

## CAPE TOWN.

Royal Society of South Africa, May 20.—E. L. Halliday: Correlations between the field changes due to lightning and the appearance of the flashes. A preliminary note upon certain results obtained in investigation of the polarity of thunderstorms in the Transvaal. Photographic records of the field changes due to lightning discharges have been combined with visual and photographic observations of the flashes. Of 273 flashes between the base of the cloud and the ground, 257 gave positive field changes and 16 gave negative field changes. Of 173 positive field changes at distances greater than 7 km., 159 were due to flashes to ground. Of 164 discharges within the cloud at distances greater than 7 km., 150 gave negative changes of field.—J. Schonland and C. A. Coppens: Point discharge measurements below thunderstorms. The arrangement used by the authors in Johannesburg and Graaff-Roinet utilises a suitably insulated point and a portable galvanometer. Its simplicity lends itself to the collection of statistical data on the sign and order of magnitude of the fields and field-changes. The arrangement leaves the observer fairly free to note the meteorological features and the distance of the storm.—M. Rindl: The alkaloids of the bark of *Strychnos henningsii*. Two alkaloids have been isolated, a crystalline and an amorphous one. The present paper deals with the methods adopted to isolate the amorphous alkaloid and the endeavours to obtain the base itself, or derivatives of it, in a crystalline form.

## SYDNEY.

Royal Society of New South Wales, May 6.—O. U. Vonwiller (presidential address): A generation of electron theory. A review of developments in atomic and light theory since the 'isolation' of the electron, with special reference to the accompanying changes in the philosophic outlook of the physicist from the deterministic view general at the end of the nineteenth century to the uncertainty and probability principles of to-day. It is emphasised that the wave theory of light cannot be regarded as more than a convenient hypothesis in terms of which certain phenomena can be reconciled. Light-waves may be considered as a mathematical device which can be used to express the probability of the presence of photons just as de Broglie waves can be used with electrons. The evidence for the objective reality of the waves is no greater in one case than in the other.

## Official Publications Received.

## BRITISH.

- City of Leicester: Museum and Art Gallery. Twenty-seventh Report to the City Council, 1st April 1930 to 31st March 1931. Pp. 32. (Leicester.)
- Sanatoria. List of Sanatoria and other Residential Institutions approved by the Minister of Health for the Treatment of Persons suffering from Tuberculosis and resident in England and Wales, with the names of the Administrative Counties and County Boroughs in which the Institutions are situated. List 10(d). Pp. 24. (London: H.M. Stationery Office.) 4d. net.
- Imperial Bureau of Plant Genetics: Herbage Plants. Herbage Extracts, 1931. Vol. 1, No. 1, June. Pp. 39. 1s. 6d. Bulletin No. 3: The Breeding of Herbage Plants; Technique adopted at the Welsh Plant Breeding Station. Pp. 77+3 plates. 3s. (Aberystwyth.)
- Empire Survey Review. Vol. 1, No. 1, July. Pp. 48+ xviii. (London: The Crown Agents for the Colonies.) 3s.
- City of Leicester Municipal Libraries. Fifty-second Report to the City Council, 1st April 1930 to 31st March 1931. Pp. 20. (Leicester.)
- The Proceedings of the Physical Society. Vol. 43, Part 4, No. 239, July 1. Pp. viii+371-460. (London.) 7s. net.
- Air Ministry: Aeronautical Research Committee: Reports and Memoranda. No. 1375 (E. 47—G. 35, 39 and a): Possible Cause of Aircraft Fires on Crash. By W. G. Glendinning; with an Appendix by Staff of the Engine Department. Pp. 19+6 plates. 1s. net. No. 1255 (Ae. 404): The Flutter of Monoplanes, Biplanes and Tail Units (A Sequel to R. and M. 1155). By R. A. Frazer and Dr. W. J. Duncan. Pp. viii+179+12 plates. 7s. 6d. net. (London: H.M. Stationery Office.)

No. 3222, Vol. 128]

Proceedings of the Royal Society of Edinburgh, Session 1930-1931. Vol. 51, Part 2, No. 14: Male Haploidy and Female Diploidy in *Sirex cyaneus*; F. (Hymen.). By Prof. A. D. Peacock and Dr. R. A. R. Gresson. Pp. 97-103+1 plate. 1s. Vol. 51, Part 2, No. 15: Some New Facts about the Structure of the Cuticles in the Russian Paper-Coal and their Bearing on the Systematic Position of some Fossil Lycopodiales. By Jessie A. R. Wilson. With a Note on the Absence of Elongate Heterosporous Lycopodiales in the Fossil-Record, by Dr. John Walton. Pp. 104-115+1 plate. 1s. 3d. Vol. 51, Part 2, No. 16: Fourier Integrals. By T. M. MacRobert. Pp. 116-126. 1s. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.)

The Scientific Proceedings of the Royal Dublin Society. Vol. 20, N.S., Nos. 1-7: A Modified Form of Radon Capillary Apparatus, by Dr. H. H. Poole; The Exudation of Water from the Leaf-tips of *Colocasia antiquorum*, Schott., by Prof. Henry H. Dixon; The Application of Gamma Radiation to Deep-seated Tumours, II, by Dr. J. Joly; Photo-electric Measurements of Illumination in relation to Plant Distribution, Part 4: Changes in the Colour Composition of Daylight in the Open and in Shaded Situations, by Dr. W. R. G. Atkins and Dr. H. H. Poole; Observations on the Photo-electric Measurement of the Radiation from Mercury Vapour Lamps and from the Sun, and on the Effects of such Radiation upon the Skin, by Dr. W. R. G. Atkins; Some Experiments on the Accuracy obtainable with Gas-filled Photo-electric Cells, by Dr. W. R. G. Atkins; A Method of distinguishing certain Strains of New Zealand Perennial Ryegrass (*Lolium perenne*, L.) by examination of Seedlings under Screened Ultra-violet Light, by P. A. Linehan and S. P. Mercer. Pp. 83+2 plates. (Dublin: Hodges, Piggis and Co.; London: Williams and Norgate, Ltd.) 7s.

The Journal of the Institution of Electrical Engineers. Edited by P. F. Rowell. Vol. 69, No. 415, July. Pp. 805-932+xxvi. (London: E. and F. N. Spon, Ltd.) 10s. 6d.

Summary of Progress of the Geological Survey of Great Britain and the Museum of Practical Geology for the Year 1930. Part 1, with Report of the Geological Survey Board and Report of the Director. Pp. iv+92+2 plates. (London: H.M. Stationery Office.) 2s. net.

British Empire Cancer Campaign. Eighth Annual Report of the Grand Council, presented at the Meeting held at the House of Lords, 20.7.31. Edited by J. P. Lockhart-Mummery. Pp. 202. (London.)

## FOREIGN.

Bulletin of the National Research Council. No. 80: Physics of the Earth. 4: The Age of the Earth. Pp. v+487. (Washington, D.C.: National Academy of Sciences.) 4.50 dollars.

Japanese Journal of Geology and Geography. Transactions and Abstracts, Vol. 8, No. 4, March. Pp. ii+239-359+2v-38. (Tokyo: National Research Council of Japan.)

Bulletin of the Earthquake Research Institute, Tokyo Imperial University. Vol. 9, Part 2, June. Pp. 115-223. (Tokyo: Iwanami Shoten.) 1.08 yen.

Classified List of Smithsonian Publications available for Distribution, May 22, 1931. Compiled by Helen Munroe. (Publication 3119.) Pp. vi+30. (Washington, D.C.: Smithsonian Institution.)

Journal of the Faculty of Agriculture, Hokkaido Imperial University. Vol. 29, Part 4: The Primary Survey of the Vegetation of the Middle Kuriles. By Misao Tatewaki. Pp. 127-190+10 plates. (Tokyo: Maruzen Co., Ltd.)

Bulletin of the Utsunomiya Agricultural College. No. 1, April. Pp. 60. (Utsunomiya.)

Publications de l'Observatoire de Genève. Rapport sur les concours de réglage de chronomètres de l'année 1930. Pp. 30. (Genève.)

Proceedings of the Imperial Academy. Vol. 7, No. 5, May. Pp. xi-xvi+179-210. (Tokyo.)

The Structure and Procedure of Cadastral Survey in Palestine. By Major C. H. Ley. Pp. ii+37+8 plates. (Jerusalem: Printing and Stationery Office.) 150 mils.

New York Zoological Society. Report of the Director of the Aquarium. Pp. 27. (New York City.)

Institut scientifiques de Buitenzorg: "s Lands Plantentuin". Treubia: recueil de travaux zoologiques, hydrobiologiques et océanographiques. Vol. 12, Supplement: Orthoptera Celebica Sarasiniana. 1: Saltatoria. Von L. Chopard, H. H. Karny and C. Willems. Pp. 273. (Buitenzorg: Archipel Drukkerij.)

Proceedings of the American Academy of Arts and Sciences. Vol. 66, No. 8: Researches on the Rotation of Permalloy and Soft Iron by Magnetization and the Nature of the Elementary Magnet. By S. J. Barnett. Pp. 273-345. 1.20 dollars. Vol. 66, No. 9: Note on the Kelvin Scale Temperature of Freezing Water. By Frederick G. Keyes. Pp. 349-355. 95 cents. (Boston, Mass.)

National Research Council. Transactions of the American Geophysical Union, Twelfth Annual Meeting, April 30 and May 1, 1931, Washington, D.C. Pp. 229. (Washington, D.C.: National Academy of Sciences.)

Occasional Papers of the California Academy of Sciences. 18: The Avifauna of the Galapagos Islands. By Harry S. Swarth. Pp. 299. (San Francisco.) 3 dollars.

Paleontologia Sinica. Series D, Vol. 7, Fascicle 2: On an Adolescent Skull of *Sinanthropus pekinensis* in Comparison with an Adult Skull of the same Species and with other Hominid Skulls, Recent and Fossil. By Dr. Davidson Black. Pp. iv+144+16 plates. (Peking: Geological Survey of China.)

Japanese Journal of Mathematics. Transactions and Abstracts, Vol. 8, No. 1, June. Pp. 64. (Tokyo: National Research Council of Japan.) The Science Reports of the Tohoku Imperial University, Sendai, Japan. Fourth Series (Biology), Vol. 6, No. 2. Pp. 163-346+plates 4.11. (Tokyo and Sendai: Maruzen Co., Ltd.)

Proceedings of the United States National Museum. Vol. 59, Art. 5: A New Species of Nematode Worm from the Sage Grouse. By Everett E. Wehr. (No. 2869.) Pp. 3. Vol. 79, Art. 5: Description of a New Genus and Species of Nematode Worm occurring in the Northwestern Belted Kingfisher, with a Key to the Genera of the Subfamily Acuariinae. By Everett E. Wehr. (No. 2871.) Pp. 4. (Washington, D.C.: Government Printing Office.)