

## Societies and Academies.

## LENINGRAD.

Academy of Sciences (*Comptes rendus*, No. 2, 1928).—B. A. Fedorovič: Multi-coloured sandstones of the Crimea. Pliocene deposits in Crimea are partly continental, partly marine in origin, and their fossil fauna presents evidence of considerable fluctuations in the climate of the Pliocene period.—A. Frank-Kamenetzky and N. Waksberg: Hydrochemical investigations of hot springs at Lake Baikal. Three hot springs studied belong to the category of thermal springs. In two of them the temperature of the water is 43-44° C., while in the third it is above 70°. The water is not strongly mineralised, but contains 15-30 per cent of silicic acid.—N. Olenev: Classification and geographical distribution of Ixodoidea. Notes on synonymy, morphology, and distribution of nine species of the genus *Hæmaphysalis*, including two new species. The distribution of *Hyalomma syriacum* is the same as that of its hosts, terrestrial tortoises of the genus *Testudo*. A doubtful species, *Ixodes arenicola* Eichwald 1830, is probably a synonym of *Hyalomma ægyptium* L.—N. M. Kulagin: A contribution to the biology of *Tylenchus scandens* Sehn. The wheat nematodes have been found recently in many localities of Russia, always in galls, and never in grain, as recorded by other authors. More than five thousand young nematodes were reared from one gall. Dried nematodes survived at temperatures up to 88° C., but nematodes in water died at 50°.

*Comptes rendus*, No. 3.—P. Lazarev: The application of Le Chatelier's formula of viscosity to solutions of gelatine. Figures for the viscosity of gelatine obtained by Loeb ("Proteins and the Theory of Colloidal Behaviour." New York, 1922, p. 204) are in good agreement with those given by the Le Chatelier's formula.—P. Lazarev: The importance of the curve of visual adaptation in diagnosing nervous diseases. The interrelationship between normal and weak vision may be calculated by the aid of the formula  $A_0/A = \bar{E}S_0^2/E_1S^2$ , where  $\bar{E}$  and  $E_1$  represent the perceptive ability of the nervous endings,  $S$  and  $S_1$ , the sharpness of vision in the normal and near eye respectively.—S. A. Jakovlev: The connexion of the basin of the Baltic Sea with that of the River Volga during the postglacial period. A study of the geological formations and of levelling data shows that the post-glacial basin corresponding to the Baltic Sea extended eastwards and included Lakes Beloozero, Peipus, Ladoga, Ilmen, and some others; further research may show whether the basin extended right to the Volga.—V. N. Zvetkov: Two new species of gregarines from Gammaridæ from Lake Baikal. Descriptions of *Gregarina acanthogammari* sp.n., from the stomach of *Acanthogammarus godlevskii* var. *victori* Dyb., and of *Gregarina baicalensis* sp.n., from the stomach of *Pallasea brandti* Dyb.—I. D. Kurbatov and L. I. Ignatova: The chemical composition of a yellow active mineral from Ferghana. A yellowish crystalline mineral from Ferghana exhibiting certain activities has been analysed quantitatively and proved to contain 9.74 per cent of  $V_2O_5$  and 28.24 per cent of  $U_3O_8$ ; its formula is  $CaO(UO_3)_2 \cdot V_2O_5 \cdot H_2O$ .

## VIENNA.

Academy of Sciences, May 3.—R. Weiss and W. Knapp: The action of phthalyl chloride on *m*-methoxy-benzoic acid and *m*-cresol-methyl-ether.—E. Späth and H. Bretschneider: The active components of Paracoto bark. Synthesis of protocotin and of methyl-protocotin.—F. Hecht and

E. Körner: The thorium content of Katanga pitch-blende.—E. Körner and F. Hecht: Contributions to the method of chemical analysis of uranium pitch-blendes. Lead was separated electrolytically, thorium by means of sodium subphosphate, uranium by hydroxylamine and chlorhydrate in ammoniacal solution.—A. Smekal: The conductivity of solid silver iodide and copper iodide and the homogenation of mixtures of these two substances. The ions are regarded as sometimes taking part in the crystal lattice, sometimes free and migrating.—O. Sickenberg: A siren from the Leitha chalk of the Burgenland.—K. Singer and O. Deutscherberger: Contributions to the physiological and pathological chemistry of the brain (2). The phosphatides and galactosides of the petrol ether fraction of the normal human brain. The distribution of these substances through the separate sections of the brain is very irregular. The galactoside content is less in the human than in the horse's brain. The nitrogen content of the brain declines rapidly in the foetal but more gradually in the child's brain.—Karl Singer: (3) The phosphatides and galactosides of the petrol ether fraction of the brain in progressive paralysis and in cachexy. The nitrogen content expressed as a percentage of the dry weight was deduced; the nitrogen distribution in the petrol ether fraction showed a reduction of cholin nitrogen to about one third of normal and only traces of galactosid nitrogen.—F. Lieben and G. Ehrlich: The behaviour of aldol in the animal body and in fresh organ pulps. Aldol may be in great part consumed in the organism or built up to glycogen. In organ pulps, aldol is destroyed partly by way of  $\beta$ -oxybutyric acid.—I. Mayr: The germination and early development of the mistletoe, *Loranthus europæus*.—K. Menger: Theory of convexity.—R. Wager: Prefloration formulae.

## WASHINGTON, D.C.

National Academy of Sciences (*Proc.*, Vol. 14, No. 6, June).—Alvin B. Cardwell: The photo-electric and thermionic properties of iron. A narrow strip of electrolytic iron was suspended inside a nickel receiver, the whole being enclosed in a pyrex tube with a quartz window through which radiation from a quartz mercury arc could be admitted. Photo-electric sensitivity increased suddenly and decreased again as outgassing started; afterwards it rose in abrupt steps to a maximum. For outgassed specimens, the variation of sensitivity with temperature is complex, showing changes in the neighbourhoods of transition temperatures; the thermionic curve also shows a change near 910° C.—R. A. Millikan and G. Harvey Cameron: Evidence for the continuous creation of the common elements out of positive and negative electrons. (See NATURE, July 21, p. 111.)—William Duane: The general X-radiation from mercury vapour. Electrons are directed at right angles on to a stream of mercury vapour, and the radiation in the line of motion of the electrons and at right angles to this has been examined photographically and with an ionisation chamber. With a potential less than is required to excite the line spectrum, the ionisation effects show that neither beam is homogeneous, but both are of the same order of intensity per mercury atom. The experimental results for penetration of the radiation are in good accord with calculations based on the inverse square law for the distribution of energy in the spectrum.—A. W. Simon: On the quantity of electricity discharged in a lightning stroke. From the work of Norinder and of Peek, surface and volume charges are calculated. The potential gradient just before

the lightning flash is 6410 volts per cm., and the quantity of electricity discharged in a flash is of the order of 10 coulombs.—Myrl N. Davis: Secondary electrons from cobalt. A cobalt target was placed in the path of a primary beam of electrons, and the secondary electrons went to a cylinder immediately in front of the target. The ratio of secondary to primary current was plotted against accelerating potential for different periods of outgassing and heat treatment, and curves which are considered to be characteristic of cobalt were obtained. Cobalt gives much greater secondary emission than any other metal yet examined.—Carl Barus: Sparks of the induction coil between mucronate electrons. When one of a pair of needle points connected with the secondary of an induction coil is replaced by the tube of an interferometer U-gauge, it is found that there is a tendency to reach a definite electric wind pressure just before nearly linear sparks pass.—Robert E. Burk and David C. Gillespie: The adsorption kinetics for molecules attached at more than one point. If a molecule adsorbed on a surface is linked to more than one atom, desorption may not occur in one stage; doubly attached molecules would come off the surface at the same rate as singly attached molecules only in special circumstances. This may account for 'differential' heats of adsorption, in which it is found that the heat evolution varies during the process of adsorption.—Robert N. Pease and Paul R. Chesebro: Characteristics of homogeneous, exothermic gas reactions. Packing the reaction tube with clean fragments of pyrex glass has a marked inhibitory effect on the oxidation of hydrogen and iso-butane, and on the condensation of acetylene and ethylene. In these reactions, the accumulation of energy in molecules of the product seems to lead to miniature explosion waves (reaction centres), which, as they develop, produce a cumulative effect; the presence of packing limits development, the energy of the reaction centres being absorbed and distributed to the surroundings.—John W. Gowen: On the mechanism of chromosome behaviour in male and female *Drosophila*.—Clyde E. Keeler, Evelyn Sutcliffe, and E. L. Chaffee: Normal and 'rodless' retinae of the house mouse with respect to the electromotive force generated through stimulation by light. Moist thread electrodes were used, one on the cornea and the other in the animal's mouth. Pigmented and albino mice with normal retinae gave potentials very similar to those obtained with frogs, rabbits, human beings, etc., on stimulation with light. 'Rodless' animals (both pigmented and albino) gave no response. Hence, if electrical response is a necessary concomitant of vision, 'rodless' eyes are blind.—G. Y. Rainich: Radiation and relativity (1). An investigation from the special relativity point of view of a particle moving with the velocity of light, following the methods by which a material particle is studied.—Willem J. Luyten: On the absolute magnitudes of the Class *M* stars.—Joel Stebbins and C. M. Huffer: On the constancy of the light of red stars, with forty new variables of this class. 164 *M*-stars have been compared systematically with 165 *K*-stars as standards, using the photo-electric photometer attached to the 15-in. refractor at the Washburn Observatory. The *M*-stars show a tendency to variability with increasing redness, and also with increase of absolute magnitude. The very red stars may thus be termed the younger stars, with an irregular output of radiation; with time the variation probably keeps within definite limits. As these stars contract and grow hotter, they pass over to the steady *M*-state, and then on to the yellow class, *K*.—Franz Boas: Family traits as determined by heredity and environment.

Observations of Central European immigrants to the United States show that head form and other traits are subject to environmental influences. A method is developed by which the non-hereditary elements may be distinguished from the hereditary elements.

## Official Publications Received.

### BRITISH.

- Proceedings of the Royal Society of Edinburgh, Session 1927-1928. Vol. 48, Part 2, No. 10: The Law of Blackening of the Photographic Plate at Low Densities. (Third Paper.) By Dr. E. A. Baker. Pp. 106-133. 1s. 6d. Vol. 48, Part 2, No. 11: Salmon (*Salmo salar*) of the River Moisie (Eastern Canada) 1926 and 1927. By P. R. C. Macfarlane. Pp. 134-139. 1s. Vol. 48, Part 2, No. 12: An Analysis of Preferential Voting. By D. M. Y. Somerville. Pp. 140-160. 2s. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.)
- Royal Observatory, Greenwich. Declinations of Stars derived from Observations of Transits in the Prime Vertical with the Altazimuth in the Years 1923-26, under the Direction of Sir Frank Dyson. Pp. v+64. (London: H.M. Stationery Office.) 7s. net.
- Newport Public Libraries, Museum and Art Gallery. Fifty-eighth Annual Report and Balance Sheet for 1927-28. Pp. 14. (Newport, Mon.)
- Indian Central Cotton Committee: Technological Laboratory. Bulletin No. 13, Technological Series No. 8: Research in Cotton Technology in India, 1927. By A. James Turner. Pp. iii+36. 1 rupee. Bulletin No. 14, Technological Series No. 9: The Effect of Different Spindle Speeds on the Results of Spinning Tests. By A. James Turner. Pp. ii+22. 1 rupee. (Bombay.)
- (University of London): County Councils of Kent and Surrey. The Journal of the South-Eastern Agricultural College, Wye, Kent. No. 25. Edited for the College by Dr. S. Graham Brade-Birks. Pp. 251. (Wye.) 8s. 6d.; Residents in Kent and Surrey, 4s. 6d.
- Empire Marketing Board. May 1927 to May 1928. (E.M.B. 9.) Pp. 64. (London: H.M. Stationery Office.) 1s. net.
- Air Ministry. Aeronautical Research Committee: Reports and Memoranda. No. 1138 (Ae. 303): Full Scale and Model Measurements of the Lift and Drag of the Bristol Fighter with M.2 Section Wings. By E. T. Jones and A. S. Hartshorn. (T. 2554.) Pp. 8+8 plates. 6d. net. No. 1142: Report of the Symbols Committee. (T. 2521 and A.) Pp. 4. 3d. net. (London: H.M. Stationery Office.)
- The Journal of the Institution of Electrical Engineers. Edited by P. F. Rowell. Vol. 66, No. 379, July. Pp. 669-804+xxxii. (London: E. and F. N. Spon, Ltd.) 10s. 6d.
- Biological Reviews and Biological Proceedings of the Cambridge Philosophical Society. Edited by H. Munro Fox. Vol. 3, No. 3, July. Pp. 179-269. (Cambridge: At the University Press.) 12s. 6d. net.

### FOREIGN.

- Proceedings of the California Academy of Sciences, Fourth Series. Vol. 17, No. 1: Notes on Lower Tertiary Deposits of Colombia and their Molluscan and Foraminiferal Fauna. By F. M. Anderson. Pp. 29 (1 plate). Vol. 17, No. 2: New Mycetophilidae taken in California and Alaska. By M. C. van Duzee. Pp. 31-65. Vol. 17, No. 3: A Key to the Species of Eucalyptus grown in California. By Eric Walther. Pp. 67-87. Vol. 17, Nos. 4 and 5: Tertiary and Pleistocene Mollusca from the Galapagos Islands, by William Healey Dall and Washington Henry Ochsner; Landshells of the Galapagos Islands, by William Healey Dall and Washington Henry Ochsner. Pp. 89-139 (plates 2-7)+141-165 (plates 8-9). Vol. 17, No. 6: West American Mollusca of the Genus Phasianella. By A. M. Strong. Pp. 187-203 (Plate 10). (San Francisco, Calif.)
- American History in terms of Human Migration. Extracts from Hearings before the Committee on Immigration and Naturalisation, House of Representatives, Seventeenth Congress, First Session, March 7, 1928. Statement of Dr. Harry H. Laughlin. With Three Appendices. Part of Hearing No. 70.1.5. Pp. iii+21. (Washington, D.C.: Government Printing Office.)
- New York Zoological Society. Report of the Director of the Aquarium. Pp. 23. (New York City.)
- United States Department of Agriculture. Miscellaneous Circular No. 46: A Bibliography of the European Corn Borer (*Pyrausta nubilalis* Hbn.). By J. S. Wade. Pp. 35. (Washington, D.C.: Government Printing Office.) 10 cents.
- Field Museum of Natural History. Report Series, Vol. 7, No. 2: Annual Report of the Director to the Board of Trustees for the Year 1927. (Publication 248.) Pp. 175-376+plates 21-41. Anthropology Leaflet No. 27: The Giraffe in History and Art. By Berthold Laufer. Pp. 100+9 plates. 75 cents. (Chicago, Ill.)
- Department of the Interior: U.S. Geological Survey. Bulletin 788-E: Topographic Instructions of the United States Geological Survey. E: Topographic Mapping. By W. M. Beaman. Pp. vi+161-378+vi+plates 8-23. 50 cents. Water-Supply Paper 579: Power Capacity and Production in the United States. Papers by C. R. Daugherty, A. H. Horton and R. W. Davenport. Pp. ii+210+4 plates. 30 cents. Water-Supply Paper 596-H: Notes on Practical Water Analysis. By W. D. Collins. (Contributions to the Hydrology of the United States, 1927.) Pp. ii+235-266+plate 14. 10 cents. Professional Paper 150-D: Sedimentary Rocks of the San Rafael Swell and some Adjacent Areas in Eastern Utah. By James Gilluly and John B. Reeside, Jr. (Shorter Contributions to General Geology, 1927.) Pp. ii+61-110+plates 15-21. 25 cents. Professional Paper 150-E: The Pocono Fauna of the Broad Top Coal Field, Pennsylvania. By George H. Girty. (Shorter Contributions to General Geology, 1927.) Pp. ii+111-127+plates 22-23. 10 cents. Professional Paper 150-F: Notes on Pleistocene Faunas from Maryland and Virginia and Pliocene and Pleistocene Faunas from North Carolina. By Wendell C. Mansfield. (Shorter Contributions to General Geology, 1927.) Pp. ii+129-140+plates 24-25. (Washington, D.C.: Government Printing Office.)