

Societies and Academies

DUBLIN

Royal Dublin Society, March 26. W. HUGHES: Investigations on the control of seedling disease of sugar beet. A trial was made of the effectiveness against the blackleg disease of sugar beet, of the bulk seed treatment carried out by the Continental producers, in comparison with treatment with various disinfectants in small lots before sowing and with no treatment. A germination test indicated that in the bulk seed treatment some injury was caused by too long contact between seed and disinfectant. In a randomised field experiment, the following materials used before sowing gave a significant increase in establishment of seedlings over the control—Germisan and Ceresan (U.T. 1875 A.), 27.6 per cent, Granosan, 25.6 per cent, and Ceresan (old), 21.7 per cent. The remaining five treatments, which included the seed producers' treatment in bulk, were not significantly better than the control. Seed treatment is recommended as a necessary insurance. E. T. S. WALTON: Artificial radioactivity.

PARIS

Academy of Sciences, March 4 (*C.R.*, 200, 793–868). EMMANUEL LECLAINCHE: Notice on [the late] Theobald Smith. MARK KREIN: Derivatives of Mercer's nuclei. A. TIEMLAKEFF: The growth of functions satisfying linear partial differential equations of the second order. ALEXANDRE SMOHORSHEVSKY: Orthogonal polynomials. ANTOINE MAGNAN: A rapid kinematograph for films 9 mm. wide, giving 1,500–2,000 images per second. A simplification of an apparatus previously described. A film taken with 2,000 images per second can be projected showing 16 views per second. This slow-motion film has been applied to show the motion of a rebounding ball, the wing motion of a bird and the movement of the lips of a person speaking. PIERRE LEJAY: The interpretation of observations of the intensity of gravity made in the Philippines, in Malaya and in the Dutch Indies. The anomalies found on land confirm the results of Vening-Meinesz made at sea. The results appear to be connected with the great instability of the surface layers. There is great tectonic activity, there are dozens of active volcanoes and earthquakes almost daily. JACQUES MÉTADIER: The Brownian movement in the Hilbert space. Hyperquantification and superquantification. PIERRE VERNOTTE: The formulation of experimental laws. The uncertainty which results for the interpretation of physical phenomena. Application to the law of reactivity. A discussion of the representation of experimental facts by mathematical expressions. It is concluded that although an expression can be found which will represent a set of experiments with precision, a physical interpretation of a phenomenon cannot be based on the analytical expression which represents the experiments. ANDRÉ EGAL: The measurement of the velocity of marine, submarine or aerial vessels by compensated thermocouples. JACQUES ERRERA and POL MOLLET: Intramolecular isomerisms and infra-red absorption spectra. The absorption spectra of the three hydroxybenzoic acids and of *o*-chlorophenol confirm Sidgwick's theory of cycle formation. A. IONESCO: Structure of the absorption bands of acetylene in the ultra-violet. GEORGES COSTEANU, RENÉ FREYMAN and AUREL NAHERNIAC: Study of the absorption spectra in

the near infra-red of liquid, gaseous and dissolved ammonia. The observations suggest the existence of polymers for liquid ammonia or ammonia in concentrated solutions. MME. JACQUELINE ZADOC-KAHN EISENMANN: The electric double refraction of para-azoxyanisole in the isotropic state. RENÉ DE MALLEMANN and PIERRE GABIANO: The magnetic rotatory power of ammoniacal nitrogen. FRÉDÉRIC JOLIOU and LEW KOWARSKI: The production of a radiation with energy comparable with that of the soft cosmic rays. Study of the radiation produced by irradiating a silver plate with neutrons emitted by polonium + beryllium. PIERRE PREISWERK: Experiments on the radio-activity produced by neutrons. VICTOR HENRI and WLADIMIR LASAREFF: The ultra-violet absorption spectrum of methylamine. PAUL JOB: The coloration of nickel salts in hydrobromic acid solution. Application of the law of mass action in concentrated solution. ANDRÉ BOULLÉ: The application of differential thermal analysis to the study of the anhydrous sodium metaphosphates. ANDRÉ CHRÉTIEN and PIERRE GENET: Disodium ortho-arsenate and its hydrates. FERNAND GALLAIS: Iodomeric acid. From a study of the changes in the magneto-optical properties of solutions of mercuric chloride produced by the gradual addition of hydriodic acid, it is inferred that iodomeric acid has the composition H_2HgI_4 . AL. FAVORSKY and MME. TATIANA FAVORSKAJA: The gradual molecular acetylene-allene-dienic transposition of the halo-hydrins. JOSEPH WIEMANN: The synthesis of a methyl and dimethylhexite. J. FRANC DE FERRIÈRE: The history of the soils of the lower terraces of the Rhine in Haute-Alsace. GEORGES RENOARD: The upper Stephanian and the Permian of the Villé basin in Alsace. GEORGES DUBOIS and MME. CAMILLE DUBOIS: The results of pollen analyses of Flandrian coastal peat between Penmarc'h and Concarneau. GEORGES SCHNEIDER: The variations of the yield of the thermal springs of Aix-les-Bains. G. DEMETRESCU: The study of seismograms. R. GUIZONNIER: The phase of the diurnal component of the gradient of terrestrial electric potential. HENRI COLIN and EUGÈNE BOUGY: Sugar, ash, nitrogen and phosphorus in fodder and sugar beets and in their hybrids. The forage beet has more ash, less sugar, more nitrogen and more phosphorus than the sugar beet. JEAN CHAZE and ANDRÉ SARAZIN: Contribution to the study of the mole, a disease of cultivated mushrooms. MME. ANDRÉE DRILHON: Calcium and casting the shell in Crustacea. JOSEPH MEIERHANS: The behaviour of physostome fishes after extirpation of the air bladder. YERVANTE MANOUËLIAN: Rabies, Borna's disease and peripheral neurones. BARUCH SAMUEL LEVIN and IWO LOMINSKI: The action of soft X-rays on micro-organisms. GEORGES BLANC and L. A. MARTIN: Experimental iridocyclitis produced by the typhic virus.

BRUSSELS

Royal Academy (*Bull. Classe Sci.*, 21, No. 1). G. CESÀRO: Equation and form of the curve for which $\delta = k \cdot \sin \alpha/\alpha$ ($k = \text{const.}$), if δ is the length of the perpendicular from the origin on to one of its tangents and α the angle which this perpendicular makes with the x -axis. E. HENRIOT: The antisymmetric aspect of electro-magnetism: torque and momentor. The importance of antisymmetrical quantities in electromagnetic theory is emphasised, and two tensors are defined—the torque tensor and the momentor. E. DE WILDEMAN: Adventitious buds in Congolese varieties

of *Hæmanthus*. P. BURNIAT: Birational transformations of space having two isolated associated fundamental points. (3) Transformations T_3 and T_4 . J. F. COX: Representation of the whole surface of the earth in an equilateral triangle. Formulæ and examples of conformal and equivalent projections in an equilateral triangle. J. VAN MEIGHEM: Equations of perturbation of perfect piezotropic fluids. This paper establishes the equations in the case when the field of the Lagrangian variables of the perturbed movement does not coincide with that of the unperturbed movement. G. BALASSE and M. LLE. GALET: Spectra of iodine with feeble excitation. A correction. J. PASTEELS: Morphogenetic movements of the gastrulation in turtles. J. TERBY: Attempt to explain the mitosis of *Spirogyra* by that of *Plasmodiophora*.

GENEVA

Society of Physics and Natural History, February 7. B. SUSZ and E. BRINER: The Raman spectra of mixtures of nitric acid and nitrogen pentoxide. The frequencies 1048^{-1} and 1396^{-1} , the intensity of which increases with the concentration of the pentoxide, appear to be connected with the presence of this substance. W. H. SCHOPFER: The solubility of growth factors.

February 21. P. ROSSIER: (1) A colorimetric equivalent. The application to a group of all spectral types of stars of a linear function of the abscissæ of the extremities of spectrograms of type *A* stars leads to an expression sensibly proportional to the colour index. (2) The natural classification of stars. If a number proportional to the percentage of stars of a spectral type less advanced than a certain limit is chosen as a variable independent of classification, it appears that certain inflections of some curves of colorimetric equivalents disappear.

VIENNA

Academy of Sciences, January 24. ERICH TSCHERMAK-SEYSENEGG: Hybridogenic pseudo-parthenogenesis. ALEXANDER TORNQVIST: The high metamorphic gravel beds of Tessenberg-Panzendorf in the eastern Tyrol. RICHARD WEISS and JAKOB KOLTES: Derivatives of 1:4-di- α -naphthyl-naphthalene. RUDOLF WAGNER: Proliferation polymorphism of hexamer blossom. A methodological investigation. RUDOLF ZIMARA: Mammals of West Africa.

Forthcoming Events

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

Sunday, April 21

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

Friday, April 26

ROYAL ASTRONOMICAL SOCIETY, at 4.30.—Discussion on "Gravity Measurements" to be opened by Dr. E. C. Bullard.

SOCIETY OF CHEMICAL INDUSTRY (CHEMICAL ENGINEERING GROUP), at 6.45.—Annual General Meeting to be held at the Waldorf Hotel, Aldwych, London, W.C.2.

Lord Amulree: "A Historical Survey of Wage Adjustments".

GEOGRAPHICAL ASSOCIATION, April 26-29. Spring Conference to be held in Nottingham.

Official Publications Received

GREAT BRITAIN AND IRELAND

Post Office Publicity. By Sir Stephen Tallents. (The Post Office Green Papers, No. 8.) Pp. 24+12 plates. (London: H.M. Stationery Office.) 6d. net.

Annual Reports on the Progress of Chemistry for 1934. Vol. 31. Pp. 442. (London: Chemical Society.) 10s. 6d.

International Conference on Physics, London 1934. A Joint Conference organized by the International Union of Pure and Applied Physics and the Physical Society. Papers and Discussions. In 2 vols. Vol. 1: Nuclear Physics. Pp. viii+257. 10s. Vol. 2: The Solid State of Matter. Pp. viii+183. 10s. Reports on Symbols, Units and Nomenclature approved by the General Assembly of the Union at its Meeting in London on 5th October 1934. Pp. iv+40. 2s. 9d. (London: Physical Society.)

Association of British Chemical Manufacturers. Directory of British Fine Chemicals produced by Members of the Association. Pp. 62. (London: Association of British Chemical Manufacturers.)

Annual Report of the Council of the Yorkshire Philosophical Society for the Year 1934, presented to the Annual Meeting, February 11th, 1935. Pp. 51+6. (York: Yorkshire Philosophical Society.)

Department of Scientific and Industrial Research. The Investigation of Atmospheric Pollution: Report on Observations in the Year ended 31st March 1934. (Twentieth Report.) Pp. vii+108. (London: H.M. Stationery Office.) 5s. net.

Census of England and Wales, 1931. General Tables comprising Population, Institutions, Ages and Marital Conditions, Birthplace and Nationality, Welsh Language. Pp. ix+246. (London: H.M. Stationery Office.) 11s. net.

OTHER COUNTRIES

U.S. Department of the Interior: Geological Survey. Professional Paper 185-C: The Recognizable Species of the Green River Flora. By Roland W. Brown. (Shorter Contributions to General Geology, 1934-35.) Pp. ii+45-77+plates 8-15. 10 cents. Professional Paper 185-E: Miocene Plants from Idaho. By Edward Wilber Berry. (Shorter Contributions to General Geology, 1934-35.) Pp. ii+97-125+plates 19-24. 10 cents. (Washington, D.C.: Government Printing Office.)

The Imperial Council of Agricultural Research. Miscellaneous Bulletin No. 4: Host Plant Index of Indo-Ceylonese Coccidæ. By S. Ramachandran and Dr. T. V. Ramakrishna Ayyar. Pp. iii+113+x. (Delhi: Manager of Publications.) 1.10 rupees; 2s. 9d.

The Woody Plants of Natal and Zululand. By Dr. J. S. Henkel. Pp. xii+252. (Pietmaritzburg: Natal University College.)

Argeologische Navorsing van die Nasionale Museum, Bloemfontein. Deel 2, Stuk 1: Die Oorblyfsels van Buispoort en Braklaagte, Noordwes van Zeerust. Deur Dr. Ir. E. C. N. Van Hoepen en Dr. A. C. Hoffman. Pp. ii+25+12 plates. (Bloemfontein: Nasionale Museum.)

U.S. Department of Agriculture. Miscellaneous Publication No. 207: Raising Reindeer in Alaska. By Lawrence J. Palmer. Pp. ii+41. (Washington, D.C.: Government Printing Office.) 5 cents.

U.S. Department of the Interior: Office of Education. Bibliography No. 29: Good References on The Curriculum and Social Change. Compiled by Katherine M. Cook and Florence E. Reynolds. Pp. 10. Gratis. Bulletin, 1934, No. 12: Privately Controlled Higher Education in the United States. By Fred J. Kelly and Ella B. Ratcliffe. Pp. v+56. 10 cents. Bulletin, 1934, No. 18: High-School Clubs. By Maris M. Proffitt. Pp. v+64. 10 cents. Pamphlet No. 50: Public Education in the Virgin Islands. By Katherine M. Cook. Pp. viii+32. 10 cents. Vocational Education Bulletin, No. 177: Vocational Agriculture in relation to Economic and Social Adjustments; Report of Conference on the relation of Vocational Agricultural Education to Emergency and Long-Time Programs affecting Agriculture. Pp. xviii+67. 10 cents. (Washington, D.C.: Government Printing Office.)

Transactions of the San Diego Society of Natural History. Vol. 8, No. 5: Three New Species of Pinnixa from the Gulf of California. By Steve A. Glassell. Pp. 13-14. Vol. 8, No. 6: New Marine Mollusca from West Mexico, together with a List of Shells collected at Punta Penasco, Sonora, Mexico. By Herbert N. Lowe. Pp. 15-34+plates 1-4. Vol. 8, No. 7: New Species of Mollusks of the Genus Triphora. By Fred Baker and V. D. P. Spicer. Pp. 35-46+plate 5. Vol. 8, No. 8: New Trilobite Species from the Anthracolithic of Northern California, and Griffithides Conwayensis, a New Name for a Trilobite Species from the Atoka Formation of Arkansas. By Harry R. Wheeler. Pp. 47-58+plate 6. Vol. 8, No. 9: Revision of some California Species of Astrodapsis. By George L. Richards, Jr. Pp. 59-66+plate 7. (San Diego: Society of Natural History.)

India Meteorological Department: Scientific Notes. Vol. 6, No. 61: Evaporation in India calculated from other Meteorological Factors. By P. K. Raman and V. Satakopan. Pp. 52. 1.12 rupees; 3s. Vol. 6, No. 62: The Distribution of Temperature in the Upper Levels of a Depression originating in the Bay of Bengal during the Indian South-west Monsoon. By N. K. Sur. Pp. 53-56+2 plates. 5 annas; 6d. (Delhi: Manager of Publications.)

Smithsonian Miscellaneous Collections. Vol. 93, No. 3: New Earthworms from China, with Notes on the Synonymy of some Chinese Species of Drawida and Pheretima. By G. E. Gates. (Publication 3293.) Pp. 19. (Washington, D.C.: Smithsonian Institution.)

CATALOGUES

A Catalogue of Books in New Condition offered at Greatly Reduced Prices. (Catalogue 449.) Pp. 80. (Cambridge: W. Heffer and Sons, Ltd.)

The Gardener's Library: a Comprehensive List of Books on all Branches of Modern Horticulture and a Selection of the Early Literature. (New Series, No. 39.) Pp. 44. (London: Wheldon and Wesley, Ltd.)

Zeiss Microscopes and Accessories. (Mikro le.) 1934 edition. Pp. 158. (London: Carl Zeiss (London), Ltd.)