

LIVERPOOL.—A contribution of 10,000*l.* in support of the University Appeal Fund has been made by the Cunard Steamship Co., Ltd.

The Pacific Steam Navigation Co., Liverpool, has made a contribution of 1000*l.* to the same fund.

THE directors of Messrs. Brunner, Mond, and Co. were authorised at an extraordinary meeting held at Liverpool on August 4 to distribute 100,000*l.* out of the investment surplus reserve account to universities or other scientific institutions in the United Kingdom for the furtherance of scientific education and research. Proposals for the allocation of this grant are under consideration, but no scheme has yet been adopted by the directors.

AN examination for the Aitchison memorial scholarship, of the value of 30*l.*, and tenable in the full-time day courses in technical optics at the Northampton Institute, Clerkenwell, will be held in September next. The scholarship is open to candidates of both sexes between sixteen and nineteen years of age. The compulsory subjects are English and elementary mathematics. The optional subjects, of which only two must be taken, are additional elementary mathematics, physics (heat, light, and sound), chemistry, electricity, and magnetism. Full particulars are given in a leaflet which can be obtained from the hon. secretary and treasurer, Mr. Henry F. Purser, 35 Charles Street, Hatton Garden, London, E.C.1.

News has just reached us that Prof. A. T. De Lury was appointed some months ago to be head of the department of mathematics in the University of Toronto by the Board of Governors on the recommendation of the president of the University, Sir R. A. Falconer. The Staff, Council, and Senate have nothing to do with appointments, and the only check upon the action of the president and the Board of Governors is public opinion. Prof. De Lury has been a member of the teaching staff of the University for many years, and is the author of a number of mathematical text-books which have done service in the schools of the province of Ontario. He possesses high teaching ability, but has not been associated with the research activities which it should be the essential function of a university to create and foster. Without men engaged in the production of new knowledge the work of a university differs little from that of a secondary school preparing students for examinations. Toronto has won much distinction by the scientific investigations of such men as Profs. Macallum, McLennan, and Brodie, and it was hoped that the chair of mathematics would have been filled by someone who possesses the highest research qualifications in mathematics that Canada could produce. If Prof. De Lury can and will build up a strong research staff under him, he will be doing the best service to his University and extend the stimulating atmosphere which some of his scientific colleagues have given to the institution by their work.

AMONG the recent bulletins issued by the U.S. Bureau of Education, Washington, is one (No. 61) entitled "Public Discussion and Information Service of University Extension." It comprises some fifty pages octavo, and deals with the extra-mural activities of the numerous universities and library commissions of the various States. The bulletin submits that university extension should not only offer the opportunity of self-directed study for the great mass of persons who wish to continue systematically their preparation for personal advancement, but should also provide the indispensable connection between scientific knowledge and the everyday practice necessary for sound community development, between the facts

accumulated through research and their application to the practical problems which must be met by individual communities in a democratic society. University education is not merely educational in the limited sense; it attempts to make facts, knowledge, and truth operative in the daily life of the people. The scope of university extension so interpreted includes bureaux of information, lecture schemes—club study and library service—assistance in debates and in other forms of public discussion, together with a novel institution known as the package-library service, by which is meant the compilation by specialists at each university or library centre of information of pamphlets, bulletins, clippings from articles in magazines and other sources on subjects and questions of interest to the public, which are sent on application to individuals or organisations in districts, however remote, within the State. Wisconsin, for example, had in 1918–19 more than 1000 subjects, and the Texas bureau 550, represented in their package-library collections, the contents of each of which are changed from time to time. They cover the whole domain of civic, economic, and State activities. The bulletin gives full particulars of the cost, methods, and organisation of the service, which might with much advantage be introduced into this country. The information bureaux were made much use of, since nearly 180,000 requests for information were received in fourteen States, and in twenty-four States the lectures arranged were attended by upwards of 2,000,000 persons.

Societies and Academies.

PARIS.

Academy of Sciences, July 19.—M. Henri Deslandres in the chair.—F. E. Fournier: The resistance of a fluid to the horizontal translation of a spindle-shaped or spherical body with deep immersion.—A. Haller and Mme. Ramart-Lucas: Bromohydrins and dibromoderivatives obtained from the alkylallylacetophenones,



Compounds of the latter type give bromohydrins on treatment with bromine; under the same conditions methylallylacetophenone gives a stable dibromide, $\text{C}_6\text{H}_5\cdot\text{CO}\cdot\text{CH}(\text{CH}_3)\cdot\text{CH}_2\cdot\text{CHBr}\cdot\text{CH}_2\cdot\text{Br}$.—F. Widal, P. Abrami, and N. Iancovesco: Proof of digestive hæmoclasis in the study of hepatic insufficiency. It has been shown in an earlier communication that for some time after a nitrogenous meal incompletely disintegrated proteids pass into the portal vein from the intestine, and that these substances are prevented from passing into the general circulation by the normal action of the liver. This has now been applied clinically after a meal of 200 grams of milk or of meat and eggs. No symptoms of hæmoclasis are given by healthy subjects or by subjects suffering from various illnesses provided the liver is in a normal condition, but with the liver diseased a similar meal is followed by a hæmoclasic crisis, with alterations in the number of white corpuscles, arterial pressure, coagulability of the blood, and refractometric index of the serum. These symptoms have proved capable of detecting latent disease of the liver when the usual signs are wanting.—E. Ariès: The determination of the last of the three functions which defines the equation of state of ether.—G. Fubini: Automorphic functions.—G. J. Remondos: The modulus and zeroes of analytical functions.—A. Petot: The spherical representation of surfaces and the correspondence by parallel tangent planes.—G. Bruhat: Remarks on the compression of saturated

vapours.—**M. Sauzin**: The propagation of sustained electrical oscillations in water and the dielectric constant of water. Oscillations with wave-lengths in air of 444 cm. and 242 cm. gave 73 as the dielectric constant of distilled water—a little lower than the usually accepted figure, 80.—**C. Zenghelis**: New researches on the action of gases in a very fine state of division. A continuation of experiments described in a previous paper on the same subject. From a mixture of hydrogen and carbon dioxide, formaldehyde and its condensation products were identified. The reduction was favoured by light, especially by the ultra-violet rays.—**J. Cournot**: The annealing of electrolytic iron. The removal of hydrogen from electrolytic iron by annealing can be effected by heating for two hours at 950° C. or one hour at 1050° C. At 850° C. or lower temperatures micrographic study and hardness determinations proved the annealing to be incomplete even after six hours' heating.—**L. Guillet**: Some new researches on special brasses. Studies of brasses containing cobalt, chromium, silver, and gold.—**G. Gire**: The oxidation of arsenious anhydride in alkaline medium in presence of ferrous sulphate.—**G. Denigès**: Iodic acid as a microchemical reagent characteristic of gaseous ammonia. A 10 per cent. solution of iodic acid gives characteristic crystals of ammonium iodate on exposure to gaseous ammonia. As little as 0.1 milligram of ammonia can be detected by this means.—**A. Desgrez** and **J. Meunier**: The incineration of organic matter with the view of determining its mineral constituents; application to blood analysis.—**A. Korczynski**, **W. Mrozinski**, and **W. Vielau**: New catalytic elements for the transformation of diazo-compounds. Salts of cobalt and nickel may replace copper salts in certain applications of Sandmeyer's reaction.—**J. Martinet** and **O. Dornier**: A new indigo colouring matter, 5-[dioxo-2:4-pyrimidine]-2-indolindigo.—**H. Hubert**: New contact phenomena of the diabases in Western French Africa.—**A. de Puymaly**: A new small green alga, *Prasiola leprosa*.—**A. Paillot**: The Cœnocytoïdes and Teracytes.—**A. Dehorne**: Atypical characters in somatic mitosis in *Corethra plumicornis*.—**B. Guérithault**: The presence of copper in plants, and particularly in food of vegetable origin. Copper was present in forty-four materials of vegetable origin (vegetables, seeds, and fruits) in amounts varying between 9 and 63 milligrams per kilogram of dried substance.—**A. Krempf**: The last phases of the development of the endodermic metamerised organs of the larvæ of Anthozoa and the formation of the pharynx.—**E. Chatton**: Palisporogenesis: a mode of reproduction special to certain parasite Flagellæ.—**J. Feytaud**: Young colonies of the luminous Termite.—**A. Ch. Hollande** and **P. Vernier**: *Cocobacillus insectorum*, var. *malacosomae*, a pathogenic bacillus of the blood of the caterpillar, *Malacosoma castrensis*.

PHILADELPHIA.

American Philosophical Society, April 22.—**Prof. W. B. Scott**, president, in the chair.—**Dr. L. M. Haupt**: Beach-protection works.—**Prof. D. W. Johnson**: Geographic aspects of the Adriatic problem.—**A. G. Mayor**: The reefs of Tutuila, Samoa, in their relation to coral-reef theories.—**Prof. H. F. Reid**: Distribution of land and water on the earth. The conception of the land of the earth as being a deeply dissected and loosely joined together mass, with its centre about half-way between the equator and the poles, explains nearly all the characteristics of the distribution of land and water, such as the antipodal relation, the concentration of land about the North Pole and of water about the South Pole,

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etc.—**Prof. E. C. Kendall**: Thyroxin.—**Dr. S. J. Meltzer**: The dualistic conception of the processes of life. The dualistic conception of the life-processes may be presented as follows: Irritability is a characteristic property of all living tissues. Irritability means the property of the tissues to react with a change in each state to a proper stimulus. The change may consist in an excitation—an increase in activity, or an inhibition—a decrease in activity. Each and every state of life of the plain tissues or of the complex functions is a resultant from the combination of the two antagonistic factors, excitation and inhibition.—**Dr. F. G. Blake**: The relation of the *Bacillus influenzae* to influenza. The experiments described establish the etiological relationship of *Bacillus influenzae* to the type of bronchopneumonia with which the organism has been found constantly associated in man. They also prove that *B. influenzae* can initiate an infection of the upper respiratory tract and produce a disease that closely resembles influenza and is associated with the same complications as influenza. They do not prove that *B. influenzae* is the primary cause of influenza, however, since it is impossible to determine whether the disease produced in monkeys by inoculation with *B. influenzae* was actually identical with pandemic influenza.—**Dr. W. E. Dandy**: X-rays of the brain after injection of air into the ventricles of the brain and into the spinal canal.—**Prof. J. D. Prince**: Celt and Slav. Slavs and Celts are strikingly similar to each other in habits of mind and expression, although far removed geographically. The Russians, Poles, Czecho-Slovaks, Serbo-Croatians, and Bulgarians, all speaking Slavonic idioms, although racially very various, have certain marked traits in common which they all share with the Celts, viz. the Irish, Scottish, and Manx Gaels, the Armorican Bretons of France, the Welsh, still Celtic-speaking, and the Cornish, whose Celtic language is now extinct. The similarity between Slavs and Celts is twofold, viz. temperamental discontent and morbid joy in sorrow. As a concomitant of this discontent goes the spirit of quest after the unattainable, which is manifest in both Slavonic and Celtic trends of thought. The sun of common sense has never risen on either the Slav or the Celt, and it is doubtful whether the Slavs can exist very long without the guiding hand of strangers. The charm of the Celt and Slav is great and durable, but it is charm and not character, feeling and sentiment rather than thought and reasoning, which dominate the east and west of Europe alike.—**Prof. R. B. Dixon**: A new theory of Polynesian origins. The question of the racial origins of the Polynesian peoples has long attracted the attention of anthropologists. Previous studies have dealt mainly with small portions of the area, and have not satisfactorily correlated the various factors characterising physical types, or the Polynesian types with those of the rest of Oceania. The present study seeks to secure more satisfactory results by including the whole of Oceania and Eastern Asia in its scope. Following a method differing from those previously employed, a number of fundamental physical types are defined, and their distribution and that of their derivatives traced. One of these fundamental types unexpectedly proves to be Negrito, the other two most important ones being Negroid and Malayoid. The Negrito and Negroid types, being marginal in their distribution, are probably the older.—**Prof. A. V. W. Jackson**: The Zoroastrian doctrine of the freedom of the will. The purpose of this paper was to show the significance of the doctrine of the freedom of the will in the dualistic creed of Zoroaster more than 2500 years ago.—**Prof. M. Jastrow, jun.**: The Hittite civilisation. The Hittites seem to have been composed of a

conglomeration of various ethnic elements, and about 1500 B.C. a strong Hittite empire was located in northern Asia Minor which was powerful enough to threaten both Egypt on one side and Babylonia and Assyria on the other. These Hittites, moving along the historical highway across Asia Minor, left their rock monuments and their fortresses as traces of the power and civilisation which they developed. Their contact with Assyria appears to have been particularly close, and it is not impossible that the earliest rulers were actually Hittites. The "sons of Heth" associated in tradition with Abraham are Hittites, and there were Hittite generals in the army of the Jewish kings.—Prof. M. Bloomfield: The decipherment of the Hittite languages.—Prof. P. Haupt: The beginning of the Fourth Gospel. John i. 1 should be translated: "In the beginning was reason." Greek "logos" denotes both "word" and "reason." Logic is the science of reasoning. According to the Stoics, reason (Greek "logos") was the active principle in the formation of the universe.

Books Received.

Scottish National Antarctic Expedition. Report on the Scientific Results of the Voyage of S.Y. *Scotia* during the Years 1902, 1903, and 1904. By Dr. W. S. Bruce. Vol. vii., Zoology. Parts 1-13, Invertebrates. Pp. viii+323+15 plates. (Edinburgh: Scottish Oceanographical Laboratory.) 50s.

Le Radium. Interprétation et Enseignements de la Radioactivité. By Prof. F. Soddy. Traduit de l'Anglais par A. Lepape. Pp. iii+375. (Paris: Félix Alcan.) 4.90 francs.

Tracks and Tracking: A Book for Boy Scouts, Girl Guides, and Every Lover of Woodcraft. By H. M. Batten. Pp. 95. (London and Edinburgh: W. and R. Chambers.) 2s. net.

Criticism of the Nile Projects. Submitted by the Commission of Egyptian Engineers to the Nile Projects Commission, 1920. Pp. 36. (Cairo.)

Zi-ka-wei Observatory Atlas of the Tracks of 620 Typhoons, 1893-1918. By Louis Froc, S.J. Pp. 4+charts. (Zi-ka-wei.)

Records of the Indian Museum. Vol. xvii., June. Catalogue of Oriental and South Asiatic Nemocera. By E. Brunette. Pp. 300. (Calcutta: Zoological Survey.) 5 rupees.

Records of the Indian Museum. Vol. xx., June. A Monograph of the South Asian, Papuan, Melanesian, and Australian Frogs of the Genus *Rana*. By Dr. G. A. Boulenger. Pp. 226. (Calcutta: Zoological Survey.) 6 rupees.

Western Australia. Astrographic Catalogue, 1900-0. Perth Section, Dec. -31° to -41° . From photographs taken and measured at the Perth Observatory under the direction of H. B. Curlewis. Vol. xvii. Pp. 55. Vol. xviii. Pp. 107. Vol. xix. Pp. 101. Vol. xx. Pp. 99. Vol. xxi. Pp. 54. Vol. xxii. Pp. 105. Vol. xxiii. Pp. 100. Vol. xxiv. Pp. 75. (Perth.)

Transactions of the Royal Society of Edinburgh. Vol. lii., part 4. New Stellar Facts, and their Bearing on Stellar Theories for the Ferns. By Dr. J. M'L. Thompson. (Edinburgh: R. Grant and Son; London: Williams and Norgate.) 5s. 6d.

Monograph of the Nercetidae. By Dr. G. A. Boulenger. Vol. i. Pp. x+352. (London: British Museum (Natural History).) 2l.

Eugenics, Civics, and Ethics. By Sir C. Walston. Pp. 56. (Cambridge: University Press.) 4s. net.

Essays on Early Ornithology and Kindred Subjects. By I. R. McClymont. Pp. vii+35+3 plates. (London: B. Quaritch, Ltd.) 6s.

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The Sugar-Beet in America. By Prof. F. S. Harris. Pp. xviii+342+xxxii plates. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 12s. net.

British Museum (Natural History). Furniture Beetles: Their Life-History and How to Check or Prevent the Damage Caused by the Worm. By Dr. C. J. Gahan. (Economic Series, No. 11.) Pp. 23+1 plate. (London: British Museum (Natural History).) 6d.

British Museum (Natural History). British Antarctic (*Terra Nova*) Expedition, 1910. Natural History Report. Zoology. Vol. ii., No. 9, Mollusca. Part iii., Eupteropoda (Pteropoda Thecosomata and Pterota Pteropoda Gymnosomata). By Anne L. Massy. Pp. 203-32. 7s. 6d. Vol. ii., No. 10, Mollusca. Part iv., Anatomy of Pelecypoda. By R. H. Burne. Pp. 233-56+4 plates. 8s. 6d. Vol. iv., No. 3, Echinoderma (part ii.) and Enteropneusta. Larvæ of Echinoderma and Enteropneusta. By Prof. E. W. MacBride. Pp. 83-94+2 plates. 7s. 6d. (London: British Museum (Natural History).)

The Prevention of Tetanus during the Great War by the Use of Antitetanic Serum. By Maj.-Gen. Sir David Bruce. Pp. 27. (London: Research Defence Society.) 1s.

Der Aufbau der Materie; drei Aufsätze über moderne Atomistik und Elektronentheorie. By Max Born. Pp. v+81. (Berlin: J. Springer.) 8.60 marks.

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