

present day.—William H. Gates: Linkage of short ear and density in the house mouse. Linkage appears to be complete.—Willard J. Fisher: Note on corrections to H. A. Newton's "1850 dates" of meteor showers.—Carl Barus: Reciprocating acoustic vibration on opposite sides of the pinhole, in long quill tubes.—Walter A. MacNair and A. Ellett: Explanation of the incomplete polarisation of mercury resonance radiation.—E. C. Watson: The space-distribution of the photo-electrons ejected by X-rays. Using unpolarised X-rays, the distribution of electrons about the direction of the X-ray beam has a maximum a little forward of perpendicular to the X-ray beam and falls to zero at about 90° on each side of the maximum; it is asymmetrical, particularly with high frequency X-rays. Using polarised X-rays, the distribution has a maximum in the direction of the electric vector and does not fall to zero at 90° from this direction; it is symmetrical, but the maximum is less than in the former case. The theory of nuclear scattering explains these effects.—Earl E. Libman: Surface tension of molten metals. (1) Copper. The method used is to measure the depression of surface caused by a vertical plate and a vertical tube which are not wetted by the liquid. Copper is melted in a high vacuum molybdenum wound furnace in a crucible with lid combining a plate and a tube. An X-ray photograph is taken through the entire furnace and the levels of the liquid measured on the photograph. The 'capillary constant' ($2 \times$ surface tension/density $\times g$) for copper in contact with its vapour varies from 0.308 ± 0.0017 at 1083° to 0.297 ± 0.0017 at 1318° . The effect of impurities increases with rise of temperature.—A. Keith Brewer: The relation between temperature and work function in thermionic emission. Gas molecules approaching a surface are dissociated into ions by forces regarded as composed of an electrostatic image force, which has the same effect on both ions, and an intrinsic force, which holds one ion more firmly than the other. These forces are opposed by the kinetic energy of agitation. Hence as the temperature rises, the more lightly held ion escapes first. For pure metal surfaces, positive ions escape first; for oxidised surfaces, the negative ions are released first.—F. A. Saunders: On the spectrum of argon in the extreme ultra-violet.—P. R. Heyl: A redetermination of the Newtonian constant of gravitation (see NATURE, Oct. 8, p. 529).—Jesse Douglas: Contact transformations of three-space which convert a system of paths into a system of paths.—M. S. Knebelman: Motion and collineations in general space.—G. A. Miller: Felix Klein and the history of modern mathematics.—S. Lefschetz: The residual set of a complex on a manifold and related questions.—Gilbert N. Lewis and Joseph F. Mayer: A disproof of the radiation theory of chemical activation. Pinene was passed at very low pressure through a quartz tube heated by platinum spirals to about 1000° K. At the pressure used there was negligible screening of one molecule by another and a negligible number of collisions because the mean free path was longer than the gas stream. Under these conditions, energy sufficient for about 10 per cent. racemisation is available but no racemisation was detected.—James H. Hibben: Radiation and collision in gaseous chemical reactions. Nitrous oxide and ozone were submitted to infra-red radiation at different pressures; no increase of reaction velocity was observed. The bimolecular decomposition of nitrous oxide at low pressure is entirely heterogeneous. There is no change in the reaction rate of the unimolecular decomposition of nitrogen pentoxide at pressures of $0.2-0.002$ mm. of mercury.—H. L. Shapiro: Note on a correction formula for artificially deformed crania.

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Official Publications Received.

BRITISH.

- Publications of the Dominion Astrophysical Observatory, Victoria. Vol. 3, No. 18: The Orbits of Two Spectroscopic Binaries. By S. N. Hill. Pp. 849-866. Vol. 4, No. 1: Three Peculiar Spectra. By J. S. Plaskett. Pp. 26-48 plates. Vol. 4, No. 2: Three Long-Period Spectroscopic Binary Stars. By Reynold K. Young. Pp. 27-38. (Ottawa: F. A. Acland.)
- Report of the Government Chemist upon the Work of the Government Laboratory for the Year ending 31st March 1927. Pp. 42. (London: H. M. Stationery Office.) 1s. 3d. net.
- Journal of the Manchester Egyptian and Oriental Society. No. 13. Pp. 67. (Manchester: At the University Press; London: Longmans, Green and Co., Ltd.) 7s. 6d.
- Journal of the Chemical Society: containing Papers communicated to the Society. September. Pp. x+vi+2023-2388. (London: Gurney and Jackson.)
- Animal Breeding Research Department, The University, Edinburgh. Report of the Director for the Year April 1st 1926 to March 31st 1927 (being the 7th Annual Report). Pp. 40. (Edinburgh.)
- The Half-Yearly Journal of the Mysore University. Vol. 1, No. 2, July. Pp. 98-196. (Bangalore: Bangalore Press.) 2 rupees.
- Transactions of the Royal Society of Edinburgh. Vol. 55, Part 2, No. 18: Jurassic and Eocene Echinoidea from Somaliland. By Dr. Ethel D. Currie. Pp. 411-441+1 plate. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.) 4s.
- Agricultural Research Institute, Pusa. Bulletin No. 166: Sampling for Rice Yield in Bihar and Orissa. By J. A. Hubback. Pp. 23. 7 annas; 8d. Bulletin No. 167: A Scheme of Classification of the Varieties of Rice found in Burma. By R. A. Beale. Pp. 14+4 plates. 6 annas; 8d. (Calcutta: Government of India Central Publication Branch.)
- Gramophone Records of the Languages and Dialects of the Madras Presidency: Text of Passages. Pp. vi+124. (Madras: Government Press.) 14 rupees.
- The Edinburgh and East of Scotland College of Agriculture. Calendar for 1927-1928. Pp. 96. (Edinburgh.)
- Union of South Africa. Department of Mines and Industries: Geological Survey. The Geology of the North-Eastern Part of the Springbok Flats and surrounding Country. An Explanation of Sheet 17 (Springbok Flats). By Dr. Percy A. Wagner. Pp. 104. 2s. 6d. Sheet 17: Springbok Flats. 2s. 6d. (Pretoria: Government Printing and Stationery Office.)

FOREIGN.

- Department of the Interior: U.S. Geological Survey. Bulletin 792-A: Mineral Industry of Alaska in 1925 and Administrative Report. By Fred H. Moffit. (Mineral Resources of Alaska, 1925-A.) Pp. ii+49+xiii. Bulletin 792-B: Geology of the Knik-Matanuska District, Alaska. By Kenneth K. Landes. (Mineral Resources of Alaska, 1925-B.) Pp. ii+51-72+1 plate. Bulletin 795-A: Manganese-bearing Deposits near Lake Crescent and Humptulips, Washington. By J. T. Pardee. (Contributions to Economic Geology, 1927, Part 1.) Pp. ii+24+2 plates. 10 cents. Bulletin 795-B: Potash Brines in the Great Salt Lake Desert, Utah. By Thomas B. Nolan. (Contributions to Economic Geology, 1927, Part 1.) Pp. ii+25-44+1 plate. 10 cents. Bulletin 795-C: Organic Precipitation of Metallic Copper. By T. S. Lovering. (Contributions to Economic Geology, 1927, Part 1.) Pp. ii+45-52. 5 cents. (Washington, D.C.: Government Printing Office.)
- Department of the Interior: U.S. Geological Survey. Professional Paper 148: Geology and Ore Deposits of the Leadville Mining District, Colorado. By S. F. Emmons, J. D. Irving and G. F. Loughlin. Pp. xvii+368+70 plates. (Washington, D.C.: Government Printing Office.) 2.50 dollars.
- Smithsonian Institution: United States National Museum. Bulletin 140: Bird Parasites of the Nematode Suborders Strongylata, Ascariata and Spirurata. By Eloise B. Craun. Pp. xvii+465. (Washington, D.C.: Government Printing Office.) 85 cents.
- Smithsonian Miscellaneous Collections. Vol. 80, No. 3: Fossil Footprints from the Grand Canyon. By Charles M. Gilmore. Second Contribution. (Publication 2917.) Pp. ii+78+21 plates. (Washington, D.C.: Smithsonian Institution.)
- Mededeelingen van het Geologisch Instituut der Landbouwhoogeschool, Wageningen (Holland). No. 10: Bijdrage tot de kennis van Pseudo-Gaylussiet. Door Prof. J. van Baren. Pp. 25+8 afb. (Wageningen: H. Veenman en Zonen.)
- Reprint and Circular Series of the National Research Council. No. 78: Fifth Report of the Committee on Contact Catalysis. By E. Emmet Reid, in collaboration with other Members of the Committee. Pp. 31. 50 cents. No. 79: Third Census of Graduate Research Students in Chemistry. By Clarence J. West and Callie Hull. Pp. 3. (Washington, D.C.: National Academy of Sciences.)

Diary of Societies.

SATURDAY, OCTOBER 15.

- NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS (at Newcastle-upon-Tyne), at 2.30.—M. Ford: Presidential Inaugural Address.—H. T. Foster: Notes on an Inrush of Water at the Montagu Colliery, Scotswood, Northumberland, on March 5th, 1925.—The following paper will be open for further discussion:—The Dry Cleaning of Coal, by J. S. Carson.
- PHYSIOLOGICAL SOCIETY (in Physiological Laboratory, Guy's Hospital Medical School), at 3.30.—L. F. Hewitt and H. Florey: Effect of Drugs on Protein Content of Cerebro-Spinal Fluid of Rabbits.—H. Florey and H. M. Marvin: The Blood Pressure Reflexes of the Rabbit under Urethane Anaesthesia.—R. S. Aitken and A. E. Clark-Kennedy: The Concentration of CO₂ in Successive Portions of an Expired Breath.—Dr. J. H. Burn and H. W. Ling: The Effect of Pituitary Extract,