

were made also on heavy corpuscular rays, the liberation of which by ultra-radiation appears established; these have ranges of 0.6 cm. to at least 5.5 cm., calculated to 15° C. and 760 mm. pressure, but their nature and the mode of their formation remain unknown. FRIEDRICH LAUSCHER: Thermal radiation and restriction of horizon. Radiation of basins, valleys and lanes. (1) A general method for deducing the radiation from any surfaces.

Forthcoming Events

[Meetings marked with an asterisk are open to the public.]

Saturday, December 15

BRITISH PSYCHOLOGICAL SOCIETY, at 3. Annual General Meeting.

Sunday, December 16

BRITISH MUSEUM (NATURAL HISTORY), at 3 and 4.30.—M. A. Phillips: "Fossil Mammals".*

Monday, December 17

BRITISH MUSEUM (NATURAL HISTORY), at 11.30.—Dr. W. T. Calman: "The Shipworm".*

ROYAL GEOGRAPHICAL SOCIETY, at 5.—Discussion on "Population Maps" to be opened by Prof. C. B. Fawcett.

Tuesday, December 18

EUGENICS SOCIETY, at 5.15—(at the Linnean Society, Burlington House, W.1).—Dr. Shepherd Dawson: "Disease and Intelligence".

Wednesday, December 19

BRITISH SCIENCE GUILD, at 5 (at the Royal Society of Arts, John Street, Adelphi, London, W.C.2). Col. M. O'Gorman: "Bringing Science into the Road Traffic Problem".

Official Publications Received

GREAT BRITAIN AND IRELAND

Department of Scientific and Industrial Research. Industrial Research Exhibit: a Guide to Stands 6 to 34, Cardiff Engineering Exhibition, 1934, under the auspices of the South Wales Institute of Engineers. Pp. 20. (London: Department of Scientific and Industrial Research.)

Proceedings of the Third International Locust Conference, London, September 18, 1934. (Cmd. 4725.) Pp. 184. (London: H.M. Stationery Office.) 3s. 6d. net.

Year Book of the University Catholic Societies Federation of Great Britain, 1934-1935. Pp. 96. (Glasgow: Hon. Secretary, 13 Fortrose Street.) 1s.

Rothamsted Experimental Station, Harpenden: Lawes Agricultural Trust. Report for 1933. Pp. 200. (Harpenden: Rothamsted Experimental Station.) 2s. 6d.

Natural Science and Archaeology Society, Littlehampton. Reports of Proceedings, 1933. Pp. 22. (Littlehampton.)

Department of Scientific and Industrial Research. Report of the Fuel Research Board for the Year ended 31st March 1934; with Report of the Director of Fuel Research. Pp. vii+178. (London: H.M. Stationery Office.) 3s. net.

University of Durham. Abstracts of Theses for Doctorates presented by Candidates who have received the Degrees in Convocation during the Academic Year 1933-1934. Pp. 12. (Durham.)

Transactions of the Royal Society of Edinburgh. Vol. 58, Part 1, No. 11: The Early Stages in the Development of the Ferret; Fertilisation to the Formation of the Prochordal Plate. By Dr. William J. Hamilton. Pp. 251-278+7 plates. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.) 6s.

The Royal Technical College, Glasgow. Annual Report on the One Hundred and Thirty-eighth Session adopted at the Annual Meeting of Governors held on the 16th October 1934. Pp. 84. (Glasgow.)

The North of Scotland College of Agriculture. Report on the Work of the North of Scotland College for the Year 1933-34. Pp. 36. (Aberdeen.)

A Review of the Experimental Working of the Five Days Week by Boots Pure Drug Company at Nottingham. By Sir Richard A. S. Redmayne. Pp. 70. (Nottingham: Boots Pure Drug Co., Ltd.) 1s.

The Scientific Proceedings of the Royal Dublin Society. Vol. 21 (N.S.), No. 13: The Measurement of the Current generated by Rectifier Photo-Cells. By H. H. Poole and W. R. G. Atkins. Pp. 133-139. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 6d.

OTHER COUNTRIES

Scientific Reports of the Imperial Institute of Agricultural Research, Pusa (including the Reports of the Imperial Dairy Expert, Physiological Chemist and Sugarcane Expert), 1932-33. Pp. v+203+4 plates. (Delhi: Manager of Publications.) 4.12 rupees; 8s.

The Indian Forest Records. Vol. 20, Part 11: New Termites from India. By Thomas E. Snyder. Pp. ii+28. (Delhi: Manager of Publications.) 9 annas; 1s.

Carnegie Institution of Washington. Publication No. 436: Contributions to American Archaeology. Vol. 2, Nos. 5 to 12. Pp. iii+355+38 plates. (Washington, D.C.: Carnegie Institution.)

Advisory Department of the Imperial College of Tropical Agriculture. Report on the Agricultural Department, St. Lucia, 1933. Pp. iv+51. (Castries, St. Lucia: Government Printing Office.) 6d.

Publications of the Dominion Observatory, Ottawa. Vol. 12: Bibliography of Seismology. No. 2 (Items 2131-2244): April, May, June, 1934. By Ernest A. Hodgson. Pp. 27-44. (Ottawa: King's Printer.) 25 cents.

U.S. Department of Agriculture. Miscellaneous Publication No. 198: An Annotated Bibliography of the Hessian Fly, *Phytophaga destructor* (Say). By J. S. Wade. Pp. 100. (Washington, D.C.: Government Printing Office.) 10 cents.

Proceedings of the California Academy of Sciences, Fourth Series. Vol. 21, No. 17: The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 17: The Hepaticae (chiefly Riccia and Anthocerotaceae) of the Galapagos Islands and the Coast and Islands of Central America and Mexico. By Marshall A. Howe. Pp. 199-210+plate 7. Vol. 21, No. 18: The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 18: Lichens. By David H. Linder. Pp. 211-224+plate 8. (San Francisco.)

Ceylon. Part 4: Education, Science and Art (D). Administration Report of the Director of Agriculture for 1933. By Dr. W. Youngman. Pp. 184. (Colombo: Government Record Office.) 2 rupees.

Journal of the Faculty of Science, Imperial University of Tokyo. Section 2: Geology, Mineralogy, Geography, Seismology. Vol. 3, Part 8: The Cambro-Ordovician Formations and Faunas of South Chosen—Paleontology, Part 1: Middle Ordovician Faunas. By Teichi Kobayashi. Pp. 329-519+44 plates. 3.50 yen. Vol. 3, Part 9: The Cambro-Ordovician Formations and Faunas of South Chosen—Paleontology, Part 2: Lower Ordovician Faunas. By Teichi Kobayashi. Pp. 521-555+8 plates. 1.00 yen. (Tokyo: Maruzen Co., Ltd.)

Meddelanden från Lunds Observatorium. Ser. 2, Nr. 67: Catalogue of Auroræ borealis observed in Northern Sweden during the Time August 1932-March 1933. By Axel Corlin. Pp. 51. Ser. 2, Nr. 68: Studies on the Stream Motions of the Stars. By W. Gyllenberg. Pp. 114. 9.00 kr. Ser. 2, Nr. 69: Analytical Theory of Regression. By S. D. Wicksell. Pp. 32. 2.50 kr. Ser. 2, Nr. 70: Studies of the Effective Wave-Lengths of Stars. First Paper: Effective Wave-Lengths of 659 Stars in Messier 37 from Plates taken at Mount Wilson. By Jöran M. Ramberg. Pp. 39. 4.00 kr. (Lund.)

Memoirs of the Commonwealth Solar Observatory. Memoir No. 4: Atmospheric Potential Gradient Observations at the Commonwealth Solar Observatory, Mount Stromlo, Canberra. By C. W. Allen. Pp. 47. (Canberra: Government Printer.)

Journal of the Indian Institute of Science. Vol. 17A, Part 8: Utilisation of Indigenous Tanning Materials, Part 1: Manufacture of Tannin Extract from Avaram Bark (*Cassia auriculata*, Linn.). By Keshaviah Aswath Narain Rao and Shaha L. Janniah. Pp. 95-104. 14 annas. Vol. 17A, Part 9: Estimation of Potassium by the Cobaltinitrite Method. By S. D. Sunawala and K. R. Krishnaswami. Pp. 105-112. 12 annas. (Bangalore.)

The Indian Lac Research Institute. Bulletin No. 19: The Heat Curing of Shellac, Part 2: "Depolymerisation". By M. Rangaswami and R. W. Aldis. Pp. 10. 1 rupee. Bulletin No. 20: Further Notes on the Use of *Schleichera trijuga* (Kusum) in Lac Cultivation. By Dorothy Norris; with an Appendix by P. M. Glover. Pp. 4. 8 annas. Bulletin No. 21: A Check List of the *Chalcidoidea* bred at Nankum from the Lac Insect *Laccifer lacca*, with some Notes as regards their Function, Economic Importance and Control. By P. M. Glover. Pp. 14. 1 rupee. (Bangalore.)

Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. 86. Fishes obtained by Mr. H. W. Bell-Marley, chiefly in Natal and Zululand in 1929 to 1932. Pp. 405-514. (Philadelphia.)

National Research Council: Division of Geology and Geography. Report of the Committee on the Measurement of Geologic Time, presented at the Annual Meeting of the Division of Geology and Geography, April 28, 1934. Pp. ii+86. (Washington, D.C.: National Research Council.)

Descriptive Catalogue of the Collection of Microscopes in charge of the Utrecht University Museum, with an Introductory Historical Survey of the Resolving Power of the Microscope, by P. H. Van Cittert. Pp. 110. (Groningen: P. Noordhoff.) 2.90 f.

Bulletin of the American Museum of Natural History. Vol. 67, Article 8: Chalicotheres from Mongolia and China in the American Museum. By Edwin H. Colbert. Pp. 353-387. (New York City.)

Journal of Science of the Hiroshima University, Series B, Div. 2 (Botany). Vol. 2, Article 2: Monographia Hepaticarum Australi-Japonicarum. By Yoshiwo Horikawa. Pp. 101-325+plates 11-21. (Tokyo: Maruzen Co., Ltd.) 2.10 yen.

Canada: Department of Mines: Mines Branch. Investigations in Ore Dressing and Metallurgy (Testing and Research Laboratories), January to June 1933. (No. 743.) Pp. iii+157+4 plates. (Ottawa: Government Printer.)

Carnegie Institution of Washington. Publication No. 415: Contributions to Paleontology—Studies of the Pleistocene Paleobotany of California. Pp. iii+179+31 plates. (Washington, D.C.: Carnegie Institution.)

CATALOGUES

Forced Air Circulation Furnaces. Pp. 12. (London: Wild-Barfield Electric Furnaces, Ltd.)

Catalogue de Livres anciens et modernes rares ou curieux relatifs à l'Orient. (No. 28.) Pp. 62. (Paris: Libr. Adrien-Maisonneuve.)