

Science News a Century Ago

Cholera Statistics for 1831-32

On June 15, 1835, Sir David Barry read a paper to the Statistical Society "On the Statistics of Epidemic Cholera as it occurred in Great Britain between the 26th of October 1831 and 31st of December 1832". Sir David divided his paper into two main parts dealing respectively with the progress of cholera in Great Britain and in the Metropolis. The disease, he said, prevailed as an epidemic in London during the ten months February 9 until December 31, the whole number of new cases being 11,020 and of deaths 5,275. The total numbers of new cases and deaths, for Great Britain and the Metropolis, were 80,203 and 30,924 respectively. In concluding his paper, he made observations on the quarantine regulations, in the course of which he said that the history of cholera by no means justified the apprehension which re-enacted the old expensive plague-precaution system of delaying the landing or sale of cargoes, until the promulgation of a paper by the Central Board of Health in January 1832 entitled "Reasons founded on Authentic Facts in the History of Spasmodic Cholera, for establishing a Specific Code of Sanitary Restrictions for that Disease, considered independently of Plague, Yellow Fever, and other Infectious Maladies" put a period to the evil. England having thus taken the initiative in the amendment of the quarantine laws, considerable mitigation very soon followed in other countries, with great relief to trade and without compromising the security of the public health.

Sir David Barry (1780-1835) had been employed by the Government to investigate the yellow fever epidemic at Gibraltar in 1828; and, on the outbreak of the cholera epidemic, was sent to Russia to report on it.

Metamorphoses in the Crustacea

Among several papers submitted to the Royal Society on June 18, 1835, was one "On the Supposed Existence of Metamorphoses in the Crustacea" by J. O. Westwood, secretary to the Entomological Society. A report of this paper in the *Philosophical Magazine* said: "The author refers the principal modifications of form which occur during the progressive development of animals to the three following heads: 1st, that of an animal produced from the egg in the form which it is destined to retain through life, its only change consisting of a series of moultings of the outer envelope, attended merely by an increase in size, and not by the acquisition of new organs; 2ndly, when the animal at its exclusion from the egg, exhibits the form which it continues to possess, subject to a series of moultings, during several of the last of which certain new organs are gradually developed; and 3rdly, when the form of the animal at its exclusion from the egg, is totally different from that under which it appears at the later periods of its existence; such change of form taking place during two or three of its general moultings, and consisting, not only in the variation of the body, but also a complete change in the nutritive and digestive systems and in the acquisition of various new organs. This last phenomenon peculiarly characterizes what is termed a metamorphosis . . ."

Balloon Excursion Extraordinary

Under the above title, the *Mechanics' Magazine* of June 20, 1835, quoted the following extract from the *New York Journal of Commerce* relating to a balloon flight a short time before. "Mr. Clayton, a volunteer aeronaut in the West, made an ascent from Cincinatti, and was observed to pass off in a south-easterly direction. Nothing more was seen of him for a number of days and great anxiety was felt for his safety. At length, nine days after his departure, he returned to Cincinatti, having made the most extraordinary excursion on record. He did not, indeed, ascend as high as a number have done before him, but the distance he sailed is beyond all precedent, being not less than 350 miles. All this was accomplished in 9½ hours, which is at the rate of nearly 37 miles an hour. The greatest height to which he ascended was about 2½ miles." Commenting on this, the *Mechanics' Magazine* said: "The longest aerial voyage previously on record was, we believe, that of M. Garnerin in 1807, who travelled 300 miles in 7½ hours".

Societies and Academies

DUBLIN

Royal Dublin Society, April 30. J. H. ORTON: The biological condition of re-laid oysters. Exceptionally high mortality had occurred amongst these oysters, but no disease was recognised, and their poor physiological condition and the presence of 'chambering' in the shells made it probable that the mortality was due to abnormal weather conditions. G. T. PYNE: A simple titrametric method for the approximate determination of milk phosphates. This method is suitable for the estimation of soluble and of total phosphates. J. BAXLEY BUTLER, J. CARROLL and MISS KIRBY: The toxicity of native pyrethrum. Experiments show that pyrethrum prepared from Irish-grown plants approximates in toxicity to that obtained from plants grown in England, and exceeds that from most other sources.

Royal Irish Academy, May 13. K. G. EMELÉUS: The Faraday dark space. New evidence is brought forward to show: (a) that resonance radiation emitted from the negative glow and travelling in straight lines is of importance in fixing the length of the Faraday dark space; (b) that there is a secondary electron emission from surfaces in the Faraday dark space. JAMES SMALL and ISOBEL K. JOHNSTON: Mathematical evolution in Compositæ, including proof of normal death of species. Udney Yule's mathematical theory of evolution is confirmed in detail, but modified by the old-age death of species, not according to chance, after a limited lifetime. The ages of the tribes of Compositæ, calculated from Yule's formulæ, in doubling periods, when plotted against a time scale in million years, follow an exponential curve, the BAT curve, with the formula $k + nd = T.2^n$. For Compositæ, grasses and Angiosperms in general, $k = 0.6$, $d = 0.9$, $T = 1.09375$ million years. The BAT curve is based upon observed points for Compositæ, but it applies to Mrs. Reid's percentage extinctions for the Pliocene deposits and to Lyell's shell curve which goes back to Palæocene, with for molluscs an 11 million-year doubling period and a 66 million-year lifetime for species. It applies also with simplicity to the evolutionary history of species-number in Angiosperms back to Jurassic, and of the

grasses back to the Upper Cretaceous. The principles have been checked by Yule on snakes and lizards, and two groups of insects, so that the mathematical forms are generally applicable to both plants and animals.

EDINBURGH

Royal Society, May 13. J. A. KITCHING: Ecology of intertidal rock surfaces on the coast of Argyll. The general and detailed distribution of various of the commoner animals and seaweeds on the coast of Argyll are described, with special reference to the effects of wave action, angle of slope of rock surface, mutual interrelations, and other factors. Various Fucoids are limited by mechanical shock of the waves. Certain barnacles require wave action, but are restricted by the rubbing of algal fronds. Various organisms which on wave-beaten coasts are confined to deeper water extend up to the low-tide mark in very sheltered localities. Fucoid fronds protect certain organisms from desiccation, and overhanging rocks act similarly. L. J. WILLS: Rare and new ostracoderm fishes from the Downtonian of Shropshire. These include one specimen provisionally referred to *Ctenaspis*, Kiaer, new to Britain; *Anglaspis macculloughi*, A. S. Woodward, a rare form, but in this instance abundant and in perfect preservation, which displays many details of the boney structure and impressions of the gill-pouches and brain-case; *Tesseraspis tessellata*, gen. et sp. nov., a large form with polygonal tuberculated plates fused into a shield; *Phialaspis*, gen. nov., *symondsii*, Lank., a large shield with smooth central area and tuberculated border. The last two are probably Drepanaspids. IAN SANDEMAN: Mathematical representation of the energy levels of the secondary spectrum of hydrogen (3). Using the observational data of C. R. Jeppesen, the molecular constants of the ground state of H_2 are calculated on the basis of J. L. Dunham's theoretical work. A somewhat similar analysis is carried out for the ground state of H_2^+ . Energy values are calculated by the method of G. Jaffé, and a simple mathematical formula is found to fit these values in the neighbourhood of the position of equilibrium. The molecular constants of the two states are compared.

PARIS

Academy of Sciences, April 29 (*C.R.*, 200, 1501-1552). EMILE COTTON: Certain singular integrals. JEAN CABANNES and JEAN DUFAY: The Vegard-Kaplan bands in the spectrum of the night sky. Discussion of the results of observations made between 1933 and 1935 at the Pic du Midi, Montpellier, Saint-Genis-Laval and Forcalquier. LUCIEN DANIEL: Achenes of deficient appearance in the dandelion. GEORGES BOULIGAND: The conditions of variance of propositions. CARLOS E. DIEULEFAIT: Correlation *au sens des modes*. J. GERONIMUS. Some inequalities for polynomials the first coefficients of which are given. V. AVAKUMOVIĆ: An extension of the condition of convergence of inverse theorems of summability. SZOLEM MANDELBROJT: A problem of Carleman concerning analytical functions. SIMON STOILOW: Remarks on the definition of the nearly analytical functions of Lavrentieff. AMÉDÉE GUILLET: A viscosimeter formed by a sphere in rotation in a fluid. LOUIS LEPRINCE-RINGUET: The sudden changes of velocity and direction shown by the trajectories of electrons of great energy. RADU TITEICA: The absorption spectra of the alkaline

bichromates. ANDRÉ CHARRIOU and Mlle. SUZANNE VALETTE: The influence of water on the sensibility of photographic emulsions. Rapid emulsions become less sensitive after absorbing water. The experiments show the necessity of protecting photographic apparatus used in aerial photography against large temperature variations. HORIA HULUBEI: The use of X-rays for showing the deformation of a crystalline network under the action of an electric field. Proof of the variation of the reticular constants of quartz and mica under the action of a static electric field. VICTOR HENRI and C. H. CARTWRIGHT: The absorption spectrum of benzene at a high temperature. LOUIS BOUGHET: The properties of a zinc of exceptional purity compared with those of other specimens of zinc. The pure specimen was obtained by fractional distillation in a vacuum and contained less than 0.0001 per cent of impurities. The extra pure zinc is more resistant to hydrochloric and sulphuric acids than ordinary zincs, but is more rapidly attacked by nitric acid. MAURICE CHAIX: The ultra-violet absorption spectra of some arylthionium salts. HENRI TRICHÉ: An arrangement for quantitative spectrum analysis. CHARLES COURTOT and Tsé-Yei-Tung: Critical study of the action of thionyl chloride on phenol. M. BURGAUD: Some recent magnetic observations made in the south and south-west of China. PIERRE LAUMONT and MARC SIMONET: The genetic and cytological study of the tendroid forms which appear in the descendants of the intergeneric hybrid *Egilops triuncialis* × *Triticum durum*. MICHEL A. MACHEBEUF, MMES. GEORGETTE LÉVY and MARGUERITE FAURE: Researches on the chemical nature of the lipid haptene fixing agent of tubercle bacilli killed by heat. ALEXANDRE BESREDKA and LUDWIK GROSS: The local immunisation of the skin against the sarcoma of mice.

AMSTERDAM

Royal Academy of Sciences (*Proc.*, 38, No. 4, March 30, 1935). H. J. JORDAN: Tonic contraction and tonic retention of the contraction in the muscles of *Aplysia limacina* under the influence of alternating temperatures. M. W. WOERDEMAN: Experimental analysis of some phenomena of fertilisation and cleavage. Experiments on the artificially inseminated eggs of *Paracentrotus lividus* and *Echinus miliaris*. W. H. KEESOM and K. W. TACONIS: An X-ray goniometer for the investigation of the crystal structures of solidified gases. Apparatus for the production and examination of the crystals of solidified gases at low temperatures. Data for ethylene. W. H. KEESOM and J. HAANTJES: The vapour pressure of neon at liquid hydrogen temperatures. Vapour pressures between 15° and 20.4° K. and their representation by the theoretical formula. E. COHEN, W. A. T. COHEN-DE MEESTER and A. K. W. A. VAN LIESHOUT: The influence of mechanical deformation on the velocity of transformation of polymorphous metals. Rolling, drawing or bending of white tin wires enormously increases the velocity of transformation into grey tin. J. H. C. MERCKEL: Surface tension of homologous series. Properties such as surface tension and adsorption show a linear or quadratic dependence on the length of the carbon chain. A. HERRMANN: Linear differential systems and matrix equations. C. VISSER: The angular derivative of univalent functions. C. VISSER: Boundary correlation in conformal transformation. H. FREUDENTHAL: The R_n -adic development of

spaces and groups. H. G. BUNGENBERG DE JONG and P. v. D. LINDE: Coacervate sols and their relation to the theory of lyophilic colloidal stability. In a narrow range of concentration of added alcohol, glycogen sols show marked opalescence. The observed phenomena are explicable in terms of the small electrical charge and its non-uniform distribution on the sol particles. H. G. BUNGENBERG DE JONG: Oriented coacervates and their bearing upon the formation of colloid-crystals. The coacervates from sols of *Amylum solubile* sometimes coalesce with the observance of preferred orientations. These oriented coacervates consist of thin hexagonal plates the properties of which were determined. H. J. C. TENDELOO: Researches on adsorption electrodes. (2) Mineral electrodes. Investigation of mica (muscovite) as an electrode in determining ion exchange. A. H. W. ATEN, JR.: Adsorption and ion exchange. Deduction of the Langmuir adsorption isotherm allowing for the interaction between ions. J. STUURMAN: Oxidation velocities of some unsaturated hydrocarbons with peracetic acid in acetic acid solution. A. DE BUCK and N. H. SWELLENGREBEL: The salivary glands in hibernating *Anopheles maculipennis* var. *messee* and semi-hibernating *Anopheles maculipennis* var. *atroparvus*. The paper describes a means of identifying the two species in the presence of one another and shows that they behave differently, one taking blood and the other fasting in the same environment. H. GERTH: The distribution and evolution of the larger Foraminifera in the tertiary sediments. Java, Western India, South Western France and the West Indies are compared with regard to the appearance and evolution of the larger Foraminifera in the tertiary.

CAPE TOWN

Royal Society of South Africa, March 20. I. DONEN: Studies in deciduous fruit. (2) The effect of time and picking on chemical changes in store of the Kelsey and Gaviota plums. W. E. ISAAC: The organic matter content and carbon-nitrogen ratio of South African soils of the winter rainfall area. The C/N ratios of the soils studied range from 11.2:1 to 22.9:1, with an average for the twelve soils of 16.6:1, and evidence is presented for regarding the C/N ratio of the winter rainfall region soils of the South West Cape as being of the order of 15:1. Within a rainfall locality, the C/N ratio widens with increasing organic matter content. In passing from soil to subsoil, with one exception (Krom River farm), there is a marked decrease of organic carbon and nitrogen and thus of organic matter, and this is accompanied by a narrowing of the C/N ratio. C. VON BONDE: Reproduction, embryology and metamorphosis of the Cape crawfish, *Jasus lalandii*. The embryology is worked out in detail for the first time and all the stages from the time of the extrusion of the eggs and their attachment to the pleopods of the female's abdomen worked out. The nauplius stage, which is here passed in the egg, appears 35 days after the eggs are laid. A new stage in the larval development, the 'pre-naupliosoma', is described, as this stage was actually observed immediately the eggshells burst. The various stages in the subsequent metamorphosis are described, the experiments having been conducted in a specially constructed hatching box. An attempt is made to determine the rate of growth of the crawfish from the time the first true crawfish form was observed up to the time of sexual maturity.

GENEVA

Society of Physics and Natural History, March 21. E. HELD and M. K. PONS: A pure auxogen action obtained by heating the urine of a pregnant woman. M. A. MOSZKOWSKA: A luteinising principle of the posterior lobe of the hypophysis. The author has proved that alkaline extracts of the posterior lobes of the hypophysis of the ox exert a special luteinising action on the ovaries of guinea pigs. It affects the granular tissue exclusively, thus differentiating it from the endocrine actions of extracts of the pre-hypophysis. E. GUYENOT and J. MEIERHANS: The swim bladder and pneumatic canal in the Cyprinidae. The author has undertaken the study of the function of the pneumatic canal of the air bladder of the phytostome fishes. This canal forms the normal method for rejecting the excess gas in the bladder when the external pressure is gradually lowered. DON ZIMMET and E. FROMMEL: The action of a nucleosidic preparation (lacarnol) on the nervous excitability and conductivity. DON ZIMMET, B. GHINSBERG and L. JANCU: The influence of a hormonoid preparation (padutine) on the development of the egg of *Rana temporaria*.

LENINGRAD

Academy of Sciences (C.R., 1, Nos. 7-8, 1935). L. PONTRJAGIN: The Betti numbers of compact Lie groups. G. APPELROT: Contribution to the problem of real continuous solutions of differential equations of the simplified fundamental form. A. POPOV: Certain definite integrals. A. MARKOV: Quenching method as applied to the photometry of astronomical objects which are just visible. V. NUMEROV: General formulae for the development of perturbing forces in the calculation of absolute perturbations in polar co-ordinates. N. SHISHAKOV: (1) Structure of the surface of oxidised iron. (2) Powder method in electronography. D. IWANENKO: Electrodynamics and the Dirac theory of holes. N. DOBROTIN, I. FRANK and P. CHERENKOV: Observations of cosmic rays with the Wilson camera on the Elbrus. L. TUMERMAN: Dependence of the fluorescence spectra of solutions on the viscosity of the solvent. V. LEVSHIN: Connexion between the spectra of absorption and of luminescence in weak solutions of dye-stuffs. A. TEREININ: Internal recombination during photodissociation of polyatomic molecules. K. ABLEZOVA and S. ROGINSKIJ (1) A new type of promotor. (2) Hydration by the adsorbed atoms of hydrogen. W. SHULEJKIN: Active films on the surface of the sea. I. KNUNJANZ: Condensation of aliphatic oxides with α -aminopyridene. B. MOLDAVSKIJ and S. LIVSHITS: Isomerism of carbohydrates. (1) Chlorination of isomers of hexane and octane by means of antimony pentachloride as a method for their quantitative determination. J. SYRKIN and V. VASILJEV: Velocity of reaction and the quantity of catalyser. M. USANOVICH: Anomalous electrical conductivity. K. SUKHORUKOV, E. KLING and D. KLJACHKO: Formation and distribution of bios. N. PROKOPENKO: Finds of rock-forming orthites in the rocks of Central Asia. I. ZASLAVSKIJ: Contraction and chemical structure of the terrestrial globe. V. BARANOV and S. KRECHMER: Application of photographic plates with a thick emulsion layer to the study of the distribution of radioactive elements in natural objects. S. KRAEVOJ: Experimental production of mutations in *Pisum*. (1) Lasting chromosome modification produced by X-rays. (2) Permanent semi-sterility caused by X-rays. DONTCHO

KOSTOFF: Conjugation between morphologically different chromosomes in *Nicotiana* species hybrids. **M. GAVRILOVA**: Reversibility of the vernalisation process. **L. SERGEEV**: Salt resistance of wheats and its dependence on variety. **S. SOLDATENKOV**: Artificial ripening of subtropical fruit by means of alcohol and ethylene. **I. SHAROV**: Problem of regeneration of the epidermis in planarians. **A. SVETOVIDOV** and **G. EREMEJEV**: The European and the Amur bitterling (*Rhodeus sericeus*). **A. LISOVSKIJ**: Orthitic granites from Karamazar.

Forthcoming Events

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

Sunday, June 16

BRITISH MUSEUM (NATURAL HISTORY), at 3 and 4.30. Capt. Guy Dollman: "British Mammals".*

Monday, June 17

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—J. M. Wordie: "An Expedition to the Canadian Pacific".

Tuesday, June 18

ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.30.—(at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1).—Dr. H. K. Fry: "Native Life in Central Australia" (Film).

Thursday, June 20

ROYAL SOCIETY, at 4.30.—Prof. Otto Loewi: "Problems connected with the Principle of Humoral Transmissions of Nervous Impulses" (Ferrier Lecture).

ST. MARY'S HOSPITAL, LONDON, at 5.—Dr. Joseph Needham: "Problems of Chemical Embryology".*

Official Publications Received

GREAT BRITAIN AND IRELAND

The National Physical Laboratory. Report for the Year 1934. Pp. iv+260+16 plates. (London: H.M. Stationery Office.) 13s. net. Development Commission. Twenty-fourth Report of the Development Commissioners for the Year ended the 31st March 1934. Pp. 122. (London: H.M. Stationery Office.) 2s. net.

Amgueddfa Genedlaethol Cymru (National Museum of Wales). Some Aspects of Forestry in Wales: a Handbook to a Temporary Exhibition based on the Tree Collections in the Department of Botany, May 1–September 28, 1935. By H. A. Hyde. Pp. 22. (Cardiff: National Museum of Wales.) 3d.

The Kent Incorporated Society for Promoting Experiments in Horticulture. Annual Report (Twenty-second Year) 1934: East Malling Research Station, Kent, 1st January 1934 to 31st December 1934. Pp. 264+22 plates. Free to Associate Members; 4s. to non-members. Misc. Publication H. 23: Supplementary Annual Report (Twenty-second Year): General Development and Activities, East Malling Research Station, Kent, 1st January 1934 to 31st December 1934. Pp. 22. (East Malling: East Malling Research Station.)

The Carnegie United Kingdom Trust. Twenty-first Annual Report, January–December 1934, approved by the Trustees at their General Meeting held on Friday, March 8th, 1935. Pp. vi+88+6 plates. (Dunfermline: Carnegie United Kingdom Trust.)

The National Council for Civil Liberties. Annual Report and Balance Sheet 1934. Pp. 36. (London: National Council for Civil Liberties.)

Air Ministry: Aeronautical Research Committee: Reports and Memoranda. No. 1573 (T. 3407 a, b, and c): On the Calculation of Stresses in Braced Frameworks. 5: The General Solution for a Cylindrical Tube of Regular Polygonal Cross Section. By R. V. Southwell and J. B. B. Owen. Pp. 85+2 plates. (London: H.M. Stationery Office.) 4s. net.

The Lister Institute of Preventive Medicine. Report of the Governing Body, 1935. Pp. 35. (London: Lister Institute.)

Hull Museum Publications. No. 182: Excavations at the Roman Fort at Brough-on-Humber. By Philip Corder. Pp. 38. 1s. No. 183: What to see in the Hull Museums. By Thomas Sheppard. Pp. 16. 1d. No. 184: Record of Additions. By Thomas Sheppard. Pp. 36. (Hull: Hull Museum.)

Report by the Hydrographer of the Navy on the Surveys carried out by H.M. Naval Surveying Service and on the Work of the Hydrographic Department for the Year 1934. Pp. viii. (London: Admiralty.)

Ninth Report of the Commissioners for the Exhibition of 1851 to the Rt. Hon. Sir John Gilmour. Pp. 43. (London: Royal Commissioners for the Exhibition of 1851.)

Technical Publications of the International Tin Research and Development Council. Series A, No. 17: Factors Influencing the Formation and Structure of Hot dipped Tin Coatings. By E. J. Daniels. Pp. 10. (London: International Tin Research and Development Council.) Free.

OTHER COUNTRIES

U.S. Department of Commerce: National Bureau of Standards. Circular of the National Bureau of Standards, C 406: Standard Time throughout the World. Pp. 24. (Washington, D.C.: Government Printing Office.) 5 cents.

Smithsonian Institution. Explorations and Field-Work of the Smithsonian Institution in 1934. (Publication 3300.) Pp. iv+88. Smithsonian Miscellaneous Collections. Vol. 93, No. 9: New Species of Tertiary Chelostome Bryozoa from Victoria, Australia, by Ferdinand Canu and Ray S. Bassler. (Publication 3302.) Pp. 54+9 plates. (Washington, D.C.: Smithsonian Institution.)

Brooklyn Botanic Garden Record. Vol. 24, No. 3: Books and Manuscripts illustrating the History of Botany. Pp. 159–194. (Brooklyn, N.Y.: Brooklyn Botanic Garden.)

Egyptian Government: Ministry of Public Works. Annual Report for the Year 1928–1929. Part 1. Pp. ii+59+26 plates. (Cairo: Government Press.) 30 P.T.

Ministry of Agriculture, Egypt: Technical and Scientific Service. Bulletin No. 144: The Rust of Cowpea. Part 1: The Disease. By Dr. Tewfik Fahmy. Pp. iii+10+9 plates. (Cairo: Government Press.) 5 P.T.

Publications of the Dominion Observatory, Ottawa. Vol. 12: Bibliography of Seismology. No. 4, October, November, December, 1934. By Ernest A. Hodgson. Pp. 67–94. (Ottawa: King's Printer.) 25 cents.

Tanganyika Territory: Geological Survey Department. Bulletin No. 7: Outline of the Geology of the Musoma District; being a Preliminary Geological Survey of the Musoma Goldfields, with the exception of the Nigoti and Ikoma Areas. By G. M. Stockley. Pp. ii+64+7 plates. (Dar es Salaam: Government Printer.) 4s.

Amani Memoirs. A Synecological Study of the Usambara, Tanganyika Territory, with particular reference to Birds. By R. E. Moreau. Pp. 43+2 plates. (Amani: East African Agricultural Research Station.)

Det Kongelige Departement for Handel, Sjøfart, Industri, Håndverk og Fiskeri. Norges Svalbard- og Ishavsundersøkelser. Meddelelse Nr. 26: Some Echinoderms from Franz Josef Land, Victoriaøya and Hopen, collected on the Norwegian Scientific Expedition 1930. By James A. Greig. Pp. 10. Skrifter om Svalbard og Ishavet, Nr. 54: Bibliographie des ouvrages norvégiens relatifs au Groenland (Y compris les ouvrages islandais antérieurs à l'an 1814.). Par Hroar Varddal. Pp. 119. 12.00 kr. (Oslo: Jacob Dybwad.)

Bergens Museums Årbok, 1934. Heft 2, Naturvidenskapelig rekke, Nr. 9–14. Pp. 60+90+10+16+32+28. (Bergen: A/s John Griegs Boktrykkeri.)

Union of South Africa. Report of the South African Museum for the Year ended 31st December 1934. Pp. 17. (Pretoria: Government Printer.)

National Geographic Society. Contributed Technical Papers. Stratosphere Series, No. 1: The National Geographic Society—U.S. Army Air Corps Stratosphere Flight of 1934 in the Balloon Explorer. Pp. 122. (Washington, D.C.: National Geographic Society.)

U.S. Department of the Interior: Geological Survey. Bulletin 851: The Book Cliffs Coal Field in Garfield and Mesa Counties, Colorado. By Charles E. Erdmann. Pp. vi+150+21 plates. 35 cents. Professional Paper 179: Origin of the Copper Deposits of the Ducktown Type in the Southern Appalachian Region. By Clarence S. Ross. Pp. v+165+44 plates. 45 cents. Professional Paper 185–B: Paleozoic Formations of the Mosquito Range, Colorado. By J. Harlan Johnson. (Shorter Contributions to General Geology, 1934–35.) Pp. ii+15–44+7 plates. 10 cents. (Washington, D.C.: Government Printing Office.)

U.S. Department of Agriculture. Technical Bulletin No. 471: Chemical Studies of Infertile Soils derived from Rocks high in Magnesium and generally high in Chromium and Nickel. By W. O. Robinson, Glen Edgington and H. G. Byers. Pp. 29. (Washington, D.C.: Government Printing Office.) 5 cents.

Mémoires de Musée Royal d'Histoire Naturelle de Belgique. No. 63: Beiträge zur Kenntnis Tertiärer Sirenen. 1: Die Eozänen Sirenen des Mittelmeergebietes; 2: Die Sirenen des Belgischen Tertiärs. Von Otto Sickenberg. Pp. 352+11 plates. No. 64: Die Plistozaenen Baeren Belgiens. Teil 1: Die Baeren von Hastiere. Von Prof. Dr. Kurt Ehrenberg. Pp. 126+13 plates. No. 65: Contribution à l'étude des Echinoïdes du Frasnien de la Belgique. Par Eug. Mailheux. Pp. 16+2 plates. No. 66: L'Aérolithe du Hainaut. Par Dr. M. Lecompte. Pp. 39+3 plates. Hors Série. Résultats scientifiques du Voyage aux Indes Orientales Néerlandaises de LL. AA. RR. le Prince et la Princesse Léopold de Belgique. Publiés par V. Van Straelen. Vol. 3, Fasc. 15: Crustacea Brachyura. By Isabella Gordon. Pp. 78. Vol. 3, Fasc. 16: Rhizocéphales (Supplément), par H. Boschma; Stomatopod Larvæ, by M. V. Lebour. Pp. 17. (Bruxelles.)

CATALOGUES

Oertling British Precision Balances and Weights. Pp. 27. (London: J. Oertling, Ltd.)

Catalogue of recently purchased Botanical Books, including some interesting items from the Library of the late Miss Willmott, and many on Flowers and Flower Gardens, Floras, Gardening, etc. (No. 237.) Pp. 20. (London: Dulau and Co., Ltd.)

Technical Brochure No. 2: Shell-Wild-Barfield Quenching Oils. Pp. 20. (London: G. W. B. Electric Furnaces, Ltd.)

Apparatus for Radiology: High Tension Transformer Units. (Publication No. A/35.) Pp. 18. (London: Newton and Wright, Ltd.)

Holiday Photography. Pp. 20. (London: Burroughs Wellcome and Co.)