Societies and Academies.

PARIS.

Academy of Sciences, August 22.—M. Léon Guignard in the chair.—J. K. **de Fériet**: Hypergeometric functions of higher order with two variables.—R. **Serville**: The tangential and radial resistance of a turning body. Application to the isochronism of the conical pendulum by a central force.—K. **Ogura**: The movement of a particle in the field of a charged nucleus.—St. **Procopiu**: The depolarisation of light by liquids holding crystalline particles in suspension. Depolarisation is practically *nil* for pure liquids, very small for non-crystalline suspensions or for substances crystallising in the cubic system, and large for doubly refracting suspensions. A solution of ferric chloride is strongly depolarising, suggesting that the colloidal particles are crystalline and doubly refracting.—P. **Dejean**: The transformation of iron at the Curie point. From the experiments described it is concluded that the apparent discontinuity produced in the magnetic qualities at the Curie point can be explained by a continuous action, either the progressive transformation of an α form into a β form, or, more simply, the progressive separation of the elementary magnets by the gradual rise of temperature.—M. **Bridel** and Mlle. Marie **Braecke**: The presence of a glucoside hydrolysable by emulsin in two species of the genus Melampyrum. These plants blacken on drying, and this is shown to be due to the presence of a glucoside. This glucoside, on hydrolysis, gives a black insoluble substance. It is possible that the glucoside is aucubine.—M. **Bezssonoff**: The anti-scorbutic principle in potato-juice extracted in presence of acids. The juice extracted from potatoes by pressure possesses a very small antiscorbutic action. As it was thought probable that the antiscorbutic principle might under these conditions have been destroyed by laccase, a small proportion of citric acid was incorporated with the potato before applying pressure. The acidity in the juice thus obtained was sufficient to inhibit the oxidising action of the laccase, and it was found that the antiscorbutic action of this expressed potato-juice was much higher than that expressed without the addition of acid.—J. **Mascart**: Weather forecasts for long periods.—J. **Politis**: The *rôle* of the chondriome in the defence of the plant against parasitic invasion.—H. **Ricome**: The orientation of the stem.—St. **Jonesco**: Anthocyanidines in the free state in the flowers and red leaves of some plants. Proof that this red pigment exists in the free state in red organs of plants.—A. **Kozlowski**: Saponarine in *Mnium cuspidatum*.

September 5.—M. Georges Lemoine in the chair.—S. **Banach**: Ensembles of points the differential coefficient of which is infinite.—J. **Grialou**: The irrotational and permanent movement of a liquid, the trajectories being vertical and plane and the *régime* permanent.—A. **Lumière** and H. **Couturier**: The relations between the anaphylactic shock and the introduction of precipitates into the circulation. The experiments of Arthus on the introduction of an emulsion of beeswax into the veins gave results which appear to contradict the physical theory of shock put forward by the authors. Additional experiments with the wax emulsion are described, showing that this can also cause anaphylactic shock if injected into the left ventricle of the heart. The authors regard the experiments of Arthus as affording additional confirmation of their views as to the cause of shock.—J. **Pottier**: Observations on the chromatic masses of the nuclei and of the cytoplasm of the cells of the canal and of the wall of the neck of the archegonium in *Mnium undulatum*.—N. **Bezssonoff**: A colour reaction common to antiscorbutic extracts and hydroquinone. The author describes a modification of the Folin-Denis phenol reagent which gives a blue coloration with plant extracts known to possess antiscorbutic power and no coloration, or colour not blue, with plant extracts devoid of antiscorbutic power. It is not regarded as proved that the blue colour is due to the antiscorbutic substance, since it may be caused by a polyphenol split off in solution from the vitamin C. Of the numerous phenols tested the only one giving the same blue colour proved to be hydroquinone.

EDINBURGH.

Royal Meteorological Society, September 7.—Mr. R. H. Hooker, president, in the chair.—R. H. **Hooker**: The functions of a scientific society, with special reference to meteorology. The main functions of a society are the discussion of discoveries, the formation of a library, and the printing of technical papers. In spite of the increase in Government institutions undertaking original scientific investigations, there are more scientific experts outside Government service than in it, and the latter find the society a necessary means of inter-communication in order to keep abreast of the times. The spread of science among the greatest number of people is one of the most important objects of the society. The recent amalgamation of the Royal and Scottish Meteorological Societies might appear to curtail the opportunities of Scottish fellows, but the present session in Edinburgh was intended to be the forerunner of others. Also, local meetings could be held at any centre where there were a sufficient number of fellows within reach.—Dr. A. **Macdonald**: Meteorology in medicine, with special reference to the occurrences of malaria in Scotland. The fundamental meteorological factor influencing biological reactions is temperature. This influence is universal in its application to organic life, and has specific implication in the production of disease. The *rôle* of temperature in the manufacture of diseases due to the parasitic protozoa is dealt with in a consideration of the temperature limitations of the development of the sexual phase of the plasmodia of malaria in the anopheline mosquito. The history of the occurrence of malaria (ague) in Scotland is studied in relation to temperature conditions that have prevailed since early in the eighteenth century. Actual recorded outbreaks are shown to coincide with abnormal high temperature over several months in consecutive years. Wars have been the main factor in the introduction of malaria infection, which, although powerless to establish the disease endemic in Scotland, will produce an outbreak when importation in large volume coincides with a mean temperature of 60° F. continued over a period.—Dr. A. Crichton **Mitchell**: The diurnal variation of atmospheric pressure at Castle O'er and Eskdalemuir Observatory, Dumfriesshire. The hourly values of atmospheric pressure recorded at Eskdalemuir Observatory during the ten years 1911–20 have recently been reduced, and a comparison with those obtained by Dr. C. Chree from the Castle O'er barograph records during 1902–8 show very considerable differences, although the stations are close together. These differences are probably due to unsuitable exposure of the Castle O'er instrument and to its imperfect temperature compensation.—Dr. S. **Fujiwhara**: The natural tendency towards symmetry of motion and its application as a principle in meteorology. "Any revolving system in Nature tends towards symmetry within the limit of its freedom." A special case of this principle is that "when any revolving fluid lies near to a plane boundary its axis tends to become normal to that boun-

dary." Many examples supporting the above principle have been obtained from meteorological observations, and synthetically the universal existence of the above proposition is assumed. It is suggested that the present principle must be derived from "the principle of equality."—C. J. P. **Cave**: Some notes on meteorology in war-time.

Books Received.

An Experiment in Synthetic Education. By Emily C. Wilson. With Chart for Five Years' Work. Pp. 62. (London: G. Allen and Unwin, Ltd.) 4*s.* 6*d.* net.

Twenty-five Years in East Africa. By Rev. J. Roscoe. Pp. xvi+288+19 plates. (Cambridge: At the University Press.) 25*s.* net.

Treatise on Fractures in General, Industrial, and Military Practice. By Prof. J. B. Roberts and Dr. J. A. Kelly. Second edition, revised. Pp. x+755. (Philadelphia and London: J. B. Lippincott Co.) 42*s.* net.

Biological Chemistry. By Prof. H. E. Roaf. Pp. xvi+216. (London: Methuen and Co., Ltd.) 10*s.* 6*d.* net.

The Fourth Dimension Simply Explained: A Collection of Essays Selected from those Submitted in the *Scientific American's* Prize Competition. By Dr. H. P. Manning. Pp. 251. (London: Methuen and Co., Ltd.) 7*s.* 6*d.* net.

Geofysiske Publikationer, vol. 1, No. 1. The Position in Space of the Aurora Polaris, from Observations made at the Haldde Observatory, 1913–14. By L. Vegard and O. Krogness. Pp. vii+172+plates. (Kristiania: A. W. Brøggers.)

Annales de l'Observatoire astronomique de Tokyo. Tome 5, 4 fascicule: Studies on Astronomical Timekeepers and Time-preserving Systems. By Kiyofusa Sôtome. Pp. ii+59. (Tokyo: Imperial University.)

New Zealand. Department of Mines: Geological Survey Branch. Palæontological Bulletin, No. 8: Lists of New Zealand Tertiary Mollusca from various Localities Examined and Named from 1913 to the End of 1917. By H. Suter. Pp. vii+107. (Wellington.)

Die Tagebücher von Dr. Emin Pascha. Herausgegeben von Dr. Franz Stuhlmann. Band VI., Zoologische Aufzeichnungen Emin's und seine Briefe an Dr. G. Hartlaub, bearbeitet von Prof. Dr. H. Schubotz. Pp. viii+301. (Hamburg und Braunschweig: G. Westermann.) 200 marks.

The Advancement of Science: 1921. Addresses Delivered at the 89th Annual Meeting of the British Association for the Advancement of Science, Edinburgh, September, 1921. (London: J. Murray; The British Association.) 6*s.* net.

A Short Course in Commercial Arithmetic and Accounts. By A. Risdon Palmer. (Bell's Mathematical Series.) Pp. x+171+xv. (London: G. Bell and Sons, Ltd.) 2*s.* 6*d.*

The Use of Graphs in Commerce and Industry. By A. Risdon Palmer. (Handbooks of Commerce and Finance). Pp. ix+47. (London: G. Bell and Sons, Ltd.) 2*s.* net.

Practical Mathematics. By A. Dakin. Part 1. Pp. viii+362+12+xxiv. (London: G. Bell and Sons, Ltd.) 5*s.*

Index Kewensis Plantarum Phanerogamarum, Supplementum Quintum Nomina et Synonyma Omnium Generum et Specierum ab Initio Anni MDCCCCXI Usque ad Finem Anni MDCCCCXV Nonnulla Etiam Antea Edita Complectens. Ductu et Consilio D. Prain, Confecerunt Herbarii Horti Regii Botanici Kewensis Curatores. Pp. iii+277. (Oxonii: E Prelo Clarendoniano.) 76*s.* net.

Memoirs of the Geological Survey. Summary of Progress of the Geological Survey of Great Britain and the Museum of Practical Geology for 1920. Pp. iv+112. (London: E. Stanford, Ltd.; Southampton: Ordnance Survey Office.) 3*s.* 6*d.* net.

Memoirs of the Geological Survey: Scotland. The Economic Geology of the Central Coalfield of Scotland. Area IX., Carluke, Strathaven, and Larkhall, with Braidwood, Netherburn, Auchenheath, Blackwood, and Stonehouse. By L. W. Hinxman and others. Pp. viii+148. (London: E. Stanford, Ltd.; Southampton: Ordnance Survey Office.) 8*s.* net.

The Continents of the South. By A. B. Archer. (A Secondary School Course in Geography, Book II.) Pp. xvi+272. (London: W. Heinemann.) 4*s.* 6*d.* net.

Soil Conditions and Plant Growth. By Dr. E. J. Russell. (Rothamsted Monographs on Agricultural Science.) 4th edition. Pp. xii+406. (London: Longmans, Green and Co.) 16*s.* net.

The Physical Properties of Colloidal Solutions. By Prof. E. F. Burton. (Monographs on Physics.) 2nd edition. Pp. viii+221. (London: Longmans, Green and Co.) 12*s.* 6*d.* net.

The Transition Spiral and its Introduction to Railway Curves: With Field Exercises in Construction and Alignment. By Arthur L. Higgins. Pp. viii+111. (London: Constable and Co., Ltd.) 6*s.* net.

Diary of Societies.

WEDNESDAY, SEPTEMBER 28.

FARADAY SOCIETY (at Institution of Electrical Engineers), at 4.30.—General Discussion on Catalysis, with Special Reference to Newer Theories of Chemical Action. Part 1, The Radiation Theory of Chemical Action, opened by Prof. J. Perrin. Part 2, Heterogeneous Reactions, opened by Prof. I. Langmuir. Expected speakers:—Prof. Arrhenius, Prof. V. Henri, Prof. E. C. C. Baly, Prof. F. G. Donnan, Prof. W. C. McC. Lewis, Prof. A. Lindemann, Prof. A. W. Porter, and Dr. E. K. Rideal.

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