as it was the only municipal technical institute in the metropolitan area, its career has been closely followed. The damage done is estimated at over 80,000*l.*, only part of which is covered by insurance.

THE systematic study of geography is so much neglected in this country that it is to be hoped the School of Geography recently established at Oxford will be successful. During the present term Mr. H. J. Mackinder, the University Reader in Geography, will lecture on the historical geography of the British Isles. The lecturer in physical geography (Mr. Dickson) will lecture on the climate of the British Isles. The assistant to the Reader (Dr. Herbertson) will lecture on the geomorphology of Europe; and the lecturer in ancient geography (Mr. Grundy) will lecture on the general historical topography of Greece. Dr. Herbertson will give instruction in cartography and practical geography, with field work; and during the term special attention will be given to the study of map projections, and of physical maps of all kinds.

ANOTHER addition to the laboratory equipment of our public schools has recently been made at Felsted, where new buildings for the teaching of science were opened last week. The laboratory consists of a lecture room with raised seating and a gallery, the lecture table being provided with down draught and electricity for experimental purposes, and behind it a faced wall surface for the lantern. The chemical laboratory is a room about thirty feet square to accommodate twenty-six boys, and has an adjoining balance room. In addition there is a general physical laboratory for a like number of boys, a special laboratory for senior physics, an optical room, store room and workshop. The building is in a large measure a gift of one of the governors of the school, and has been erected under the direction of Mr. A. E. Munby. It was opened by Dr. Garnett, of the London County Council, who gave an address on science as a means of general education. Sir John Gorst recently visited the building and expressed his warm approbation of the arrangements.

PRACTICAL science in rural districts, as a means of benefiting British agriculture, has, we are glad to observe, received much support lately. The meeting of the Agricultural Education Committee, held at the Society of Arts on Friday last, showed the existence of a strong feeling that active efforts should be made to secure systematic and efficient instruction, both theoretical and practical, in agricultural subjects suitable to every class engaged in agriculture; and to diffuse among the agricultural classes a more thorough appreciation of the advantages of instruction bearing directly or indirectly on their industry. The chairman, Sir William Hart Dyke, explained that the province of the committee, as a united body, was to bring pressure upon Parliament and upon public opinion to establish in rural schools rational courses of instruction bearing upon agricultural pursuits. The following resolutions were subsequently adopted:—(1) That, in the proposed organisation of the new Board of Education, due regard should be had to the interests of agricultural instruction. (2) That proper provision should at once be made at certain of the Teachers' Training Colleges for giving to those who desire it both theoretical and practical instruction in subjects bearing on agriculture and horticulture. (3) That, after a certain date to be named in next year's code, instruction in the elementary branches of natural

science bearing on agriculture should be made compulsory in rural elementary schools, and that such instruction should be accompanied and illustrated by experiments, and (where possible) by practical work in plots of ground attached to the schools. (4) That county authorities be encouraged to provide experimental and school farms, and to contribute, by scholarships and otherwise, to some agricultural college or department of the first rank. The realisation of the conditions expressed in these resolutions should be desired by every one interested in national progress.

SCIENTIFIC SERIAL.

Wiedemann's Annalen der Physik und Chemie, No. 9.—Dispersion of gypsum, by W. König. The author studies the dispersion of gypsum in the visible spectrum by observing the influence of wave-length upon the width of interference fringes produced by means of wedges made of that material.—Electric charge of freshly-prepared electrolytic gases, by W. Kösters. Hydrogen and oxygen are positively electrified by passing through sulphuric acid, and this may help to explain the positive charge of the same gases when produced by electrolysis. In other cases, however, the gases passed through a liquid do not assume the same electrification as when generated by electrolysis.—Further experiments with Becquerel rays, by J. Elster and H. Geitel. Thinking that the radiation of uranium and thorium compounds might be influenced by the impact of kathode rays, the authors exposed a piece of Joachimsthal pitchblende to kathode rays, but they could not trace any influence of the rays. The authors believe the Becquerel rays to be Röntgen rays of small intensity. They support this view by showing that they are not deflected by a magnet (see p. 623).—Radio-active baryta and polonium, by F. Giesel. The author describes the preparation of the radio-active barium salts. He has not yet succeeded in isolating the active principle, whether radium or polonium.—Canal and kathode rays, by P. Ewers. The writer does not share the prevalent opinion that canal rays consist of projected anode particles, since the quantity of electricity conveyed by them varies with the material of the kathode, but not with that of the anodes. He concludes that the canal rays consist of positive ions of the material of the kathode, but the matter thus conveyed to the wall is so small that it would require 288 hours of continuous working to deposit one milligramme of aluminium.—Law of development of Hittorf's dark space, by H. Ebert. Hittorf's dark space is the narrow space which immediately adjoins the luminous kathode layer. Its width increases as exhaustion proceeds, and does so in accordance with a geometrical series when the pressure diminishes in another geometrical series. The indices of the series are, however, generally different.—Magnetic susceptibilities of inorganic compounds, by S. Meyer. Judging from their compounds, the rare elements lanthanum, cerium, praseodymium, samarium, gadolinium, and especially erbium, must be strongly magnetic. Erbium oxide is four times as strongly magnetic as Fe_2O_3 , and if the conclusion as to their bases is correct, erbium must be, weight for weight, six times as strongly magnetic as iron. This would have an important practical signification if erbium were to be found in large quantities.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, October 16.—M. van Tieghem in the chair.—On the positions of equilibrium of a ship carrying liquid cargo, by M. Appell. The author develops a problem of M. Guyou, giving a means of finding the positions of equilibrium and discussing their stability.—Method of setting a collimator, by M. G. Lippmann. The slit is observed with an auxiliary telescope, and between this and the collimator a biplate is inserted. In general two images of the slit are observed, but on adjusting the collimating lens, at one point the two images coincide; the rays issuing from the collimator are now parallel. The accuracy of the adjustment is limited only by the resolving power of the telescope.—Production of ozone by the decomposition of water with fluorine, by M. Henri Moissan. A rapid current of fluorine, prepared in a copper apparatus, is passed