

## Societies and Academies

## LONDON

Royal Meteorological Society, November 15. J. EDMUND CLARK, I. D. MARGARY and C. J. P. CAVE: Report on the phenological observations in the British Isles, December 1931–November 1932. Exceptional warmth again prevailed until February, which was also excessively dry. But the year was most notable for its wetness and dullness, above all, April, May and July. These gave half as much rain again as usual and only three-quarters of the sunshine average. June and early autumn largely saved the situation for field and garden crops and gave a fine floral display from August onwards. Plant events after April to early July were ten days late or more in England and Wales, but a bare week for the British Isles as a whole, since Scotland and Ireland fared much better. The names and stations of all observers are given. V. V. SOHONI and M. M. PARANJPE: Fog and relative humidity in India. Association of fogs with unsaturated air is fairly common in India. Although thick fogs are predominantly associated with relative humidities of more than 90 per cent, thin fogs are equally prevalent with humidities of 90–70 per cent.

## EDINBURGH

Royal Society, October 23. C. H. LANDER (Bruce-Preller Lecture): Liquefaction of coal. Hydrogenation, as a method of converting coal into liquid fuels, is very flexible, and by suitable modifications can be made to yield mainly either heavy oils or motor spirits, according to the demand. The process is carried out at pressures of 200–250 atmospheres and temperatures of 450°–500° C. The mechanism of the process was discussed in the light of work on pure hydrocarbons by Haber, Bone and others, together with the accepted thermal data. The exothermicity of the reaction has rendered large-scale working practicable, but emphasises cooling problems. Projected large-scale plants incorporate recycling of the heavier fractions in order to obtain the maximum yields of light spirits. The new preference of 4*l.* per gallon on motor spirit will enable the process to be tried out commercially.

## PARIS

Academy of Sciences, October 16 (C.R., 197, 801–876). ERNEST ESCLANGON: The fall of shooting stars of October 9, 1933. This was the most important shower of shooting stars since the fall of November 1885. Many determinations of the position of the radiant were made in French observatories. The mean of concordant figures was  $\alpha = 266.1^\circ$ ,  $\delta = +55.0^\circ$  in close agreement with Crommelin's figure for the 1926 swarm. M. GHERMANESCO: Finite differences equations. W. NIKLIBORC and W. STOZEK: The logarithmic potentials of the double layers. MME. H. SZMUSZKOWICZOWNA: Quasi-analytical functions. JACQUES DEVISME: Hypergeometric functions and one of their extensions. STANISLAW KOLODZIEJCZYK: The error of the second category in the problem of Student. J. LEROUX: A hypothesis of Poincaré. MME. M. L. DUBREIL-JACOTIN: The rigorous determination of permanent periodic waves of finite amplitude. GUSTAVE ANDRÉ MOKRZYCKI: The possibility of raising and landing aeroplanes with the aid of a rocket. A. BUHL: Very

general propagations indifferently undulatory or corpuscular. P. CHAMBADAL: The fractional removal of gases from hot and cold water by the Claude-Boucherot method. GEORGES CLAUDE: Remarks on the preceding paper. JACQUES WINTER: The theory of diffusion of high voltage electrons. R. FREYMANN and A. NAHERNIAC: The study of the absorption spectra of some benzene derivatives in the region  $1.0\mu$  with the aid of a recording spectrometer. The instrument used for the study of the absorption in the infra-red is a thallium oxysulphide photoresistance cell, in connexion with a valve amplifier and a galvanometer, the record being obtained by a system of three mirrors. A. DUFOUR: An interferometer with polarised pencils. L. MÉDARD and H. VOLKRINGER: The Raman effect of nitric acid alone, or in solution. The position of the lines is affected by dilution with water, but in chloroform solutions the Raman spectra are simply the superposed spectra of 99.8 per cent nitric acid and chloroform. P. SWINGS and M. MIGEOTTE: The fluorescence of the diatomic molecules of arsenic. C. G. BEDREAG: The physical system of the elements. EDOUARD RENCKER: The dilatometric study of some ternary silica-soda beryllium glasses. The experimental results are summarised in two diagrams. R. CORNUBERT and M. DE DEMO: Skita's trans  $\alpha$ 'dimethylcyclohexanone should be a *cis* isomer. JACQUES BOURCART: The stratigraphical situation and probable age of the subatlantic detritic formation in the Haut-Atlas of Marrakech. J. P. AREND: The conditions of formation of the oolitic deposits and the movements of the earth's crust. JEAN BARLOT: The distillation of the bituminous schists of the Franche-Comté Jura. The yield in oil of these schists is variable according to the mode of treatment. The conditions for maximum yields on distillation are given: the oils contain not less than 30 per cent of petrol boiling below 205° C. V. FROLOW: The undecennial component of the Nile and of the sun. The relative value of the undecennial component is sensibly greater for the sun than for the Nile and the Seine. MME. F. BAYARD-DUCLAUX: The influence of the water of imbibition of rocks on their electrical conductivity. The electrical conductivity of dry rocks is nil and their conductivity in the normal state is entirely due to the moisture present. When a dry rock is allowed to absorb water slowly, the conductivity at first increases very slowly, but after a certain amount of water has been absorbed, the increase is very rapid. It would appear that the first water absorbed combines with the rock without forming mobile ions: later the conductivity becomes electrolytic. C. ARAMBOURG: Observations on the northern edge of Lake Rodolphe. PIERRE DAN-GEARD: The vacuole of pollen grains and pollen tubes. RAYMOND-HAMET: The identity of Karrer's corynantheine and the amorphous alkaloid extracted by Fourneau from *Pseudocinchona africana*. Utilising the fact that the chlorhydrates of these alkaloids are readily soluble in chloroform, it is shown that Fourneau's amorphous alkaloid and Karrer's corynantheine are identical. H. GESLIN: The law of growth of wheat as a function of the climatic factors. The experimental method has led to a general law of the growth of wheat, and to the conception of a heliothermic constant. If such constants, already of interest for a given place, should prove to hold for the whole of a region such as France, it will allow of fixing the extreme dates of sowing and determining the possibilities of the culture of a given variety in

a fixed place. MLE. A. MICHAUX: The contents of the total calcium in blood and the elimination of this element by the kidney in the course of chronic scurvy and acute scurvy. MAURICE ROSE: An infusorian (Foettingeridae) parasite of the Siphonophores. JEAN FELDMANN and ADRIEN DAVY DE VIRVILLE: The relations between the physical conditions of the flora of the sea-shore pools of the coast of Albères. RAOUL M. MAY: The formation of the nerve terminations in the suckers of the regenerated limb of the cephalopod, *Octopus vulgaris*. H. M. FOX and J. ROCHE: Crystallised chlorocruorine. The method of preparation of the crystallised pigment is described. The results of micro-analysis are compared with those given by hæmoglobin of the horse: the proportions of sulphur and iron are higher in the chlorocruorine (see also NATURE, Sept. 30, p. 516).

### Forthcoming Events

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

#### Monday, December 4

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Capt. R. B. W. G. Andrew: "The Somali Coast".

#### Wednesday, December 6

SCHOOL OF SLAVONIC AND EAST EUROPEAN STUDIES, at 5.30—(at 40, Torrington Square, London, W.C.1). N. B. Jopson: "Pagan Slav Marriage and Funeral Customs".\*

ROYAL SOCIETY OF ARTS, at 8.—G. G. Blake: "Radiometric Condensers and Inductances".

#### Friday, December 8

ROYAL SOCIETY OF ARTS, at 4.30.—E. J. Mackay: "Further Excavations at Mohenjo-daro" (Sir George Birdwood Memorial Lecture).

ROYAL INSTITUTION, at 9.—Major R. M. Weeks: "The Making of a Sheet of Glass".

BRITISH INSTITUTE OF RADIOLOGY (Annual Congress at the Central Hall, Westminster), December 6-8.

Dec. 6, at 5.—Dr. Stanley Melville (presidential address).

Dec. 7, at 2.30.—Discussion opened by Prof. Woodburn Morison: "Tumour of Bone".

At 5.—N. S. Finzi (Mackenzie Davidson Memorial Lecture): "X-Ray and Radium Treatment in the Future".

Dec. 8, at 10 a.m.—Discussion opened by Dr. F. Hernaman-Johnson, W. M. Levitt, G. F. Stebbing and Russell J. Reynolds: "Review in regard to Radiation of Neoplasm with Special Reference to the Value of Hard and Soft Rays".

At 2.30.—Dr. A. Bouwers (Silvanus Thompson Memorial Lecture): "Modern X-Ray Developments".

### Official Publications Received

#### GREAT BRITAIN AND IRELAND

Journal of the Royal Microscopical Society. Series 3, Vol. 53, Part 3, September. Pp. xvi+203-297. (London: Royal Microscopical Society.) 10s. net.

Second Interim Report (June 1933) of the Furunculosis Committee appointed July 1929 by the Rt. Hon. William Adamson and the Rt. Hon. Noel Buxton. Pp. 81. (Edinburgh and London: H.M. Stationery Office.) 2s. 6d. net.

Department of Scientific and Industrial Research. Report of the Building Research Board; with Report of the Director of Building Research for the Year 1932. Pp. x+133+6 plates. (London: H.M. Stationery Office.) 2s. 6d. net.

The National Smoke Abatement Society. Fourth Annual Report, 1933. Pp. 26. (Manchester.)

Journal of the Society of Glass Technology. Edited by Prof. W. E. S. Turner. Vol. 17, No. 67, September. Pp. viii+239-347+301-406+xxiv. (Sheffield.) 10s. 6d.

Proceedings of the Royal Society. Series A, Vol. 142, No. A847, November 1. Pp. 361-714. 18s. Series B, Vol. 114, No. B786, November 1. Pp. 103-6s. (London: Harrison and Sons, Ltd.)

Battersea Polytechnic. Report of the Principal for the Session 1932-33. Pp. 42. (London.)

The North of Scotland College of Agriculture. Report on the Work of the North of Scotland College for the Year 1932-33. Pp. 35. (Aberdeen.)

The Proceedings of the Physical Society. Vol. 45, Part 6, No. 251, November 1. Pp. iv+755-854. (London.) 7s. net.

Proceedings of the Royal Irish Academy. Vol. 41, Section A, No. 12: An Investigation on the Penetrating Radiation from Potassium. By F. D. Greeves. Pp. 129-136. (London: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 1s.

#### OTHER COUNTRIES

Meddelanden från Statens Meteorologisk-Hydrografiska Anstalt. Band 6, No. 3: Vinden i Sveriges Högre Luftlager; Resultat av Pilotballongobservationer utförda under åren 1919-1929. Av C. J. Östman. Pp. ii+38. 2.50 kr. (Stockholm.)

Abisko Naturvetenskapliga Station. Observations météorologiques à Vassijaure. 3: Du 1<sup>er</sup> août 1907 au 31 juillet 1908. Exécutées par Erik Bergstrand et Lennart Stridsberg. Rédigées par Erik Bergstrand et Bruno Rolf. Pp. ii+54. (Stockholm.)

U.S. Department of Agriculture. Circular No. 270: Orchard Insects of the Pacific Northwest and their Control. By E. J. Newcomer. Pp. 77. (Washington, D.C.: Government Printing Office.)

The Medical and Scientific Archives of the Adelaide Hospital. No. 12 (for the Year 1932). Pp. 84+3 plates. (Adelaide: Government Printer.)

Japanese Journal of Geology and Geography. Transactions and Abstracts, Vol. 11, Nos. 1 and 2, September. Pp. ii+155+7+15 plates. (Tokyo: National Research Council of Japan.)

The Rockefeller Foundation. Annual Report, 1932. Pp. viii+455. (New York City.)

Smithsonian Miscellaneous Collections. Vol. 89, No. 8: Morphology of the Insect Abdomen. Part 2: The Genital Ducts and the Ovipositor. By R. E. Snodgrass. (Publication 3219.) Pp. 148. (Washington, D.C.: Smithsonian Institution.)

Division of Fish and Game of California: Bureau of Commercial Fisheries. Fish Bulletin No. 40: The California Mackerel Fishery. By Richard S. Croker. (Contribution No. 125 from the California State Fisheries Laboratory.) Pp. 149. (Terminal Island, Calif.: California State Fisheries Laboratory.)

Field Museum of Natural History. Geology Leaflet 14: A Forest of the Coal Age. By B. E. Dahlgren. Pp. 39+2 plates. (Chicago.) 25 cents.

University of Toronto Studies: Geological Series, No. 35: Contributions to Canadian Mineralogy, 1933. Pp. 64+3 plates. (Toronto: University of Toronto Press.) 50 cents.

Proceedings of the United States National Museum. Vol. 82, Art. 30: New Genera and Species of Parasitic Mites of the Superfamily Parasitoida. By H. E. Ewing. (No. 2971.) Pp. 14+4 plates. (Washington, D.C.: Government Printing Office.)

U.S. Department of Commerce: Bureau of Standards. Research Paper 585: Effect of Temperature and Frequency on the Dielectric Constant, Power Factor and Conductivity of Compounds of Purified Rubber and Sulphur. By A. H. Scott, A. T. McPherson and Harvey L. Curtis. Pp. 173-209. (Washington, D.C.: Government Printing Office.) 5 cents.

Annual Report of the Department of Agriculture, S.S. and F.M.S., for the Year 1932. By Dr. H. A. Tempany. Pp. iv+78. (Kuala Lumpur.)

National Research Council of Japan. Report, Vol. 2, No. 1, April 1931—March 1932. Pp. iii+70. (Tokyo.)

Publications of the Dominion Observatory, Ottawa. Vol. 10: Bibliography of Seismology. No. 18: April, May, June, 1933. By Ernest A. Hodgson. Pp. 305-318. (Ottawa: Government Printer.) 25 cents.

The Science Reports of the Tôhoku Imperial University, Sendai, Japan. First Series (Mathematics, Physics, Chemistry), Vol. 22, No. 4. Pp. 633-914. (Tokyo and Sendai: Maruzen Co., Ltd.)

Journal and Proceedings of the Asiatic Society of Bengal. New Series, Vol. 27, 1931, No. 4, October 1933. Pp. clxxxvi. (Calcutta.) 4.14 rupees.

Indian Journal of Physics, Vol. 8, Part 2, and Proceedings of the Indian Association for the Cultivation of Science, Vol. 17, Part 2. Conducted by Sir C. V. Raman and Dr. K. S. Krishnan. Pp. 95-170+plates 6-9. (Calcutta.) 2 rupees; 3s.

The Journal of the Osmania University College. Vol. 1. Pp. viii+107+12 plates. (Hyderabad.)

Sveriges Geologiska Undersökning. Ser. C, No. 379: Untersuchungen über Tonerdzement. 1: Die mineralogische Beschaffenheit der Schmelzemente von Valleviken, Schweden und von Ciment fondu der Soc. An. des Chaux et Ciment de Lafarge et du Teil, Frankreich, von N. Sundius; 2: Die Reaktion zwischen Tonerdzement und Wasser, von Gunnar Assarsson. Pp. 60. (Stockholm: P. A. Norstedt and Söner.) 2.00 kr.

Instituto Geográfico, Catastral y de Estadística. Anuario del Observatorio Astronómico de Madrid para 1934. Pp. 376. (Madrid.)

#### CATALOGUES

Neue Bücher für naturwissenschaftlich Gebildete. Pp. 16. Bücher über den Standestaat und die berufständische Gliederung. Pp. 16. (Jena: Gustav Fischer.)

The Applications of Marmite (Yeast Extract) in Medicine and Dietetics. Pp. 23. (London: The Marmite Food Extract Co., Ltd.)

Knowles Patent Electrolytic Cells for producing Pure Hydrogen and Oxygen. Pp. 21. (Chester: The International Electrolytic Plant Co.)