

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. 1133 (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+iii+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.)