speaker in opposition was Prof. J. E. Holland (All Souls), who thought that council should have proceeded by resolution rather than by Statute. On a division the preamble was carried by 69 to 7.

THE KING has consented to open the School of Oriental Studies, London Institution, on Friday morning, February 23.

DR. C. E. MOSS, Botany School, Cambridge, has been appointed professor of botany in the South African School of Mines and Technology, Johannesburg.

AT the request of Mr. Fisher, Prof. Gilbert Murray, professor of Greek, Oxford University, is undertaking temporary work at the Board of Education, taking the place of Mr. H. F. Heath, C.B., now Secretary of the Department of Scientific and Industrial Research. Mr. Heath was head of the Universities Branch of the Board, and also Director of Special Inquiries and Reports.

ONE of the sections of the report to the Prime Minister of the Speaker's conference on electoral reform, which was issued on Tuesday, deals with university representation. The following recommendations are made:—(*a*) The Universities of Oxford and Cambridge shall continue to return two members each; the electorate shall be widened, and, in order to secure a proper representation of minorities, each voter shall be allowed to vote for one candidate only. (*b*) The Universities of Durham, Manchester, Birmingham, Liverpool, Leeds, Sheffield, Bristol, and the University of Wales shall receive representation; these universities shall be grouped with the University of London so as to form a single constituency returning three members elected on the system of a single transferable vote. (*c*) The combined Universities of Edinburgh and St. Andrews and of Glasgow and Aberdeen shall also be grouped so as to form a single constituency returning three members under the system of a single transferable vote. (*d*) As regards all universities, the obtaining of a degree shall be the basis for electoral qualification.

THE following resolutions were passed at the annual meeting of the Association of Science Teachers, held at the University of London on January 6:—(1) That the science teaching in the schools should aim at developing in the pupils (*a*) the power to observe accurately, to reason logically from observed facts, to frame hypotheses and to test these hypotheses by means of their own experiments; (*b*) a spirit of interest and inquiry with regard to the world around them and the universe at large, an interest in the growth of knowledge in the past, and an appreciation of some of the wider problems with which science deals at present and which influence modern thought and modern activities. (2) That in order to accomplish the first of these aims a thorough course of experimental work in the laboratory is absolutely necessary, that such a course should be continuous, or nearly so, from the ages of twelve to sixteen, and that in this course the pupils should, so far as possible, be encouraged to attack problems for themselves. (3) That as such a course by itself would necessarily cover a very narrow field, the work should be supplemented by teaching or by activities on the part of the pupils themselves, designed to bring them into contact with the wider issues indicated in (1. *b*). (4) That if science is to play its due part in the curriculum as indicated in the foregoing resolutions lessons encouraging the children to observe the phenomena of Nature should be given from the earliest ages, while between the ages of twelve and sixteen not less than an average of one-seventh of the teaching hours of the school should be given to science.

SOCIETIES AND ACADEMIES.

LONDON.

Geological Society, January 10.—Dr. A. Harker, president, in the chair.—H. A. **Baker**: The Palæozoic platform beneath the London Basin and adjoining areas, and the disposition of the Mesozoic strata upon it. With an appendix by Dr. A. M. Davies. The author carries on the work of tracing the contours of the Palæozoic platform of S.E. England. By comparing these with the contours of the base of the Gault, the probable boundaries of the areas of the platform that were only submerged finally under the Gault sea are determined. The effects of post-Cretaceous tilting and warping are analysed. The successive Mesozoic overlaps on the platform, their probable areas, and the tectonics of the platform are discussed. Evidence is given for a second Charnian axis, proceeding southeastwards through Norfolk and Suffolk, east of Kent, to the North of France.—Dr. C. **Lapworth**: Balston Expedition to Peru: report on graptolites collected by Capt. J. A. Douglas, R.E. The graptolites were collected from the rocks of the Inambari district. The specimens are recorded as all occurring in the same locality, but it is not known whether they were obtained from a single zone. The lithology of the containing rocks and the mode of preservation of the graptolites are similar to those obtaining in the richest of graptolite-bearing strata of Britain, Europe, and North America. Taken as a whole, this graptolite fauna may best be compared with that of the Upper Arenig formation of Britain and its North American equivalents. The assemblage of graptolites discovered in Bolivia a few years ago by Dr. J. W. Evans corresponds closely with this Peruvian fauna, and was probably derived from the southward continuation of the same Andean graptolite-band. The Douglas collection of Peruvian graptolites greatly strengthens the inference that in Arenig-Llandeilo times there was open-sea communication admitting of the circulation of sea-currents along some as yet undetermined line or lines, connecting these widely separated regions, which must have extended across the equator and apparently throughout a length nearly equal to that of half the circumference of the globe.

Linnean Society, January 18.—Sir David Prain, president, in the chair.—Prof. F. O. **Bower**: The morphology of the sorus of ferns. The isolated sporangium (monangial sorus of Prantl) is frequent among primitive Filicales. The distal or marginal position of the sorus is prevalent in primitive types. The transition from a marginal to a superficial position has frequently occurred. Interpolation of sporangia has led to increased complexity of the sorus. In simple, gradate, and mixed sori thus constituted the receptacle varies: it is not a stable entity, but a result of elaboration of the vein-ending on which the sporangia are seated. Superficial extension of sori occurs. Duplication of sori also occurs. Fusion of sori occurs progressively in various phyla. The fusion-sorus may disintegrate, but not necessarily along the original lines of fusion. The identity of the sorus may be lost by acrostichoid development, which has occurred along numerous lines of phyletic advance. The more complex sori of ferns, as they are now seen, are referable along such lines of comparison to marginal or distal monangial sori. Such a position of isolated or few sporangia is found to prevail in plants of the Lower Devonian period. The marginal placentation of seed-plants is probably more than a mere analogy.

Aristotelian Society, January 22.—Dr. H. Wildon Carr, president, in the chair.—C. E. M. **Joad**: Monism in the light of recent developments in philosophy. A monistic theory confuses two distinct propositions. A

thing is what it is, not only because it has a place in the universe, and because of its relations to other things, but also because those relations are not the thing. To assert that a thing is its relations involves a second and quite different proposition. A thing indeed presupposes reality and its connections with it, just as our apprehension of a truth presupposes reality. But when we assert that a thing is what it is because of its connections with reality, we do not mean that the thing is its connections. They condition it, but it is separate from them. The other main monistic argument is to the effect that the ultimate Real being one and indivisible, all analysis by means of which we arrive at a world composed of things and relations is a false abstraction of thought, which leads us away from Reality. It is true that a whole, although created by its parts, is more than their sum. A whole, as opposed to an aggregate, is a unity—a new entity which has come into being by their synthesis. But such a whole clearly has parts which it cannot be a fiction to distinguish from one another. The fact that analysis of a whole into parts destroys the whole does not mean that it also destroys the parts, or that the parts are not really its parts, or that they cannot exist as distinguished from one another.

PARIS.

Academy of Sciences, January 2.—M. C. Jordan (later M. A. d'Arsonval) in the chair.—G. **Bigourdan**: The principle of a new zenithal telescope.—Ch. **Depéret** and L. **Gentil**: An upper Miocene marine fauna in the R'arb, western Morocco.—C. **Guichard**: The K networks of general quadrics.—W. **Kilian** and J. **Révil**: The Pleistocene formations and the morphology of the Arc valley, Savoy.—G. **Julia**: The reduction of binary forms with real coefficients of any degree whatever.—G. H. **Hardy** and S. **Ramanujan**: An asymptotic formula for the number of partitions of n.—E. **Belot**: The theory of spiral nebulæ and the true sense of their rotation.—J. **Guillaume**: Observations of the sun made at the Observatory of Lyons during the third quarter of 1916. Observations were possible on eighty-nine days, and the results are given in three tables showing the number of spots, their distribution in latitude, and the distribution of the faculæ in latitude.—C. K. **Reiman**: The absolute density of hydrobromic acid. The gas was prepared by three independent methods, the final purification being by liquefaction and fractional distillation in a vacuum. The mean of thirty-one determinations is 3·6442 grams per litre.—P. **Gaubert**: The indices of refraction of the rhombohedral carbonates. Figures are given for gioberite, siderite, dialogite, smithsonite, dolomite, ankerite, and mesitite. The value of the indices of refraction of various dolomites, ankerites, etc., agrees with that obtained by calculation on applying the laws governing the relations between the indices of an isomorphous mixture and those of its components, but the agreement is only approximate.—V. **Commont**: The Pre-Quaternary Somme-Oise.—E. **Harlé** and J. **Harlé**: The maritime dunes of the coast of Gascony.—A. **Nodon**: Observations of the atmospheric disturbances during the months of October and November, 1916. Confirming earlier researches, there is found to be a close relation between the solar perturbations, electromagnetic disturbances, and disturbances of the terrestrial atmosphere.—Ph. **Flajolet**: Disturbances of the magnetic declination at Lyons (Saint-Genis-Laval) during the third quarter of 1916.—P. de **Beauchamp**: New researches on sexuality in Dinophilus.—L. **Lindet**: Waste in alcoholic fermentation.—F. **Garrigou**: Special examination of urines for the rapid and correct choice of a thermal station.—O. **Laurent**: The realisation of siamoisism in animals. Experiments on grafting together two different animals.—P. Lecomte du **Noüy**: The relative *rôle* of surface and perimeter in the phenomenon of cicatrisation of wounds at the surface and the formula which interprets them.

January 8.—M. A. d'Arsonval in the chair.—The president announced the death of Prof. Chauveau, in his ninetieth year.—M. **Hamy**: The approximate value of a definite integral.—P. **Appell**: An extension of the equations of the theory of vortices and of the equations of Weber.—M. de **Sparre**: Calculation of the hammer in a water-main formed of two sections of different diameters.—M. **Depage**: The secondary transformation of open into closed fractures. A detailed description of a new application of Carrel's method for irrigating fractures.—W. H. **Young**: A new set of conditions for the convergence of Fourier's series.—M. **Petrovitch**: The limit of extensibility of an arc of certain curves. The curves, the deformation of which is examined, are such that on going from one extremity to the other none of the x co-ordinates changes the sense of its variation, each of them increasing or decreasing along the arc.—M. **Souslin**: A definition of measurable B ensembles without transfinite numbers.—N. **Lusin**: The classification of M. Baire. Some consequences of the results of M. Souslin in the preceding paper.—L. **Hartmann**: The systematic variation of the value of the kinetic energy in the elastic rebound of bodies. According to experiment, in the elastic shock of bodies the sum $mV^2+m'V'^2$ is not constant and independent of V and V′, contrary to the proposition of Leibnitz.—J. **Olive**: The mechanical trace of the ballistic hodograph.—E. **Esclangon**: The reflection and refraction of isolated waves at the surface of separation of two fluids in repose or in motion.—A. **Pereira-Forjaz**: Spectrographic studies of Portuguese minerals of uranium and zirconium. Results are given for chalcolites from Sabugal and Nellas, autunite from Nellas, and zircon from Alter Pedroso. Radium was present in the chalcolites.—P. **Fallot**: The geology of the island of Ibiza.—F. **Grandjean**: The orientation of anisotropic liquids on the cleavages of the crystals. An account of the examination of anisaldazine, *p*-azoxyanisol, and *p*-azoxyanisolphenetol. It is concluded that the property of orientation of an anisotropic liquid on a determined cleavage is not a reticular property.—J. **Deprat**: The geological exploration of the part of Yun-nan comprised between the Tonkin frontier, the Kwang-si, and the Kwei-tcheou.—Ph. **Glangeaud**: The substratum of the volcanic massif of Mont Dore.—E. **Belot**: Provisional trace of the curve described by the magnetic north pole since 1541.—Mlle. Y. **Dehorne**: A new Stromatopore from the Lusitanian of Cezimbra (Portugal).—P. **Lesage**: The germination of the seeds of *Lepidium sativum* in solutions of electrolytes.—C. **Galaine** and C. **Houlbert**: A new arrangement for the rapid filtration of potable waters after their purification by the Lambert-Laurent process. After treatment with potassium permanganate, the removal of the precipitated oxide of manganese presents practical difficulties. It is proposed to modify the apparatus so that the purification and filtration take place in the same vessel, without transference and possible re-contamination.—F. **Dienert** and G. **Mathieu**: Search for typhoid and paratyphoid bacilli.

BOOKS RECEIVED.

Recherches sur les Mouvements Propres des Etoiles dans la Zone Photographique de Helsingfors. By R. Furuhjelm. Pp. 190. (Helsingfors: Société de Littérature Finnoise.)

Compressed Air Practice in Mining. By D. Penman. Pp. vii+221. (London: C. Griffin and Co., Ltd.) 5*s*. net.