

and Paddington, from the 18th August to the 11th October, 1834", in which he gave some particulars of the defects which had occurred in those steam vehicles, and the difficulties which had arisen from the bad state of the roads. "I have up to this time," he said, "carried nearly 4,000 passengers in perfect safety, and I am happy to say that the Jehus of the road get more friendly and reconciled to us; and as it is my intention to employ steady coach drivers as steersmen the sooner this feeling is fully developed the better. Why should there be the least ill-will? What difference can it make, whether they drive horses or

"Sweep o'er the hills in the glory of steam'."

Societies and Academies

PARIS

Academy of Sciences, September 3 (*C.R.*, 199, 545-560). K. ZAREMBA: An extension of the idea of the differential equation. ROLF NEVANLINNA: A general principle of analysis. ED. LE DANOIS and L. BEAUGÉ: The relief of the edge of the continental plateau to the west of the entrance to the English Channel. A chart of the western entrance to the Channel is reproduced showing the extreme complexity of the relief of the continental edge. The hydrographical work upon which this chart is based was carried out with the Marti self-recording sounding apparatus, supplemented and confirmed by the Langevin-Florisson apparatus. QUIRINO MAJORANA: A new interference apparatus. This consists of a slit and a prism of very small angle, about 1° : the author calls it the monoprism and outlines some of its applications. JEAN RATELADE: The rhythmical precipitation of silver chromate in "Cellophane". CHARLES COURTOT and JOSEPH FRENKIEL: The phenyltolyl and ditolylsulphinones.

September 10 (*C.R.*, 199, 561-592). CHARLES RICHET: Anaphylaxy in therapeutics. Medical and therapeutic treatments ought to be brought into relation with toxic actions of which they are only the first stage. Certain observations have proved that the repetition of a dose originally inactive has a therapeutic effect. HENRI ADAD: Researches on surfaces several times encircled. CHARLES PLATRIER: The small elliptical vibratory movements of the most general homogeneous material medium. M. DODERO: The preparation of cerium silicide and lanthanum silicide by igneous electrolysis. The cerium silicide $CeSi_2$ can be obtained by the electrolysis of small quantities of cerium oxide in baths of calcium silicate, at relatively low temperatures ($1,000^\circ C.$). Substitution of the cerium oxide by lanthanum oxide gives the silicide $LaSi_2$, not hitherto described. MME. ANNE JOFFÉ and A. JOFFÉ: The spectral distribution of the photoelectric effect in cuprous oxide. From the observations of the author and of other workers it is concluded that the photoelectric effect of cuprous oxide or of selenium is due to the reduction of resistance produced by the illumination of the thin arresting layer. E. DUCHEMIN: The magnetic susceptibility of some hydrates of magnesium sulphate and of some salts of the magnesium series. Measurements of magnetic susceptibility lead to the conclusion that the salts $MgSO_4$, H_2O and $MgSO_4 \cdot K_2SO_4$, are unstable complex compounds in the solid state. The first of these remains a complex

compound on hydration but the latter is converted by addition of water to molecular combination. M. BOBTELSKY and B. KIRSON: Reaction of complex salts of copper on the decomposition of hydrogen peroxide. ED. CHAUVENET and Mlle. J. BOULANGER: The combinations of zirconyl iodide and the alkaline iodides. From the results of a thermochemical study the existence of the following compounds is deduced, $ZrOI_2 \cdot KI$, $2ZrOI_2 \cdot RbI$, $2ZrOI_2 \cdot CsI$, and $2ZrOI_2 \cdot NH_4I$. There was no evidence of the formation of similar compounds with lithium and sodium iodides. PAUL BASTIEN: The properties of sublimed calcium. A comparison of the properties of resublimed calcium (99.3 per cent calcium) with two commercial specimens (98.6 and 93 per cent). ROBERT DELAVAILLANT: The mechanism of oxidation of alloys of magnesium and of calcium at a high temperature. PIERRE LAURENT: The use of the specific inductive capacity in the study of reactions in organic solution. ROGER PERROT: The action of nitrosyl chloride on some aromatic nitriles. RAYMOND-HAMET and L. MILLAT: A new alkaloid from *Mitragyna*, mitrinermine. The bark from *Mitragyna inermis* is used by certain tribes in tropical Africa as a febrifuge. A crystalline alkaloid has been extracted from this bark, of the composition $C_{22}H_{28}N_2O_4$. P. ZÉPHIROFF and MME. N. DOBROVOLSKAIA-ZAVADSKAIA: A liposoluble oestrogenic substance isolated from spontaneous mammary tumours of mice.

CAPE TOWN

Royal Society of South Africa, June 20. A. OGG, E. N. GRINDLEY and B. GOTSMAN: Diurnal and secular variations of the earth's magnetic field at Cape Town. In a former communication (*Min. Proc.*, October 18, 1933), the monthly means of the declination and the secular variation ($+4.2'$) for August 1923-33 were given. The mean variation from seven such determinations extending to February 1933-34 gives for all days of the month a value of $+3.8'$ (that is, to the east). This determination that the secular change of declination in this latitude is of the order of $+4$ is of importance since magnetic tables gives the value $+10$ for the epoch 1925. A Fourier analysis of the declination referred to meridian $18^\circ 30' E.$ gives a good agreement between corresponding months of the year. From the above data the secular variation of the horizontal intensity is -97 gamma, probably the largest secular variation at any point on the earth's surface between the latitudes $60^\circ N.$ and $60^\circ S.$ R. S. ADAMSON: The vegetation and flora of Robben Island. I. DONEN: Studies in deciduous fruit: the effect of time of picking on the keeping quality of plums, with especial reference to the internal browning of the Kelsey plum. Plums were chosen from four orchards differing in soil, climate and cultural treatment, kept at $34^\circ-36^\circ F.$ for 30 days and at room temperature for four or twelve days, and percentage breakdown recorded. Kelsey plums in store exhibited two types of breakdown: internal and invasive browning. The extent of browning is associated with the amount of skin colour of the plum on picking. For export, they should be picked with 5-8 per cent colour and should not be kept in store for periods much longer than 30 days.

GENEVA

Society of Physics and Natural History, June 21. R. WAVRE: Fourier's integrals and the representation of certain multiform harmonic functions. R. MORTIER:

The oxidation of cod liver oil and a rapid method for determining the antioxygen action of various compounds. A. LIENGME and NICOLE: A new micro-organism pathogenic to man: *Bacillus cysticus fragilis*. The authors have isolated from the urine of a man suffering from slight cystitis a new micro-organism distinguished by various characters from those at present known. A. LIENGME and MLE. PIQUET: Study on the interferometry of Hirsch. Researches on the presence of a non-specific power of concentration. Researches on the presence of a non-specific power of concentration of the opzims (non-specific value of Durupt) (1). By exhaustion of the power of fermentation of the serum. A first series of experiments tends to show that there does not exist a non-specific power of concentration of the serum by the opzim. A. LIENGME and GOUDET: The proportion of the blood groups at Geneva. Statistics based on 1,000 cases. Group O, 40.2 per cent; group A, 48.9 per cent; group B, 7.9 per cent; group AB, 3 per cent. The formula of the blood groups of the Geneva population is nearer to that of France, Belgium and especially Portugal than to that of Germany and even German Switzerland. F. WYSS-CHODAT: (1) Studies on the bacteriophage. Is the bacteriophage of Hérelle a living organism? Result of the study of the flocculation of the bacteriophage and of its sensitivity to some volatile antiseptic solvents. (2) Concerning the food value of milk. J. BUFFLE: A new character of glacier-fed rivers based on the periodicity of the proportion of dissolved matter in the waters of these rivers. Remarks on the proportions of dissolved matter in the waters of the Arve in 1933. CH. E. GUYE: Some properties of the layers of molecular dipoles.

LENINGRAD

Academy of Sciences (C.R., n.s., 2, No. 7). B. HOSTINSKY: A functional equation considered by Chapman and by Kolmogoroff. R. KUZMIN: Roots of the function $\zeta(s)$ of Riemann. N. KOSHLIAKOV: Some integral representations of the square of Riemann's function. V. LEVSHIN: On the connexion between the absorption and luminescence spectra in concentrated solutions of colouring matters. R. JAANUS and V. DROZDZHINA: The state of the cerium atom inside the metallic lattice. The authors suggest that in cerium metal there exist either one or three 'free' electrons per atom. M. KATZNELSON and I. KNUNIANC: β -quinolyazo- $\alpha\alpha_1$ -diaminopyridine and its derivatives. V. SADIKOV and D. MALUGA: Autoclave splitting of blood albumin with 2 per cent phosphoric acid (1). Isolation of cycloleucyl-leucyproline from ether extract. It has been determined by analyses of the copper salts that the cyclopeptide $C_{17}H_{29}N_3O_3$ gives on splitting two parts of leucine and one part of proline and is therefore a cyclopeptide cycloleucyl-leucyproline. Its structure is given. P. LEBEDEV: Geochemistry of manganese in Western Siberia. The scheme of migration of manganese may be represented as follows. Manganese in pyroxenes and ore formations: gabbro \rightarrow bivalent manganese in magnetites of iron ore bodies \rightarrow manganese in the zones of segregation. The last stage of the possible history of manganese compounds seems to be connected with the genesis of quartzite-breccia type of manganese ores. V. KOLESNIKOV: On the Sarmatian fauna in Bulgaria. A. GUBIN: The distribution of bee-keeping in the U.S.S.R. as related to climate. The regions where

bee-keeping thrives have 500 mm. or more of annual precipitation, though bee-keeping is practised also in areas with 300-500 mm. precipitation. The northern limit depends on the length of winter, and there are scarcely any bees where rivers remain frozen for more than 180 days a year. G. LINDBERG: Description of a new genus and species *Gobiodonella macrops* (Gobiidae, Pisces) from Misaki, Japan.

ROME

Royal National Academy of the Lincei, May 20. G. A. CROCCO: The 'focus' of a biplane. A method is given for determining the focus of a biplane, this being defined as the point of application of the resultant of the increments of the aerodynamic forces on the two wings. A. DI LEGGE: Observations of the horizontal diameter of the sun at the Royal Observatory at Campidoglio during 1901-10. The mean of the values obtained by three observers during this decade is 961.39 (semi-diameter). The mean for the period 1874-1910 is 961.18", which agrees exactly with the value deduced by Auwers from the observations made at Greenwich during 33 years. V. NOBILE: Utilisation of spectroscopic determinations of the radial velocity in the study of the perturbed motion of stellar systems. O. CHISINI: A theorem of the existence of multiple planes (1). N. SPAMPINATO: A real algebra of four units. R. CACCIOPOLI: A general theorem on the functions of two complex variables. O. PYLARINOS: The movement of a material point on a fixed conical surface. U. BARBIERI: Astronomical geodetic station at Monte Vesco in July 1930. S. FRANCHETTI: The phenomenon of fusion in relation to a new equation of state and to the lattice structure of solids (1). G. ZANOTELLI: The paramagnetic rotation in a variable magnetic field. The behaviour of the paramagnetic part of the Faraday effect in a variable field has been studied by the method of Beams and Allison (1927). G. R. LEVI and M. TABELT: Fibrous structure in ionic lattices (2). The temperature conditions in which AgCl and AgBr give fibrous structures orientated according to (100) and (111) respectively are established, and an explanation is suggested for the variation of behaviour with the temperature. The breaking stress for the (111) orientation is much greater than that for the (100) orientation. V. PUNTONI and N. FAVIA: Loss of virulence of the tubercle bacillus resulting from association with *Bacillus tuberculophilus*. Virulent tubercular strains lose their pathogenic activity when kept in contact with *B. tuberculophilus* on a glycerine-potato medium for 1-2 years. This loss is stable and permanent, as it persists after repeated passages of the organism through sensitive animals. V. CARMINATI: Cariometric determinations on the liver of a tumour-bearing rat on a thymus diet (3). O. VERONA: Spontaneous cultures of the cellulositic aerobe, *Cytophaga Winogradskii*, n. sp. This organism appeared on unsterilised filter-paper cultures. N. SOSTER: Presence of a body of oleaginous appearance in the epidermal cells of the leaves of *Haworthia cymbiformis*. This substance, observed earlier by Guillermond in leaves of *Iris germanica*, seems to contain a phenolic derivative, and possibly flavone compounds. D. MENARINI: Differentiation of the woody elements in leguminous plants. G. AMANTEA and V. FAMILANI: Further observations on persistent beri-beri phenomena due to deprivation of the antineuritic B_1 factor.

Forthcoming Events

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

Saturday, October 20

BRITISH PSYCHOLOGICAL SOCIETY, at 3—(at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1). Symposium on: "Speech Training".

Sunday, October 21

BRITISH MUSEUM (NATURAL HISTORY), at 3 and 4.30.—Capt. Guy Dolman: "Lemurs, Monkeys, and Apes".*

Tuesday, October 23

UNIVERSITY OF LEEDS, at 5.15.—Lord Rutherford: "The Synthesis of Elements".*

Thursday, October 25

CHADWICK PUBLIC LECTURE, at 5.30—(at the Royal Society of Tropical Medicine and Hygiene, 26 Portland Place, W.1). Prof. D. B. Blacklock: "Sanitation in Rural Areas in the Tropics and Sub-Tropics, with special reference to Housing".*

INSTITUTION OF ELECTRICAL ENGINEERS, at 6.—Prof. W. M. Thornton: Inaugural Address.

UNIVERSITY COLLEGE, LONDON, at 6.—Dr. Pryn's Hopkins: "Current Events regarded Psychologically" (succeeding lecture on November 1).*

Friday, October 26

ROYAL ASTRONOMICAL SOCIETY, at 4.30.—Geophysical discussion on "Planetary Atmospheres" to be opened by the Rev. T. E. R. Phillips, and continued by Sir Gilbert Walker, B. M. Peek, Dr. Harold Jeffreys and Mr. F. J. Hargreaves.

INSTITUTION OF MECHANICAL ENGINEERS, at 6.—Sir Frederick Keeble: "The Green Plant as Agricultural Engineer" (Thomas Hawksley Lecture).

INSTITUTION OF CHEMICAL ENGINEERS, at 6.30—(at the Institution of Civil Engineers).—Prof. C. H. Desch: "The Influence of Texture on the Chemical Resistance of Materials".*

SOCIETY OF CHEMICAL INDUSTRY (NEWCASTLE SECTION), at 6.30—(at Armstrong College, Newcastle-upon-Tyne). Prof. A. J. Allmand: "Some Aspects of Photochemical Change".

Official Publications Received

GREAT BRITAIN AND IRELAND

Economic Advisory Council: Committee on Locust Control. Sixth Report: Review of the present Locust Outbreak in Africa and Western Asia and of the Investigations carried out since 1929, and a Note on the General Programme of Further Investigations. (Cmd. 4692.) Pp. 55. (London: H.M. Stationery Office.) 1s. net.

Department of Scientific and Industrial Research. Report of the Building Research Board, with the Report of the Director of Building Research for the Year 1933. Pp. x+139+11 plates. (London: H.M. Stationery Office.) 2s. 6d. net.

The National Advisory Councils for Juvenile Employment (England and Wales, and Scotland). Joint Report on the Organisation and Development of the Vocational Guidance Service in Great Britain. Pp. 34. (London: H.M. Stationery Office.) 6d. net.

Air Ministry: Aeronautical Research Committee: Reports and Memoranda. No. 1555 (T. 3447): Fluid Flow in Rough Pipes. By A. Fage. Pp. 11+10 plates. 1s. net. No. 1558 (T. 3483): An Experimental Study of the Stalling of Wings, Aeronautics Laboratory, Cambridge. Pp. 21+12 plates. 1s. 3d. net. No. 1593 (S. 180): Effect of Wind on the Take-off of Seaplanes. By E. T. Jones. Pp. 14+9 plates. 1s. net. (London: H.M. Stationery Office.)

Annals of the Cape Observatory. Vol. 13, Part 4: Observations of Major Planets made with the Heliumeter at the Royal Observatory, Cape of Good Hope, during the Years 1922 to 1931 under the direction of Dr. H. Spencer Jones. Pp. iv+115. (London: H.M. Stationery Office.) 8s. net.

British Museum and British Museum (Natural History). Annual Report of the General Progress of the Museums for the Year 1933: with a Return of the number of Persons admitted to the Museums, and a Statement of the Principal Objects added to the Collection. Pp. 20. (London: H.M. Stationery Office.) 4d. net.

OTHER COUNTRIES

Bulletin of the American Museum of Natural History. Vol. 66, Art. 4: The American Museum Congo Expedition Manatee and other Recent Manatees. By Robert T. Hatt. Pp. 533-566+plate 27. Vol. 66, Art. 5: New and Rare Cuban and Haitian Terrestrial Isopoda. By Lee Boone. Pp. 567-598. Vol. 66, Art. 6: Studies on the Organs of Reproduction in the Nudibranchiate Mollusks. By Leslie A. Chambers. Pp. 599-641+plates 28-31. Vol. 66, Art. 7: The Pangolins and Aard-Varks collected by the American Museum Congo Expedition. By Robert T. Hatt. Pp. 643-672+plates 32-39. (New York City.) Zoologica: Scientific Contributions of the New York Zoological Society. Vol. 12, No. 10: Clearing and Dyeing Fish for Bone Study. By Gloria Hollister. Pp. 89-101. (New York City.) Technical Books of 1933: a Selection. Compiled by Donald Hendry. Twenty-sixth Issue. Pp. 28. (Brooklyn, N.Y.: Pratt Institute Free Library.)

Chinese Materia Medica. By Bernard E. Read. 7: Dragon and Snake Drugs. (Published by the Peking Natural History Bulletin.) Pp. 66+6 plates. (Peiping: The French Bookstore.) 1.50 dollars. Proceedings of the American Academy of Arts and Sciences. Vol. 69, No. 7: The Volumes of Unit Mass of Liquid Water and their Correlation as a Function of Pressure and Temperature. Part 3: Steam Research Program. By Leighton B. Smith and Frederick G. Keyes. Pp. 285-314. Vol. 69, No. 8: Contribution from the Department of Biology and Public Health, Massachusetts Institute of Technology, No. 29: The Microbiology of the Upper Air, I. By Bernard E. Proctor. Pp. 315-340. (Boston, Mass.)

Publications of the Observatory of the University of Michigan. Vol. 6, No. 4: A Short-Lived Solar Disturbance. By R. M. Petrie and Robert R. McMath. Pp. 43-44+1 plate. Vol. 6, No. 5: The Variable Radial Velocity of the Star, B.D.+56° 2617 (A). By W. Carl Rufus. Pp. 45-57. (Ann Arbor, Mich.)

Memoirs of the Faculty of Science and Agriculture, Taihoku Imperial University. Vol. 10, No. 4: Beiträge zur Geometrie der Kreise und Kugeln. 9: Einige Anwendungen der Kreis- und Kugelgeometrie. Von Sôji Matsumura. Pp. 81-174. (Tôkyô: Maruzen Co., Ltd.)

Imperial Council of Agricultural Research. Miscellaneous Bulletin No. 1: List of Publications on Indian Entomology, 1930. Compiled by the Imperial Entomologist, Pusa. Pp. ii+45. (Delhi: Manager of Publications.) 14 annas; 1s. 6d.

Field Museum of Natural History: Department of Botany. North American Trees: Guide to Charles F. Millspaugh Hall. By Prof. Samuel J. Record. Pp. 119. (Chicago.) 50 cents.

U.S. Department of Agriculture. Farmers' Bulletin No. 1729: Machinery for Dusting Cotton. By R. C. Gaines and D. A. Isler. Pp. ii+14. 5 cents. Circular No. 326: Protecting Plants in the Home Yard from Injury by the Japanese Beetle. By W. E. Fleming, F. W. Metzger and M. R. Osburn. Pp. 14. 5 cents. (Washington, D.C.: Government Printing Office.)

Carnegie Institution of Washington. Catalogue of Publications. Pp. xlv+131. (Washington, D.C.: Carnegie Institution.)

Rubber Research Institute of Malaya. Bulletin No. 5: Variations in the Composition of Latex from Clone and Seedling Rubber. By Dr. J. L. Wiltshire. Pp. v+61. 1 dollar. Planting Manual No. 6: The Uses and Control of Natural Undergrowth on Rubber Estates. By W. B. Haines. Pp. iii+23+20 plates. (Kuala Lumpur.) 1 dollar.

Federated Malay States. Report on Forest Administration for the Year 1933. Pp. 89. (Kuala Lumpur: Director of Forestry.)

Government of India: Meteorological Department. Magnetic, Meteorological and Seismographic Observations made at the Government Observatories, Bombay and Alibag, in the Year 1932, under the direction of Dr. S. K. Banerji and Dr. B. N. Banerji. Pp. xiv+135+5 plates. (Delhi: Manager of Publications.) 13.14 rupees; 12s. 6d.

The Carlsberg Foundation's Oceanographical Expedition round the World, 1928-30, and previous Dana-Expeditions under the Leadership of the late Prof. Johannes Schmidt. Dana-Report No. 1: Introduction to the Reports from the Carlsberg Foundation's Oceanographical Expedition round the World, 1928-30. Pp. 130+8 plates. (Copenhagen: C. A. Reitzels Forlag; London: Oxford University Press.) 16s.

Egyptian Government: Ministry of Public Works. Annual Report for 1924-1925. Part 1. Pp. xi+153. 20 P.T. Part 2. Pp. xi+236. 20 P.T. Annual Report for the Year 1925-1926. Part 1. Pp. xiii+178. 20 P.T. Part 2. Pp. xi+230. 20 P.T. (Cairo: Government Press.)

Union of South Africa: Department of Commerce and Industries: Fisheries and Marine Biological Survey Division. Investigational Report No. 3: Occurrence of Sulphides in certain Areas of the Sea Bottom on the South African Coast. By W. J. Copenhagen. Pp. 18+2 plates. (Pretoria: Government Printer.)

South Australia: Department of Mines. Mining Review for the Half-Year ended December 31st, 1933. (No. 59.) Pp. 90+3 plates. (Adelaide: Government Printer.)

Norges Svalbard- og Ishavs-undersøkelser. Meddelelse Nr. 25: Norges Svalbard- og Ishavs-undersøkelser Ekspedisjoner til Nordøst-Grønland i årene 1931-1933—Isfjord fyr og radiostasjon, Svalbard. Av Anders K. Orvin. Pp. 31. Skrifter om Svalbard og Ishavet. No. 14: Tidal Observations in the Arctic. By Rolf Kjær and J. E. Fjeldstad. Pp. 29. 6.00 kr. Nr. 62: Vascular Plants from Northern Svalbard, with Remarks on the Vegetation in North-East Land. By P. F. Scholander. Pp. 155. 15.00 kr. Nr. 63: A Contribution to the Archaeology of North-East Greenland. By Søren Richter. Pp. 149. 25.00 kr. (Oslo.)

Cattle in the Tropics. By Prof. R. Cecil Wood. Pp. iv+42+4 plates. (Trinidad: Government Printing Office.) 2s.

CATALOGUES

The Goliath Tube. Pp. 8. (London: Cuthbert Andrews.) Collecting Apparatus for Botany, Entomology, Pond Life, Geology, etc. (Catalogue C, eighth edition.) Pp. 48. (Manchester: Flatters and Garnett, Ltd.) Research Chemicals Price List. Pp. 4. (London: L. Light and Co.)