Aug. 15, 1537. Hailstones in Central Europe.—At Gottwick, Austria, men and beasts were killed by hail. At Bologna the hailstones were said to have weighed 28 pounds. As this weight would give them a diameter of more than nine inches, it must be regarded as greatly exaggerated.

Aug. 15, 1905. Thunderstorm over the West of England.—A thunderstorm of exceptional violence occurred over Devon and Somerset during the evening, accompanied by heavy rain. There was much damage by lightning, buildings being set on fire and many cattle killed, but there is no record of the loss of human life.

Aug. 16, 1664. Thunderstorm.—Pepys wrote under this date: "Wakened about two o'clock this morning with the sound of thunder, which lasted for an hour, with such continued lightnings, not flashes, but flames, that all the sky and ayre was light; and that for a great while, not a minute's space between new flames all the time; such a thing as I never did see nor could have believed had ever been in nature. . . . And that accompanied by such a storm of rain as I never heard in my life; . . . it seems it has been here and all up and down the countrie hereabouts the like tempest, Sir W. Batten saying much of the greatness thereof at Epsum."

Societies and Academies.

PARIS.

Academy of Sciences, June 11.—P. Villard: The reduction of soda by hydrogen. Caustic soda, heated in a current of hydrogen at 800°-900° C., gives sufficient sodium vapour to reverse the sodium lines and to cut off all the light from a sodium flame. This result cannot be due to dissociation, since at the same temperature the replacement of the hydrogen by nitrogen causes the sodium vapour to disappear.—**Louis Roy:** The propagation of waves on elastic surfaces with three parameters.—**Paul Vuillemin:** A new species, *Corethropsis Puntonii*.—**O. Borůvka:** The surfaces represented by spherical functions of the first species.—**Ch. Sadron:** The ferromagnetism of the alloys of nickel and chromium. The study of the magnetic properties of nichrome alloys has been made by Safranck. On the same specimens the author has studied the saturations at the absolute zero and the ferromagnetic Curie points.—**Léon Bertrand:** The Trias of the neighbourhood of Betchat and of Salies-du-Salat

June 16.—**Léon Lecornu:** Funicular surfaces.—**V. Grignard and J. Colonge:** The condensation of ketones. Extension of the classical method. The substitution of hydrochloric acid by hydrobromic and hydriodic acids gives higher yields, and some ketones which resist the condensing action of hydrochloric acid suffer condensation in the presence of hydrobromic acid.—**Léon Guillet and Marcel Ballay:** The influence of tempering on the electrical resistance and resistance to shearing of the silicon-aluminium alloys. The electrical resistance of pure aluminium.—**Jean Rey** was elected a member of the division of the applications of science to industry.—**L. Abélès:** The nomographic representation of analytical functions. Application to complex trigonometry.—**Mme. Julie Rózańska:** The continued decompositions of surfaces into Cantorian curves.—**André Roussel:** Functions the infinitesimal increase of which has a given expression.—**Marcel Winants:** Linear differential equation of the third order and the integral curve passing through three given points.—**M. Fekete:** The changes of sign of a continuous function in an interval.—**Vignaux:** A method of summation of divergent integrals.—**H. E. Bray:** Functions with finite deviation.—**P. J. Myrberg:** The existence of Green's function for a given plane domain.—**G. Maneff:** Gravitation and the energy at the zero.—**Al. Proca:** Dirac's equation.—**N. Stoyko:** The influence of the terms of the third and fourth orders in the use of E. Esclangon's method for the determination of the orbit of a star. Application to the trans-Neptunian body.—**Ernest Esclangon:** Remarks on the preceding note.—**Fernand Baldet:** The nucleus of the Schwassmann-Wachmann comet(1930*d*). The nucleus does not appear to have had a diameter much greater than 400 metres, and is at least as small as that of the Pons-Winnecke comet.—**L. Décombe:** The undulatory theory of quantic phenomena. New results.—**F. Holweck and P. Lejay:** A portable instrument for the rapid determination of gravity.—**H. Muraour and G. Aunis:** The agreement between calculated explosion pressures and experimental explosion pressures. The calculated explosion pressures, starting with the new specific heats of Nernst and Wohl, for the gaseous mixture obtained in the experiments, are in complete agreement with the experimental pressures corrected for cooling.—**R. Forrer and J. Schneider:** The production by annealing of two states of pure iron, stable at the ordinary temperature.—**Armand de Gramont and George Mabboux:** The comparison of piezoelectric quartz oscillating at slightly differing frequencies.—**L. Abonnenc:** The measurement of the magnetisation coefficient of aqueous solutions by the method of falling drops. The method has been applied to measure the diamagnetism of the halogen ions. The results are in good agreement with the values obtained by Hocart by a different method.—**A. Turpain and R. de Bony de Lavergne:** An ultramicroscope permitting the direct projection of ultramicroscopic tests and the Brownian motion.—**V. Fock:** The mechanics of the photons.—**F. Prevet:** The mode of action of boric acid on the phosphorescence of sulphides of zinc prepared by the explosion method. The use of boric acid in the preparation of phosphorescent zinc sulphide is known to increase the intensity and persistence of the phosphorescence. Attempts to replace boric acid by other substances have proved unsuccessful, and it is concluded that the boric anhydride acts by influencing the crystalline medium necessary for phosphorescence.—**R. Coustal:** Poisons and phosphorogens for phosphorescent zinc sulphide.—**E. Estanave:** Integral photographs obtained without objectives.—**Hubert Garrigue:** The passage of the continuous current in acetone.—**Georges Fournier:** A relation between the filiation capacity of radioactive atoms and the velocity of the α-rays which they emit.—**Augustin Boutaric and Mlle. Madeleine Roy:** The radioactivity of materials arising from old roofs. The radioactivity of substances exposed to the open air is not due to exposure to sun, but to contact with rain water. Rain water was collected on a roof and passed into a cistern containing a filter of sand and charcoal, the filtering material not being exposed to the sun: both the charcoal and the sand were clearly radioactive.—**W. Broniewski and J. Strasburger:** The structure of the copper-zinc alloys. The brasses were examined after long periods of annealing at 400° C. Curves are given showing the electrical conductivity, the temperature coefficient of the electrical resistance, the thermoelectric power with reference to lead and other physical properties. The compound CuZn appears on all the curves and there are indications of $CuZn_2$ and $CuZn_8$.—**H. Colin and A. Chaudun:** The complex between the enzyme and the products of hydrolysis during the diastatic inversion of sugar.—

Guichard, Clausmann, Billon and Lanthony: The hardness of cold-hardened and electrolytic nickel.—**G. Dupont and J. Allard**: The mechanism of the antoxygen action.—**H. Forestier**: The action of the magnetic field on the velocity of solution of iron in a solution of cupric chloride. The velocity increases rapidly with an increase in the strength of the magnetic field; with fields between 500 gauss and 4000 gauss the increase of velocity of solution is proportional to the strength of field. Above 4500 gauss the velocity of solution is independent of the magnetic field.—**Alfred Molnar**: New researches on the cold hardening of lead, tin, cadmium and zinc at different temperatures. A comparison of the hardening effects produced by slow and rapid extension. The latter presents all the characteristics of a cold-hardened metal.—**Jean Cournot and Jean Bary**: The treatment of siderurgical alloys with solutions of some metallic phosphates. A study of the effects of mixtures of various phosphates as regards the protection of mild steel against corrosion. Protection by phosphate of iron alone was unsatisfactory, the best results being obtained by using solutions of mixed phosphates, iron and zinc, or zinc and manganese.—**F. Taboury**: The action of sulphuric acid on mercury at the ordinary temperature. Sulphur dioxide is the only gaseous product and crystals of acid mercurous sulphate, Hg_2SO_4, H_2SO_4.—**Picon**: Mercury camphocarbonate and some derived mercurial products.—**Charles Combaluzier**: The limits of the Burdigalian deposits in Lower Provence.—**H. Derville**: Henriette marble, a reef constructed by calcareous Algæ.—**Yves Milon**: The presence of Globigerina limestones in the Bartonian of Sarthe.—**E. Huguenard, A. Magnan, and A. Planiol**: A method of measuring the turbulence of the atmosphere.—**Guilliermond, Dufrenoy, and Labrousse**: The germination of tobacco seeds in media containing neutral red: the coloration of the vacuome during the development of the seedlings.—**Mlle. Eudoxie Bachrach and Mme. Pillet**: The micro-incineration of diatoms without carapace.—**Aug. Chevalier**: The three periods of renewal of vegetation in Senegal.—**G. Nicolas and Mlle. Aggery**: A third example of generalised bacterial infection in plants.—**Marcel Chopin**: The additive mechanical properties of dough made of wheat flour.—**C. Vaney and A. Bonnet**: The phenomena of autotomy in *Spirographis Spallanzanii*.—**Jean Régnier and Guillaume Valette**: A study of the mode of fixation of cocaine hydrochloride on the nerve fibres. A comparison of the absorption of cocaine by animal charcoal and by nerve substance showed a close similarity as regards rapidity of fixation and shape of curves. These results indicate that cocaine is fixed on the nerve fibre by a normal process of adsorption.—**L. Lutz**: The soluble ferments secreted by the Hymenomycete fungi. The degradation of the ligneous material.—**M. Lemoigne and P. Monguillon**: The presence of acetylmethylcarbinol and of 2.3. butylene glycol in the higher plants. Formation during germination.—**Claude Fromageot and Mlle. M. Watremez**: Comparison between the buffering powers of glycocoll and glycylglycine.—**Radu Codreanu**: The nutrition and action on the host of *Symbiocladius rhithrogenæ*.

GENEVA.

Society of Physics and Natural History, June 19.—Leon W. Collet: Preliminary report on the geological expedition of Harvard University in the Canadian Rockies (1929). The Canadian Rockies, from their eastern border to Yellow Head Pass, are made up of seven 'blocks' thrust one over the other from west to east, and separated by 'clean cut thrusts' of the type of the Northwest Highlands of Scotland. The Athabasca valley, from the town of Jasper to the eastern border of the Rockies, follows an axis depression of the thrust masses. The quartzites forming the mountains to the west of Maligne lake, as far as the Tonkin valley, are of Lower Cambrian age and not of Mesozoic age. Ammonites found in the Jurassic black shales show that upper Lias and Bajocian are present in the interior of the Canadian Rockies in Jasper National Park.—**L. Reverdin**: The neolithic fauna of the station of Port Conty (St. Aubin, Neuchâtel) from material collected from 1928 to 1930. Two groups of deposits belonging to the old and middle neolithic yielded 273 and 73 specimens. These proved, from one group to the other, a variation from 70 to 50·8 per cent for the domestic species and from 30 to 49·2 per cent for the wild species.—**G. Tiercy**: The gravitational derivation of the solar rays and the thermal regime of the high plateaux. The author proposes a new theory capable of explaining the thermal advantage enjoyed by the high plateaux, especially the Asiatic plateau, as compared with other regions of the same latitude. The calculation allows the estimation of the order of magnitude of the age of the Asiatic protuberance, or 1400 millions, figures which agree with those based on radioactivity and relative to the time necessary for the terrestrial crust to have acquired its present chemical constitution starting with uranium and thorium.—**N. Danoz**: The free surface of the fluid stars. The author has applied Wavre's method to the study of the internal movements of the fluid stars, and has been able to establish the following: if the equator rotates more rapidly than the pole caps, the free surface is an ellipsoid compressed between the pole and the equator. In the contrary case, it will be an expanded ellipsoid.

ROME.

Royal National Academy of the Lincei, Mar. 16.—A. Angeli: Certain relationships between constitution and odour. Unlike the artificial musks (aromatic nitro-compounds) and violet ketones (ionone, etc.), the cyclic polymethylene carbonylic compounds described by Ruzicka, although having similar odours, are free from methyl groups. It is suggested that the presence in the molecules of these compounds of a large number of methylene groups may render possible deformations of the ring so as to produce lateral nodes able to act like methyl groups. Certain evidence in support of this view is advanced.—**A. Angeli and A. Polverini**: The oxidising power of diazohydrates and their analogies with nitrous acid. Reactions are described which justify the argument that the three molecules, O:O, (HON):O, and $(C_6H_5 \cdot N_2H)$:O, are analogous in structure and behaviour.—**A. Terracini**: The projective quasi-applicability of a surface on a plane.—**Luisa Pelosi**: Generalisation of a theorem of F. Neumann on the calculation of certain integrals.—**M. Calonghi**: The mean curvature of surfaces. It is shown how the consideration of geometric elements connected with a surface along an infinitesimal cycle leads naturally to the notion of mean curvature of the surface itself. The procedure approximates the mean curvature to the total curvature, the rigid connexion of which with the properties of the infinitesimal cycles traced in the surface is rendered evident by the theory of surface parallelism.—**G. Pfeiffer**: The integrals of S. Lie.—**G. Krall**: Point loads for rods with moment of inertia variable with discontinuity.—**W. Kusnetzoff**. The regularisation of the general problem of three bodies.—**G. Bargellini and Lydia Monti**: 2:6-Dibromophenetidine and 3:5-dibromophenetidine. Various derivatives of these two compounds have been prepared and compared.—**A. Baroni**: Diphenyl

polysulphides, sulphodiselenide, and selenodisulphide. The melting-points and densities (at 20° : 4°) of the various compounds described are: $(C_6H_5)_2S$, 62°, 1·353; $(C_6H_5)_2S_3$, 30°, 1·418; $(C_6H_5)_2Se_2$, 59°, 1·743; $(C_6H_5)_2S_2Se$, 50°-51°, 1·593; $(C_6H_5)_2Se_2S$, 55°, 1·873.—**S. Visco**: Hysteresis of electrical conductivity in colloidal solutions. The electrical conductivity of solutions of granular gelatine of various concentrations exhibits distinct hysteresis.—**Mario Betti**: Optical resolution of racemic aldehydes (1). By means of β-hydroxynaphthylphenylaminomethane, which combines readily with aldehydes to form highly stable, crystalline compounds, the racemic form of *p*-methoxyhydratropic aldehyde has been resolved into the two optical isomerides. Other aldehydes may be similarly resolved.—**G. Bini**: A new method for the identification and determination of nitrates in waters. Quinosulphonic acid gives with NO_3 ions a coloration varying from pale green to brown according to the concentration of the ions, and serves as a satisfactory reagent for the detection and determination of nitrates in water. It is less sensitive than, and hence preferable to, pyrogallolsulphonic acid.—**G. Checchia-Rispoli**: A case of metamerism in an exocystic echinoid.—**Fausta Bertolini**: Regeneration of the digestive apparatus in holothurians. The emission of the whole of the intestinal tube, leaving in position the first tract of the œsophagus and the last part of the rectum, united by the thin mesenteric lamina, with subsequent regeneration of the digestive system, has been observed in *Stichopus regalis*, and appears to be relatively more frequent with this species than with the genus *Holothuria*.—**G. Cannicci**: Contribution to the study of glutathione in Teleostei (2). The proportions and variations of glutathione in various species are described.—**G. Brunelli** and **N. Apolloni**: Certain characteristics of Mediterranean lagoon associations.—**V. Rivera**: The biological action of penetrating radiation (cosmic or ultra-γ rays) on the development of seeds of land vegetables. Penetrating radiation has not only no positive influence on the germination of the seeds of land plants, but even exerts a slight depressive action, retarding the onset of germination or slowing the growth of seedlings.—**Silvia Colla**: Variations in the oxygen content of the hydrostatic bladders of certain brown algæ. The results of experiments on *Fucus serratus L.* show that oxygen is accumulated in these bladders on exposure to light and is consumed or eliminated in the dark, so that the accumulation of oxygen is to be regarded as a photosynthetic effect. A parallel phenomenon was noted by Stiles and Langdon with a species of *Neurocystis*.

VIENNA.

Academy of Sciences, May 8.—**L. Haberlandt**: Researches on the heart-hormone in invertebrates. Experiments were made on the excised hearts of snails, of *Helix pomatia* in Innsbruck, of *Aplysia* in Naples. Isolated hearts were put into Ringer's solution and kept until spontaneous or mechanically excitable pulsations ceased in a time which varied from some hours to three days. Extract of muscle from the foot (with Ringer) produced no pulsation when added; extract of heart muscle proved a stimulant. Heart-hormone preparation from vertebrates also proved exciting even in extreme dilutions. Also adrenalin stimulated *Helix* hearts, and extract of heart from cattle stimulated *Aplysia*.—**F. Wessely** and **G. H. Moser**: Synthesis and constitution of scutellarine.—**L. Kober**: Structural elements of the Apennines in Calabria and Sicily and of the Atlas in Algeria.—**H. Gräven**: A method for determining uranium, thorium and potassium in hand specimens of minerals and rocks.

May 15.—**W. Knapp**: The action of *o*-phthalylchloride on the methyl ethers of *p*-bromo-phenol and of *p*-bromo-thio-phenol.—**C. Mayr** and **G. Burger**: Potentiometric titration using mercurous nitrate and sodium oxalate as titration solutions.—**P. Goldmark** and **F. Kammer**: Methods for measuring the mobilities of ions in gases.—**H. P. Cornelius** and **M. Furlani-Cornelius**: The Insubric line from Tessin to the Tonale pass.—**M. Radakovic**: Determinants that can be made symmetrical.—**F. Halla** and **E. Mehl**: Fibrous structure of plastic sulphur.—**F. Witt**: The distribution of radium emanation between the liquid and solid phases of water and of benzol. Radium emanation is occluded not absorbed by ice.—**J. Hoffmann**: Coloration of glasses and some minerals by β- and γ-rays. Lead glasses are recognisable by characteristic fluorescence in ultra-violet light. Neutral atoms of the alkalis, also Pb, Ba and Zn may be causes of colour.—**K. Marbach**: The disturbance of the equilibrium of radium B and radium C in preparations freed from traces of emanation.

WASHINGTON, D.C.

National Academy of Sciences (*Proc.*, Vol. 16, No. 4, April 15).—**Jan Schilt**: The velocities of *B*-type stars.—**C. R. Burnham**: Genetical and cytological studies of semisterility and related phenomena in maize. Two new types of semisterile maize have been found and examined.—**H. J. Muller** and **L. M. Mott-Smith**: Evidence that natural radioactivity is inadequate to explain the frequency of 'natural' mutations. As measure of the intensity of radiation, the ionisation per cubic centimetre per second in air was used. The mutation rate in untreated *Drosophila* is about 1 : 150 of the highest rate artificially induced, whereas the intensities of natural and artificial radiations are in the ratio of 1 : 200,000. Thus the natural mutation frequency is at least 1300 times as high as it would be if caused by radiation normally received by the flies.—**J. H. Hildebrand** and **J. M. Carter**: The influence on the ideal solution laws of the distribution of polarity within the molecule. Using the data for benzene with nitrobenzene, the three dinitrobenzenes and 1-3-5 trinitrobenzene, it appears that it is the number and polarity of the substituent groups rather than the electric moment of the whole molecule which determine deviations from Raoult's law.—**Wilder D. Bancroft** and **C. E. Barnett**: Pentavalent nitrogen in organic compounds. The conditions under which organic nitrogen will add on hydrogen chloride stoichiometrically are brought together in eight generalisations.—**Wilder D. Bancroft** and **Herbert L. Davis**: The tautomeric form of malic acid. Changes in optical rotation and anomalous dispersion of *l*-malic acid in solution are due to two tautomeric forms in dynamic equilibrium; the lævo-acid is ordinary malic acid and the dextro-acid contains an ethylene oxide oxygen linkage and two hydroxyl groups attached to the same carbon.—**J. L. Walsh**: On the overconvergence of sequences of polynomials of best approximation.—**H. S. Vandiver**: Summary of results and proofs on Fermat's last theorem (fifth paper).—**G. A. Miller**: Groups generated by two given groups.—**A. Adrian Albert**: (1) On the structure of pure Riemann matrices with non-commutative multiplication algebras.—(2) On direct products, cyclic division algebras, and pure Riemann matrices.—**Joseph W. Ellis**: The near infra-red absorption spectrum of calcite. Three new bands with wave-lengths shorter than 1·7μ are reported and doublet structure has been observed in most of the bands in this region.—**Richard C. Tolman**: The effect of the annihilation of matter on the wave-length of light from the nebulæ. It is assumed that there is a general

transformation of matter taking place throughout the universe at a rate necessary to account for the radiation from stellar objects; a non-static line element for the universe is derived mathematically and its implications examined.

Official Publications Received.

BRITISH.

Commonwealth Bureau of Census and Statistics, Canberra. Official Year Book of the Commonwealth of Australia. No. 22, 1929. Prepared under Instructions from the Minister of State for Home Affairs by Chas. H. Wickens. Editor: John Stonham. Pp. xxxii+1074. (Melbourne: H. J. Green.) 5s.

University College of Wales, Aberystwyth: Welsh Plant Breeding Station. Grazing and Manurial Trials on Permanent and Prepared Swards: and Factors affecting Seed Production of Red Clover. (Series H, No. 11, Seasons 1921–1929.) Pp. iii+91. (Aberystwyth.) 3s. 6d.

The Journal of the Institution of Electrical Engineers. Edited by P. F. Rowell. Vol. 68, No. 403, July. Pp. 801-944+xxxii. (London: E. and F. N. Spon, Ltd.) 10s. 6d.

Cambridge Observatory. Annual Report of the Observatory Syndicate, 1929 May 19–1930 May 18. Pp. 3. (Cambridge.)

Proceedings of the Malacological Society of London. Edited by R. Winckworth. Vol. 19, Part 2, July. Pp. 59-82. (London: Dulau and Co.) 10s. net.

The National Physical Laboratory. Report on the Physics Department for the Year 1929. (From the Report of the Laboratory for the Year 1929.) Pp. 58-94. (London H.M. Stationery Office.) 2s. net.

Leeds University: Department of Pathology and Bacteriology. Annual Report by Prof. Matthew J. Stewart and Prof. J. W. McLeod; with Abstract Report on Experimental Pathology and Cancer Research by Prof. R. D. Passey. Pp. 15. (Leeds.)

Research Council of Alberta. Report No. 23: Preliminary Soil Survey adjacent to the Peace River, Alberta, West of Dunvegan. Pp. iv+33+6 plates. (Edmonton: W. D. McLean.) 50 cents.

Report of the Director of the Royal Observatory, Hong Kong, for the Year 1929. Pp. 16. (Hong Kong.)

The North of Scotland College of Agriculture. Guide to Experiments and Demonstration Plots at Craibstone, 1930. Pp. xii+58. (Aberdeen.)

Transactions of the Royal Society of Edinburgh. Vol. 56, Part 3, No. 24: The Carboniferous Sediments of Kintyre. By Dr. William J. M'Callien and Robert B. Anderson. Pp. 599-619+1 plate. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.) 3s. 6d.

Transactions of the Optical Society. Vol. 31, No. 2, 1929–30. Pp. v+53-112. (London.) 10s.

University of Reading: the National Institute for Research in Dairying. Annual Report for the Year ending 31st July 1929. Pp. 87. (Reading.)

Department of Scientific and Industrial Research. Building Science Abstracts. Vol. 3 (New Series), No. 6, June. Abstracts Nos. 1122-1290. Pp. 197-235. (London: H.M. Stationery Office.) 9d. net.

Indian Journal of Physics, Vol. 4, Part 7, and Proceedings of the Indian Association for the Cultivation of Science, Vol. 13, Part 7. Conducted by Sir C. V. Raman. Pp. 541-589. (Calcutta.) 12 annas; 1s.

Air Ministry: Aeronautical Research Committee. Reports and Memoranda. No. 1290 (Ae. 439): The Equations of Motion of a Viscous Fluid in Tensor Notation. By C. N. H. Lock. (T. 2798, revd.) Pp. 28. 1s. 6d. net. No. 1306 (Ae. 446): Lateral Stability Calculations for the Bristol Fighter Aeroplane. By Dr. A. S. Halliday and C. H. Burge. (T. 2905.) Pp. 13+17 plates. 1s. net. (London: H.M. Stationery Office.)

The Scientific Proceedings of the Royal Dublin Society. Vol. 19 (N.S.), No. 40: The Nitration of substituted Diaryl Ethers:—Phenyl-p-tolyl Ether. By Joseph Reilly, P. J. Drumm and T. Gray. Pp. 461-465. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 6d.

FOREIGN.

R. Osservatorio Astrofisico di Catania. Annuario 1930. Pp. iv+50. (Catania.)

Koninklijk Nederlandsch Meteorologisch Instituut. No. 106a; Ergebnisse aerologischer Beobachtungen, 17, 1928. Pp. iv+41. 2.50 f. No. 108: Seismische Registrierungen in De Bilt, 15, 1927. Pp. ix+63. 1.00 f. (Amsterdam: Seyffardt's Boekhandel.)

Ministerio de Agricultura de la Nación, República Argentina. Memoria: correspondiente al ejercicio de 1928 presentada al Congreso de la Nación por el Ministro de Agricultura, Doctor Juan B. Fleitas. Pp. 105. (Buenos Aires.)

U.S. Department of Agriculture. Leaflet No. 61: English Sparrow Control. By E. R. Kalmbach. Pp. 8. 5 cents. Circular No. 117: The Asiatic Beetle, a Serious Pest in Lawns. By H. C. Hallock. Pp. 8. 5 cents. Circular No. 118: Calculating Waterfowl Abundance on the Basis of Banding Returns. By Frederick C. Lincoln. Pp. 4. 5 cents. (Washington, D.C.: Government Printing Office.)

Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. 82. Leeches (Hirudinea) from China, with Descriptions of New Species. By J. Percy Moore. Pp. 169-192+plates 7-8. (Philadelphia.)

Bulletin of the National Research Council. No. 75: Weather and Health; a Study of Daily Mortality in New York City. Prepared under the direction and with the advice of the Committee on the Atmosphere and Man, Division of Biology and Agriculture, National Research Council, by Ellsworth Huntington. Pp. 161. (Washington, D.C.: National Academy of Sciences.) 2 dollars.

Reprint and Circular Series of the National Research Council. No. 92: Report of the Committee on Sedimentation, 1928–1929. Pp. ii+122. 1 dollar. No. 93: Guide Leaflet for Amateur Archaeologists. Pp. 11. 25 cents. (Washington, D.C.: National Academy of Sciences.)

U.S. Department of Commerce: Bureau of Standards. Bureau of Standards Journal of Research. Vol. 4, No. 6, June. (R.P. Nos. 176-182.) Pp. 737-874. (Washington, D.C.: Government Printing Office.) 40 cents.

Smithsonian Institution: United States National Museum. Bulletin 76: Asteroidea of the North Pacific and adjacent Waters. By Prof. Walter Kenrick Fisher. Part 3: Forcipulata (concluded). Pp. iii+356+93 plates. (Washington, D.C.: Government Printing Office.) 1.40 dollars.

United States Department of the Interior: Geological Survey. Bulletin 813-B: The Chakachamna-Stony Region, Alaska. By Stephen R. Capps. (Mineral Resources of Alaska, 1928.) Pp. ii+97-123+2 plates. 10 cents. Water-Supply Paper 618: The Green River and its Utilization. By Ralf R. Woolley. Pp. xv+456+35 plates. 1.25 dollars. Water-Supply Paper 621: Surface Water Supply of the United States, 1926. Part 1: North Atlantic Slope Drainage Basins. Pp. vi+274. 30 cents. (Washington, D.C.: Government Printing Office.)

Bulletin of the Earthquake Research Institute, Tokyo Imperial University. Vol. 8, Part 2, June. Pp. 91-319+11 plates. (Tokyo: Iwanami Shoten.) 2.70 yen.

Journal of the College of Agriculture, Imperial University of Tokyo. Vol. 10, No. 5, March 31st. Pp. 329-388. (Tokyo: Maruzen Co., Ltd.) 2.00 yen.

Statens Meteorologisk-Hydrografiska Anstalt. Årsbok, 9, 1927. iv, Meteorologiska iakttagelser i Sverige, Band 69. Pp. x+177. 7.00 kr. Årsbok, 11, 1929. ii: Nederbörden i Sverige. Pp. 160. 5.00 kr. (Stockholm.)

Jahresbericht der Hamburger Sternwarte in Bergedorf für das Jahr 1929. Pp. 30+8 Tafeln. (Bergedorf.)

CATALOGUE.

South and Central America: a Catalogue of Books, Pamphlets, Engravings, Maps and Original Drawings relating to Latin America with the British Colonies of Falkland Is., Honduras and Guiana. (Catalogue 528.) Pp. 80. (London: Francis Edwards, Ltd.)

Diary of Societies.

CONGRESS.

AUGUST 7 TO 15.

INTERNATIONAL HORTICULTURAL CONGRESS (in London).—*Papers to be read on Aug.* 8, 11, *and* 13:—

Prof. Priestley: Vegetative Reproduction from the Standpoint of Plant Anatomy.
Dr. Van der Lek: Anatomical Structure of Woody Plants in Relation to Vegetative Propagation.
Dr. R. Salaman: Vegetative Mutations.
Prof. E. Baur: Production of Mutations by External Stimulus.
Dr. F. E. Denny: The Excitation of Dormant Buds under External Influence.
John Innes Horticultural Institution: Graft Hybrids.
John Innes Horticultural Institution: Vegetative Production of Polyploids.
John Innes Horticultural Institution: Sterility.
G. E. Yerkes: Raising Root Stocks from Seed.
Dr. C. G. Dahl: Root Stocks from Seeds of known Parents.
Dr. R. J. D. Graham and L. B. Stewart: Special Methods of Practical Utility in the Vegetative Propagation of Plants.
Miss Mary E. Reid: The Influence of the Nutrient Conditions of Seeds and Cuttings upon the Development of Roots.
Prof. P. W. Zimmerman: Factors influencing Root Growth of Cuttings.
Dr. A. B. Stout: The Inter-relations between Vegetative Propagation and Seed Reproduction.
N. Esbjerg: Varieties grown on own Roots.
Prof. N. I. Vavilov: The Wild Progenitors of Fruit Trees in Turkestan and in the Caucasus.
R. G. Hatton: The Development of a Research Programme around the 'Build Up' of a Fruit Plant.
Dr. H. Faes: Vine Propagation.
L. Ravaz: The Influence of American Stock on French Vines.
W. G. Freeman: Vegetative Propagation of Cacao and the West Indies Citrus.
Prof. T. Tanaka and Y. Tanaka: Propagation of Citrus Fruits in Japan.
Prof. H. J. Webber: Studies on Rootstock Reactions in Citrus.
Dr. F. F. Halma: The Propagation of Citrus by Cuttings.
Dr. H. P. Traub: The Ripening Process in Fruits, with special reference to the Fig and the Grapefruit.
Prof. B. T. P. Barker: The Fruit Tree Complex in Relation to Environment: Some current Investigations at Long Ashton.
Prof. N. E. Hansen: Fruit Stocks where Mercury Freezes.
Prof. E. C. Auchter: American Experiments in Propagating Deciduous Fruit Trees by Stem and Root Cuttings.
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