

band belonging to the first positive group of nitrogen.—Ernest Merritt and William E. Bostwick: A visual method of observing the influence of atmospheric conditions on radio reception. Partial separation of the effects of the direct and the 'reflected' waves is achieved by using two balanced receivers, one with its plane vertical and directed towards the sending station, and the other in the vertical plane and at right angles to this direction. The coils are coupled with a local oscillator and made to actuate a cathode ray oscilloscope. The vertical and horizontal movements of the oscilloscope spot correspond in amplitude and phase with the oscillations received by the two coils.—Francis D. Murnaghan: On the energy of deformation of an elastic solid.—Raymond R. Willoughby: The survival of intelligence.

Official Publications Received.

BRITISH.

Royal Society of Arts, John Street, Adelphi, London, W.C.2. Cantor Lectures on Fatigue Phenomena, with Special Reference to Single Crystals: delivered before the Royal Society of Arts during February 1928. By Dr. Herbert John Gough. Pp. 108. (London.) 3s.

Indian Journal of Physics, Vol. 3, Part 2; and Proceedings of the Indian Association for the Cultivation of Science, Vol. 12, Part 2.—Conducted by Prof. C. V. Raman. Pp. 151-305. (Calcutta.) 3 rupees; 4s.

Annals of the Mededelingen van het Transvaal Museum. Vol. 12, Part 4, December 29. Pp. 289-382. (Cambridge: Printed at the University Press.)

Canterbury College (University of New Zealand.) Records of the Canterbury Museum. Vol. 3, No. 3. Pp. 151-229+plates 24-37. (Christchurch, N.Z.)

Journal of the Indian Institute of Science. Vol. 11A, Part 12: A Bio-chemical Study of some Soil Fungi with Special Reference to Ammonia Production. By A. K. Thakur and Roland V. Norris. Pp. 141-160. 1 rupee. Vol. 11A, Part 13: The Atomic Weight of Antimony from different Sources. By K. R. Krishnaswami. Pp. 161-172. 1 rupee. (Bangalore.)

Proceedings of the University of Durham Philosophical Society. Vol. 8, Part 1, 1927-1928. Pp. iv+69+xi. (Durham.) 5s.

Catalogue of the Nineteenth Annual Exhibition of Electrical, Optical and other Physical Apparatus, January 8, 9 and 10, 1929. Pp. 142+xxvi. (London: Imperial College of Science.)

Transactions of the Mining and Geological Institute of India. Vol. 23, Part 1, November. Pp. 90+vi. (Calcutta.) To Members, 2.8 rupees; to non-Members, 4 rupees.

Transactions of the Norfolk and Norwich Naturalists' Society. Presented to Members for 1927-28. Vol. 12, Part 4. Pp. xvi+383-526. (Norwich.) 10s.

University College of Wales, Aberystwyth: Welsh Plant Breeding Station. The Effect of Nitrate of Soda on the Yield and Chemical Composition of a simple Seeds Mixture in the First Harvest Year. By T. W. Fagan, W. E. J. Milton and Dr. A. L. Provan. (Series H, No. 9, Seasons 1926-1927.) Pp. 27+10 Tables. (Aberystwyth.) 3s. 6d.

Proceedings of the Liverpool Geological Society. Session the Sixty-ninth, 1927-1928. Edited by C. B. Travis. Part 1, Vol. 15. Pp. xvi+109. (Liverpool.)

The Bulletin of the Hill Museum: a Magazine of Lepidopterozoology. Issued at the Hill Museum, Wormley, Witley, Surrey. Vol. 2, No. 1, February 8th. Pp. 100+1 plate. 15s. Vol. 2, No. 2, June 18th. Pp. 101-182+22+4 plates. 15s. Vol. 2, No. 3, November 17th. Pp. 183-270+23-44+3 plates. 15s. Vol. 2, No. 4, Index. Pp. 271-296+VII. (London: John Bale, Sons and Danielsson, Ltd.)

The Ramblers' Federation Handbook: being the Official Year-Book of the Ramblers' Federation (Manchester and District) for 1929. Pp. 80+9 plates. (Manchester.) 1s. net.

Transactions of the Optical Society. Vol. 29, No. 5, 1927-28. Pp. 197-260+XV. (London.) 10s.

Torquay Natural History Society. Transactions and Proceedings for the Year 1927-8. Vol. 5, Part 2. Pp. 81-174. (Torquay.)

The Marine Biological Station at Port Erin: being the Forty-second Annual Report of the former Liverpool Marine Biology Committee, now the Oceanography Department of the University of Liverpool. Drawn up by Prof. Jas. Johnstone. Pp. 30. (Liverpool.) 1s. 6d. net.

Proceedings of the Royal Society of Victoria. Vol. 41 (New Series), Part 1. Pp. iv+62+11 plates. (Melbourne.)

Board of Trade. Second Report of National Fuel and Power Committee. (Cmd. 3252.) Pp. 46. (London: H.M. Stationery Office.) 9d. net.

The Oxford Preservation Trust. Second Annual Report, 1927-1928. Pp. 26. (London.)

FOREIGN.

University of Illinois Engineering Experiment Station. Bulletin No. 187: The Surface Tension of Molten Metals. Part 2: A Determination of the Capillary Constant of Silver. By Earl E. Libman. Pp. 22. (Urbana, Ill.) 15 cents.

Société des Nations: Institut international de Coopération intellectuelle. Bulletin des relations scientifiques. 3^e année, No. 4, décembre. Pp. iv+167-224. 8 francs. Index pour les années 1926 et 1927 (Nos. 1-6). Pp. 28. Index pour l'année 1928 (Nos. 7-10). Pp. 18. (Paris: Les Presses universitaires de France.)

The China Foundation for the Promotion of Education and Culture: Social Research Department. Second Annual Report. Pp. 8. (Peiping.)

Proceedings of the Imperial Academy. Vol. 4, No. 9, November. Pp. xxxi-xxxii+513-568. (Tokyo.)

China Foundation for the Promotion of Education and Culture. Factory Workers in Tangku. By Sung-Ho Lin. Pp. xi+128+8 plates. (Peiping.) 1 dollar.

The Carnegie Foundation for the Advancement of Teaching. Bulletin No. 22: A Retirement Plan for Colorado Public Schools: a Study made at the Request of the Colorado Education Association and the State Department of Public Instruction. By Howard J. Savage and Edmund S. Gogswell. Pp. x+72. (New York City.)

Ministry of Agriculture, Egypt: Technical and Scientific Service. Bulletin No. 81: Seasonal Variation in Salinity of Nile Water in the Aswan Reservoir and at Rodah (Giza). By I. Aladim. Pp. 14+5 plates. (Cairo: Government Publications Office.) 5 P.T.

Department of the Interior: U.S. Geological Survey. Bulletin 806-A: The Pumpkin Buttes Coal Field, Wyoming. By C. H. Wedgemann, R. W. Howell and C. E. Dobbin. (Contributions to Economic Geology, 1928, Part 2.) Pp. ii+14+5 plates. 10 cents. Water-Supply Paper 531: Surface Water Supply of the United States, 1924. Part 11: Pacific Slope Basins in California. Pp. viii+448. 50 cents. (Washington, D.C.: Government Printing Office.)

Smithsonian Miscellaneous Collections. Vol. 81, No. 3: Morphology and Evolution of the Insect Head and its Appendages. By R. E. Snodgrass. (Publication 2971.) Pp. 158. Vol. 81, No. 6: A Study of Body Radiation. By L. B. Aldrich. (Publication 2980.) Pp. 54. (Washington, D.C.: Smithsonian Institution.)

Actes de la Société Helvétique des Sciences naturelles, 100^e Session annuelle du 30 août au 2^e septembre 1928 à Lausanne. Pp. 133+295+54. (Aarau: H.-R. Sauerländer et Cie.)

Conseil Permanent International pour l'Exploration de la Mer: Rapports et Procès-verbaux des Réunions. Vol. 52: Report of the Committee appointed by the Council to consider the Question of the Closure of the Moray Firth to Trawling. Pp. xviii+238. (Copenhagen: Andr. Fred. Høst et fils.)

CATALOGUES.

Bulletin des publications nouvelles. 3^e trimestre 1928. Pp. 32. (Paris: Gauthier-Villars et Cie.)

Notes on Books. No. 254, January, Vol. 13. Pp. 99-126. (London: Longmans, Green and Co., Ltd.)

Watsons' Microscope Record. No. 16, January. Pp. 32. (London: W. Watson and Sons, Ltd.)

Old and Modern Books: English Literature, Australasia, Canada, Ireland. (No. 24.) Pp. 54. (Newcastle-upon-Tyne: William H. Robinson.)

Catalogue of Accessories for the Petrological Microscope and Mineralogical and Crystallographic Apparatus. (Petra 29.) Pp. 20. (London: James Swift and Son, Ltd.)

Catalogue of Science and Technology, No. 3: Annotated and Classified List of Rare and Standard Works on Exact and Applied Science. Part 9, including 13: Engineering (Section 1). Pp. 929-1016. (London: Henry Sotheran and Co.)

Vitamin Therapy: a Concise Résumé of our Present-day Knowledge done in a form suitable for the busy Practitioner. Pp. 16. (London: The British Drug Houses, Ltd.)

A Catalogue of Books published by the Syndics of the Cambridge University Press. Pp. xv+292. (London: Cambridge University Press.)

The "Salex" Book of Lens Bargains. Pp. 48. (London: The City Sale and Exchange, Ltd.)

Taylor's Bee Supplies, 1929. Pp. 44. (Welwyn, Herts.: E. H. Taylor, Ltd.)

Captain James Cook, 1728-1928. Pp. 16. (London: Francis Edwards, Ltd.)

Diary of Societies.

FRIDAY, FEBRUARY 22.

IMPERIAL COLLEGE CHEMICAL SOCIETY (in Main Chemistry Lecture Theatre, Royal College of Science), at 5.—Dr. F. A. Freeth: The Qualifications of an Industrial Chemist.

ROYAL SOCIETY OF MEDICINE (Disease in Children Section), at 5.—Dr. G. Slot: A Clinical Method of Estimating Cardiac Efficiency in Children, and the Work of a Rheumatism Supervisory Centre.

PHYSICAL SOCIETY (at Imperial College of Science), at 5.—L. F. Stanley: The Construction and Calibration of a Sensitive Form of Pirani Gauge for the Measurement of High Vacua.—Prof. C. H. Lees: The Free Periods of a Composite Elastic Column or Composite Stretched Wire.—Dr. A. Ferguson and J. A. Hakes: A Capillary Tube Method for the Simultaneous Determination of Surface Tension and of Density.—Demonstration of a Standard Electrostatic Voltmeter and Wattmeter, used for Measurements of Alternating Currents at Power Frequencies at the National Physical Laboratory, by Dr. E. H. Rayner.

INSTITUTION OF ENGINEERING INSPECTION (at Royal Society of Arts), at 5.30.—A. S. Grunspan: Specification Notes and Good Practice relating to Concrete and Reinforced Concrete Work.

NORTH-EAST COAST INSTITUTION OF ENGINEERS AND SHIPBUILDERS (in Mining Institute, Newcastle-upon-Tyne), at 6.—Dr. G. W. Todd: The Relations between the Properties of Engineering Materials and their Ultimate Structures.

INSTITUTION OF ELECTRICAL ENGINEERS (London Students' Section) (jointly with Institutions of Civil and Mechanical Engineers), at 6.15.—W. Ford: Standardisation.

ROYAL AERONAUTICAL SOCIETY (Students' Section), at 6.30.—L. T. Brown: The Napier Lion Engine.

INSTITUTION OF LOCOMOTIVE ENGINEERS (North-Eastern Centre) (at Hotel Metropole, Leeds), at 7.—G. H. Taylor: Reduction of Weight in Rolling Stock.

MANCHESTER LITERARY AND PHILOSOPHICAL SOCIETY (Chemical Section), at 7.—F. H. Terleski and others: Discussion on The Manufacture of Toilet Soap and Glycerin.

INSTITUTION OF MECHANICAL ENGINEERS (Informal Meeting), at 7.—G. Baker: Electrical Precipitation.