

like melanophores, are of relatively fixed and constant form. WILLIAM ROWAN: Experiments in bird migration. (3) The effects of artificial light, castration and certain extracts on the autumn movements of the American crow (*Corvus brachyrhynchos*). The normal southward autumnal migration was reversed, to some extent, after increasing artificially the length of the day for five weeks during October–November 1931. Castrated birds went southwards. A non-migratory group was produced by treating caponised birds with injections of an extract from male human urine. All birds migrating maintained the north-west–south-east line of flight characteristic of Alberta crows, although liberated at a non-migratory season. Maps showing distribution of recovered birds and records of observations are given. FRANK H. CLARK: Hydrocephalus, a hereditary character in the house mouse. This lethal character is transmitted as a simple recessive unit character, and it may be linked with the gene producing a flexed tail. M. DEMEREC: Rate of instability of miniature-3 gamma gene of *Drosophila virilis* in the males in the homozygous and in the heterozygous females. W. M. DAVIS: Glacial epochs of the Santa Monica Mountains, California. A new coastal road has provided exposures indicating that the region has suffered three periods of sea abrasion at different levels, with which alternated two epochs of withdrawal of the sea and platform emergence. These withdrawals are believed to mark the beginning of two glacial epochs, but there is no evidence of glaciation in the Santa Monica Mountains themselves, which are too low for such records. G. A. MILLER: The commutator subgroup of a group generated by two operators. L. A. MACCOLL: On the distributions of the zeros of certain analytic functions. MAURICE FRÉCHET: On the behaviour of the n th iterate of a Fredholm kernel as n becomes infinite. NEAL H. MCCOY: On the function in quantum mechanics which corresponds to a given function in classical mechanics.

Forthcoming Events

Monday, Feb. 27

ROYAL GEOGRAPHICAL SOCIETY, at 5.30.—Sir Douglas Mawson: The Banzare Film (illustrating the recent voyage of the *Discovery*).

Tuesday, Feb. 28

ROYAL SOCIETY OF ARTS (Dominions and Colonies Section), at 4.30.—Major G. St. John Orde Browne: "Economic Development in Tropical Africa as affected by Labour Supply".

Wednesday, March 1

BEDFORD COLLEGE, LONDON, at 5.15.—"Contemporary Developments in Science". Sir Henry Dale: "Ultra-microscopic Organisms and the Troubles which they Cause".

UNIVERSITY COLLEGE, LONDON, at 5.30.—Prof. A. E. Richardson: "Library Design".

SOCIETY OF PUBLIC ANALYSTS, at 8.—(at the Chemical Society's Rooms, Burlington House, Piccadilly, W.1).—Annual General Meeting.

Thursday, March 2

ROYAL INSTITUTION, at 5.15.—A. R. Hinks: "Geography in the Public Service".

INSTITUTION OF CIVIL ENGINEERS, at 6.—(Extra Meeting).—V. J. P. de Blocq van Kuffeler: "The Zuider Zee Works".

Friday, March 3

BEDSON CLUB, at 6.30.—(in the Chemistry Theatre, Armstrong College, Newcastle-upon-Tyne).—Prof. R. Whytlaw-Gray: "The Accurate Determination of Atomic Weights by the Method of Limiting Densities".

PHYSICAL AND CHEMICAL SOCIETIES OF THE UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE, at 7.—Prof. W. A. Bone: "Britain's Coal Problems".

GEOLOGISTS' ASSOCIATION, at 7.30.—(in the Architectural Theatre, University College, Gower Street, W.C.1).—Annual General Meeting. A. L. Leach (Presidential Address): "The Geology and Scenery of the South Pembrokeshire Coast".

ROYAL INSTITUTION, at 9.—Sir Douglas Mawson: "The New Polar Province".

Official Publications Received

GREAT BRITAIN AND IRELAND

King Edward's Hospital Fund for London. Provision for the Professional and Middle Classes at Voluntary Hospitals in London. Pp. 20. (London: George Barber and Son, Ltd.) 3d.

The British Electrical and Allied Industries Research Association (Incorporated). Twelfth Annual Report, October 1, 1931, to September 30, 1932. Pp. 94. (London.)

Proceedings of the Royal Society. Series A, Vol. 139, No. A388, February 1. Pp. 237–474. (London: Harrison and Sons, Ltd.) 12s.

Proceedings of the Prehistoric Society of East Anglia for 1932. Vol. 7, Part 1. Pp. v+148+17 plates. (London: H. K. Lewis and Co., Ltd.) 15s. net.

The Carnegie Trust for the Universities of Scotland. Thirty-first Annual Report (for the Year 1931–32) submitted by the Executive Committee to the Trustees on February 8, 1933. Pp. iv+86. (Edinburgh.)

Empire Cotton Growing Corporation. Reports received from Experiment Stations, 1931–1932. Pp. ix+172. (London.) 2s. 6d.

The Journal of the Royal Horticultural Society. Edited by F. J. Chittenden. Vol. 58, Part 1, February. Pp. 234+ix+xvi+60 plates. 7s. 6d. Report for the Year 1932, with Statement of Accounts; Arrangements for the Year 1933; List of New Fellows, etc. Pp. 174+xlvi. 1s. (London: Royal Horticultural Society.)

OTHER COUNTRIES

Scientific Papers of the Institute of Physical and Chemical Research. No. 402: Über die Synthese einiger Methoxymethyl-alkyl-ketone und ihre Beziehung zum Aroma der Gärungsprodukte. By Sutckiti Maruyama. Pp. 53–62. (Tokyo: Iwanami Shoten.) 15 sen.

Annales de l'Institut de Physique du Globe de l'Université de Paris et du Bureau central de Magnétisme terrestre. Publiées par les soins de Prof. Ch. Maurain. Tome 10. Pp. iv+138. (Paris: Les Presses universitaires de France.)

Report on the Operations of the Department of Agriculture, Madras Presidency, for the Year 1931–32. Pp. 45. (Madras: Government Press.) 1.2 rupees.

Ward Memorial Publication, 1931: Physics and Physiology of the Acoustics of Buildings, particularly of the United Provinces Council Chamber, Lucknow. Being University Extension Lecture delivered on December 13, 1930, by Satyendra Ray at the Physics Lecture Theatre, University of Lucknow. Pp. 29. (Lucknow: Ward Memorial Committee.) 1 rupee; 1 dollar.

Commonwealth of Australia: Council for Scientific and Industrial Research. Bulletin No. 68 (Radio Research Board Report No. 5): Atmospherics in Australia, I. By G. H. Munro and Dr. L. G. H. Huxley. Pp. 49. (Melbourne: H. J. Green.)

Journal of the Indian Institute of Science. Vol. 15A, Part 7: Studies in Indian Essential Oils; 1: Essential Oil from Leaves of *Litsea Zeylanica*, Linn., by B. Sanjiva Rao; 2: Essential Oil from Flower-heads and Stalks of *Andropogon Kuntzeanus*, Hack, *Var. Foveolata*, Hack, by B. Sanjiva Rao; 3: Essential Oil from Leaves of *Thymus Serrifolium*, Linn., by Jagjit Singh and B. Sanjiva Rao; 4: Essential Oil from Leaves of *Cinnamomum Zeylanicum*, Breyn., by the late V. P. Shintre and B. Sanjiva Rao. Pp. 71–87. (Bangalore: Indian Institute of Science.) 1 rupee.

Investigations on the Spike-Disease of Sandal. 6: Report of Progress made during the Half-Year ending September 30, 1932. Edited by M. Sreenivasaya. Pp. 17. (Bangalore: Indian Institute of Science.)

The Pasteur Institute of Southern India, Coonoor. The Annual Report of the Director for the Year ending December 31, 1931, together with the Twenty-fifth Annual Report of the Central Committee of the Association for the Year ending March 31, 1932. Pp. 69. (Madras: Madras Publishing House.)

Department of Agriculture: Straits Settlements and Federated Malay States. Scientific Series, No. 10: An Examination of the Geology and Soils of an Area in the State of Perak. By H. E. F. Savage and R. G. H. Wilshaw. Pp. ii+16+5 plates. (Kuala Lumpur.) 50 cents.

Memoirs of the Punjab Irrigation Research Laboratory. Vol. 3, No. 1: An Analysis of the Utilization of Irrigation-Water in Typical Punjab Canals. By B. H. Wilsdon and Mehta Mukand Lal. Pp. 10+8 plates. (Lahore.) 8 annas; 9d.

Straits Settlements. Annual Report of the Director of Gardens for the Year 1931. By R. E. Holtum. Pp. 10. (Singapore.)

Proceedings of the American Philosophical Society. Vol. 71, No. 7. Pp. xx+411–427. (Philadelphia.)