

## Societies and Academies.

## LONDON.

**Zoological Society, June 3.**—Prof. E. W. MacBride, vice-president, in the chair.—Miss Helga S. Pearson: (1) The skull of the Dicynodont reptile *Kannemeyeri*. (2) A Dicynodont reptile reconstructed.—R. I. Pocock: The external characters of the Pangolins (*Manidæ*).—J. P. Hill and E. A. Fraser: Some observations on the female urogenital organs of the Didelphyidæ.—Mary L. Hett: On a new land-Nemertean from New South Wales.—Hem Singh Pruthi: (1) On the post-embryonic development and homology of the male genital organs of *Tenebrio molitor* (Coleoptera). (2) On the development of the ovipositor and the efferent genital ducts in *Tenebrio molitor* (Coleoptera), with remarks on the comparison of the latter organs in the two sexes.—C. F. Sonntag: The comparative anatomy of the tongues of the Mammalia. X. Rodentia; XI. Marsupialia and Monotremata.

**Linnean Society, June 5.**—Dr. A. B. Rendle, president, in the chair.—Théodore Monod: A new type of Crustacea, *Thermosbæna mirabilis*. It has been found at El Hamma (Tunisia) in a spring which supplies with hot water a Roman bath. Its total blindness, absence of pigmentation, and marked negative heliotropism show that it normally inhabits the subterranean waters, and as the heat of the spring is 120° F. the crustaceans can endure at least that temperature. It seems to be a link between the Mysidacea and the Isopoda *sens. auct. vet.* (=Isopoda *sens. str.* + Tanaidacea).—Karel Kruis and Jan Šatava: The life histories of yeasts. By inducing endospore formation and cultivating the fungus from the ascus, "Springer," a Viennese pressed yeast, gave cultures differing from the normal form. The cells were only about half the size and were spherical rather than elliptical; they formed thick, compact, persistent colonies in place of being loose, radiating, and evanescent. The dwarf form retained its characters during several months. The most striking difference between the two forms is that the dwarf form does not form endospores when placed on gypsum blocks. Similar results were obtained with other yeasts; with the wine yeast "Melnik," the endospores either germinate directly and give rise to the dwarf form or else copulate in pairs and produce the normal form. It thus seems that there is an alternation of generations, the normal form being the vegetative stage and the dwarf form the sexual stage. One result is that it seems possible that the numerous "species" of *Torula*, so troublesome, particularly to medical men and to brewers, are really dwarf forms or strains of species of *Saccharomyces*; for example, "Hofbrau" yeast, which is of the typical "Frohberg" type in the normal (vegetative) form, is of the "Saaz" type in the dwarf (sexual) form.—G. Erdtman: Studies in the micropalæontology of post-glacial deposits in Northern Scotland. Pollen grains preserved in the peat were examined. A sample is taken by means of a borer to various depths and the cores obtained are subsampled, boiled with 10 per cent. caustic potash, and the pollen grains counted. Of the pollen identified, that of *Betula* is the most abundant, usually providing 70 per cent. of the total. Next in order come *Pinus* (14.6 per cent.), *Alnus* (11.8 per cent.), *Salix* (11.25 per cent.), *Carpinus* (4.25 per cent.), *Quercus* (2.4 per cent.) and *Ulmus* (1.2 per cent.). Beech, holly, and sycamore are rare. The first appearance of the pollen of *Alnus* probably marks a definite horizon; this may correspond to the level of the first appearance

of alder pollen in Scandinavia. The latter is late Boreal or about 6000 B.C. A striking difference, as compared with Scandinavia, is the total absence of *Picea*. *Carpinus* has only been recorded hitherto from fossil deposits in Great Britain from pre-, late-glacial, and Roman deposits south of the Wash. The presence of *Fagus*, too, in these post-glacial peats of the North of Scotland rather negatives the idea that its present restricted range is the outcome of recent immigration. Pine pollen is always associated with that of birch; probably these two trees were the principal constituents of the post-glacial forests of northern Scotland.—C. C. A. Monro: Polychæta from the *Alert* expeditions. Polychæte worms obtained during the voyage of H.M.S. *Alert* in 1878 have hitherto remained unexamined. Some of the more interesting types were referred to; a species of *Sigalion* shows apparent conversion of the elytra into egg-pouches.

## PARIS.

**Academy of Sciences, June 2.**—M. Guillaume Bigourdan in the chair.—Charles Moureu and Charles Dufraisse: Autoxidation and antioxygen action. The catalytic properties of sulphur and its compounds. Sulphur exerts as powerful an action as hydroquinone in arresting the spontaneous oxidation of benzaldehyde. An abstract of earlier work on the catalytic properties of sulphur and sulphur compounds is given.—H. Deslandres: Record obtained at the Meudon Observatory of the Courtine explosive wave. Second and third explosions. On May 23 the recording microphone registered three trains of waves, at intervals of about one second. The record on May 25, owing to interference by the wind, was not so distinct.—M. Mollard: The effect of the mineral composition of the nutritive medium on the structure of *Sievignatocystis nigra*. An account of the changes produced in the mould by eliminating sulphate and potassium from the culture medium.—M. de Forcrand. The heat of vaporisation of carbon. An empirical modification of Trouton's relation is given; taking 4190° C. absolute as the boiling-point of carbon, this formula gives  $L = 180,253$  for a gram-molecule of carbon.—Charles Robert was elected a member of the division for the applications of science to industry, in succession to the late Maurice Leblanc.—M. Mandelbrojt: Taylor's series capable of extension.—G. Cerf: The transformations of curves of space associated with transformations of contact.—Charles Platrier: The phenomena of torsion studied with the aid of the integral equations of Volterra and Fredholm.—M. Fichter: The variation of the coefficient of sliding friction with the state of the surfaces in contact. Measurements of the coefficient of friction have been made between different metals (iron on iron, brass on brass, steel on brass, and so on), and it has been found in all cases, starting with slightly rough surfaces, that the value of the coefficient of friction diminishes as the smoothness of the surface is increased, up to a certain "critical polish," after which the coefficient increases very rapidly as the surface becomes more perfect. The experiments of Johanson on the adhesion of such highly polished surfaces have been repeated, and an outline of a new theory of sliding friction based on these results is given.—Y. Rocard: The equations of motion of a gas.—J. Pionchon and Mlle. F. Démora: The formation, in the wet way, of layers of cuprous oxide possessing photo-electric properties. Two sheets of copper, placed in a millinormal solution of copper sulphate and exposed to the air, become covered with a thin film of cuprous oxide. The coated plates, standing in the copper sulphate solution, form a photo-electric cell which is very sensitive to

the action of light.—A. Cotton: Remarks on the preceding communication. The recent work of G. Athanasu appears to have anticipated to some extent the results described in the preceding paper.—B. Szilard: A new type of electrometer.—R. Lucas: Piezoelectricity and molecular asymmetry. There do not appear to be any exceptions to the rule that all optically active substances give piezoelectric crystals.—Ernest Esclangon: Zones of silence and their relation with meteorological characters.—Henri George and Edmond Bayle: Spectrophotometric definition of the colours of fluorescence.—Max Morand: New spectra emitted by a neutral atom of lithium.—M. Pauthenier: The isotropic augmentation of the index of liquids in the electric field. Results of experiments are given proving the existence of electrostriction, equivalent to a condensation of the liquid in the uniform electric field. This phenomenon has no relation with double refraction.—Thomas Martin Lowry and Percy Corlett Austin: The origin of the anomalies of the rotatory dispersion of tartaric acid.—P. Lecomte du Nouÿ: The dimensions of the molecules and the molecular weights of the proteins of serum. Assuming that the monomolecular layer corresponds to the minimum surface tension, and that Millikan's Avogadro number is  $N = 6.2 \times 10^{23}$ , the molecular weight of albumen is 36,600 and of the globulins 35,000.—Paul Pascal: The filiation of the polymetaphosphates.—F. Bourion and E. Rouyer: A kinetic anomaly observed in the reduction of mercuric chloride by sodium formate.—Fran. Tucan: The kammmercite of the Jugoslavian chromites.—Ch. Mauguin: The arrangement of the atoms in the crystals of calomel. An account of results obtained by the X-ray method, which support the view that the molecule is  $Hg_2Cl_2$ .—Pierre Bonnet: The existence of the Darian and the lower Eocene in southern Transcaucasia: limit between the Secondary and the Tertiary.—Rene Souèges: Embryogeny of the Rubiaceæ. Development of the embryo in *Sherardia arvensis*.—Charles Richet, jun.: The action of formates on the growth of certain plants cultivated in pots.—Marcel Baudouin: The utilisation of an optical illusion of photographic order for the study of the prehistoric rock sculptures.—Harry Plotz and M. Schoen: Some observations on the changes of the reaction of serums. Horse serum exposed to the air at 37° slowly increases in alkalinity, from initial  $P_{H_2} = 7.25$  to 8.72 after 8 days. In sealed tubes the change is in the opposite direction.—Edouard Chatton and André Lwoff: The evolution of the infusoria of Lamellibranchs: comparative morphology of the Hypocomideæ. The new genera Hypocomina and Hypocomella.

## CAPE TOWN.

Royal Society of South Africa, April 16.—Dr. A. Ogg, president, in the chair.—V. Vermooten: The long bones of the South African Bushman. The whole arm of the Bushman is relatively shorter, and therefore less simian, than the arm of the Negro or European, and it is a degree shorter still in the Bushwoman. The radius, on the other hand, is relatively longer than that of the European, and therefore more simian, but it is not so long as that of the Negro. The tibia is relatively long, and the humerus is relatively short.—C. von Bonde: Note on the Heterosomata of Portuguese East Africa. The collection comprises twenty species belonging to 16 different genera. One species, *Pardachirus marmoratus* (Lacépède), is of particular interest, having been described before only from the Red Sea and Madagascar. It has now been obtained from Delagoa Bay. Two new species, *Samaris delagoensis* and *Cynoglossus hunteri*, are here

described for the first time. In their distribution the Heterosomata of Portuguese East Africa are closely related to those of Natal waters, and some few species recently described from Natal have now been found in this region.

## Official Publications Received.

- Commercial Intelligence Department, India. Agricultural Statistics of India, 1921-22. Vol. 1: Area, Classification of Area, Area under Irrigation, Area under Crops, Live-Stock, Land Revenue Assessment, and Harvest Prices in British India. Pp. ix+99. (Calcutta: Government Printing Office.) 1.2 rupees.
- British Legion: Officers' Benevolent Department. Fourth Annual Reports and Accounts, for the Year ending 31st December, 1923. Pp. 31. (London: 48 Grosvenor Square, W.1.)
- Journal and Proceedings of the Sydney Technical College Chemical Society for 1922. Vol. 1. Pp. 88. (Sydney: Alfred J. Kent.)
- Imperial Department of Agriculture for the West Indies. Report on the Agricultural Department, Tortola, 1921-22 and 1922-23. Pp. iv+30. (Barbados.) 6d.
- Agricultural Census of the Colony and Protectorate of Kenya, 1922. Third Annual Report. Pp. 17+tables and charts. (Nairobi: Department of Agriculture.)
- Bulletin of the National Research Council. Vol. 7, Part 5, No. 41: Transactions of the American Geophysical Union, Fourth Annual Meeting, April 1923, Washington, D.C. Pp. 150. Vol. 8, Part 1, No. 43: Proceedings of the Third Annual Meeting of the Advisory Board on Highway Research, Division of Engineering, National Research Council. Edited by William Kendrick Hatt and E. R. Olbrich. Pp. 162. Washington, D.C.: National Academy of Sciences.) 2 dollars each.
- Public Library, Museum, and Art Gallery of South Australia. Records of the South Australian Museum, Vol. 2, No. 4. Pp. 459-560+plates 23-39. (Adelaide.) 10s. 6d.
- Ministry of Public Works, Egypt: Physical Department. Meteorological Report for the Year 1919. Pp. xiii+138. (Cairo: Government Publications Office.) P.T. 30.
- Conseil Permanent International pour l'Exploration de la Mer. Bulletin statistique des pêches maritimes des Pays du Nord de l'Europe. Vol. 11, pour les années 1919-1920. Rédigé par D'Arcy Wentworth Thompson. Pp. 137. (Copenhagen: A. F. Høst et fils.)
- The North of Scotland College of Agriculture. Guide to Experiments at Craibstone, 1924. Pp. 64. (Aberdeen.)
- Transactions and Proceedings of the Royal Society of South Australia. Vol. 47. Edited by Prof. Walter Howchin; assisted by Arthur M. Lee. Pp. iv+442+36 plates. (Adelaide.) 21s.
- Proceedings of the London Mathematical Society. Second Series. Vol. 22. Pp. 1+512. (London: Francis Hodgson.)
- Proceedings of the Cambridge Philosophical Society. Biological Sciences, Vol. 1, No. 2. Pp. 63-137+5 plates. (Cambridge.) 12s. 6d.
- University of Bristol. Proceedings of the Speleological Society, 1922-1923. Vol. 2, No. 1. Pp. 88+5 plates. (Bristol.) 2s. 6d.

## Diary of Societies.

SATURDAY, JUNE 28.

ROYAL SOCIETY OF MEDICINE (Combined Meeting of Laryngology and Otolaryngology Sections), at 10 A.M.

MONDAY, JUNE 30.

WORLD POWER CONFERENCE (at British Empire Exhibition). (Also on July 1 to 12.)

WEDNESDAY, JULY 2.

ROYAL SOCIETY OF MEDICINE, at 5.—Annual General Meeting.

THURSDAY, JULY 3.

INSTITUTION OF CIVIL ENGINEERS (Joint Meeting with Institution of Mechanical Engineers, Institution of Electrical Engineers, Institution of Naval Architects, Institute of Marine Engineers, North-East Coast Institution of Engineers and Shipbuilders, Institution of Engineers and Shipbuilders in Scotland, Institute of Chemistry of Great Britain and Ireland, Institution of Gas Engineers, British Electrical and Allied Manufacturers' Association, British Engineers' Association, which are co-operating in the work of the Special Committee on Tabulating the Results of Heat-Engine and Boiler Trials), at 5.—Capt. H. Riall Sankey: The General Scope and Objects of the Work of the Committee. (The Paper will be followed by a general discussion on debatable points.)

SATURDAY, JULY 5.

THE INSTITUTION OF MECHANICAL ENGINEERS (Joint Meeting with the Institution of Civil Engineers), at 11.30.—Draft Standard Test Code for Hydraulic Power Plants, drawn up by a Joint Committee of the Institutions of Civil and Mechanical Engineers.

RÖNTGEN SOCIETY AND THE ELECTRO-THERAPEUTICS SECTION OF THE ROYAL SOCIETY OF MEDICINE (Joint Meeting at the Radcliffe Infirmary, Oxford), at 3.30.—Sir Thomas Horder: The Influence of Radiology upon the Criteria of Disease (the Mackenzie Davidson Memorial Lecture).—Prof. S. Russ: Experimental Studies upon the Lethal Dose of X-rays and Radium for Animal Tumours.