

zones of the Rhine valley. The interpretation of the results of magnetic surveys requires a knowledge of the magnetic susceptibility of the underlying minerals, and these are frequently lacking. The magnetic susceptibility of over forty specimens from the Rhine valley are given.—R. Esnault-Pelterie: The law of the variation of the density of the atmosphere as a function of the height.—M. Bridel, C. Charaux, and G. Rabate: Amelarioside, a new glucoside from the bark of *Amelanchier vulgaris*.—Lucien Daniel: The formation of thylles in grafted plants.—Mme. L. Randoin and R. Lecoq: The water soluble vitamins of group B. The probable existence of a thermostable and alkali stable factor necessary to life.—Georges Bourguignon and André Walter: Technical simplifications in the measurement of chronaxy in man with condensers. Description of the apparatus.—A. Gourvitch: Specific dynamic action in the cockroach.—Marcel Avel: Castration in *Lumbricus* does not prevent the evolution of the secondary sexual characters, anatomical and physiological.—G. Guittoneau: A spore-forming bacillus acting as a lactic ferment at high temperatures. No lactic organism hitherto described possesses a notable activity above 55° C. The organism now described, named *Thermobacillus tarbellicus*, multiplies most rapidly at 68° C., and survives exposure to a temperature of 100° C. for half an hour.—G. Marinisco: The rôle of autolysis in the pathogeny of Charcot's disease.

## GENEVA.

Society of Physics and Natural History, May 24.—Arnold Pictet and Mlle. Ferrero. Heredity in the tufted guinea-pig. Dissociable conditional and localisation factors. The authors have proved the production of two types by crossing tufted guinea-pigs with smooth guinea-pigs. These types follow Mendel's law.—R. Wavre: The rigorous solution of the problem of figures of equilibrium. Starting with data more general than hitherto, the author gives a simpler demonstration of the impossibility of a distribution in homothetic surfaces of layers of equal density of a heterogeneous fluid in rotation.—E. Rod and G. Tiercy: Note on the rate of the chronometer *Nm* of the Observatory of Geneva. The authors have carried out a series of observations which show that the rate of this chronometer, during two months, remains between +1.01 seconds and +1.32 seconds. The pressure effect is normal: some anomalies appear to arise from accidental temperature variations.—E. Joukowsky: The cementation of the quaternary gravels. A working hypothesis. The author applies the well-known fact of the reduction in the solubility of calcium carbonate in the presence of carbon dioxide when the temperature is raised between 0° C. and 50° C., and admits that cold waters have, other conditions remaining the same, a greater incrusting power than warm waters. He shows that the cementation, in a given spot, in the peripheral portions of a glacier, should be stronger during its retreat than during its advance.

## LENINGRAD.

Academy of Sciences (*Comptes rendus*, No. 7).—N. G. Chetaiev: The equations of Poincaré.—A. Tsvetkov: The spontaneous movements of *Paramecium caudatum*. Quantitative studies on movements of *Paramecium* show that the movements are due to some disturbances of intracellular chemical equilibrium.—L. Berg: The origin of northern elements in the fauna of the Caspian Sea. The Caspian fauna includes a series of northern forms, like *Stenodus leucichthys*, gull., *Limnocalanus grimaldi* de Guerne, *Chiridothea entomon caspia* Sars, etc. Hypotheses offered by previous authors are analysed, and

it is concluded that these northern forms reached the Caspian Sea by way of the Volga, the basin of which has been, during the postglacial period, in connexion with a large lake basin adjoining the Baltic Sea.—B. Gorodkov: The work done by the expedition of the Academy to the sources of the River Gyda (Yeniseisk Province). A preliminary account of the expedition, which has done some geographical, botanical, zoological, and ethnographical work in the regions hitherto unexplored.

*Comptes rendus*, No. 8.—K. Sapozhnikova: Respiration of wheat seeds in ionised air. Results of the experiments indicate that ionised air exercised an inhibitory action on the respiration of seed, and the inhibition is due to the presence of free ions not only of oxygen, but also of nitrogen and of other gases of the air.—S. Arcybyshev and J. Parfianovich: The radio-activity of springs and minerals in the vicinity of the River Sludanka. Determinations of radio-activity of natural waters and minerals.—K. Matvejev: Tungsten deposits in the Southern Ural. A mineralogical and chemical study of the deposits.—L. Sturm and T. Simakova: Microbiological examination of some specimens of sulphur from the Crimea and Turkestan. Specimens of sulphur from various deposits showed different bacteriological characteristics. In some of these only bacteria oxidising sulphur were found; in others, desulphurating bacteria were also present.

## SYDNEY.

Royal Society of New South Wales, June 6.—A. R. Penfold: The chemistry of Western Australian sandalwood oil (Part 1). Although it has been proved equivalent, if not superior, to the East Indian oil in pharmacology, the chemical composition of Australian sandalwood oil has been the subject of much controversy during recent years. It is very complex in composition, much more so than the East Indian. Various sesquiterpene alcohols, which constitute 95 per cent of the oil, have been identified and a simple colour reaction for distinguishing the two types of oils devised.

## VIENNA.

Academy of Sciences, May 10.—W. Leithe: The natural rotation of polarised light by optically active bases (1). The influence of the solvent on the rotation of *d*-*a*-pipercolin and its chlorohydrate.—K. Menger: The metrics of Hilbert's space.—O. Dischendorfer and E. Nesitka: Nitrated *m*s-phenyl-dinaphtho-pyranes (3). Condensation of aldehydes with phenols.—O. Richter: Sodium, a necessary nutrient element for a marine aerophilic luminous bacterium. Sodium chloride has a double task, nutrient and osmotic. The minimum quantity of sodium chloride to be added to a stock solution of peptone and to fulfil both tasks is about 0.5 per cent, the maximum 5 per cent, the optimum 2.3 per cent. But other sodium salts or salts containing minute traces of sodium will do. Sodium is essential, sodium nitrate being the most effective sodium salt.

## Official Publications Received.

## BRITISH.

Journal of the Society for the Preservation of the Fauna of the Empire. New Series, Part 8. Pp. 137. (London: H. F. and G. Witherby.) 3s. 6d.  
Transactions of the Royal Society of Edinburgh. Vol. 56, Part 1, No. 1: The Igneous Intrusions between St. Andrews and Loch Leven. By Dr. Frederick Walker and John Irving. Pp. 17+1 plate. 2s. 6d. Vol. 56, Part 1, No. 2: Size in relation to Internal Morphology. No. 3: The Vascular System of Roots. By Dr. Claude W. Wardlaw. Pp. 19-55. 4s. 6d. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.)  
The Journal of the Royal Anthropological Institute of Great Britain and Ireland. Vol. 58, January to June, 1928. Pp. 303+24 plates. (London.) 15s. net.

Transactions of the Optical Society. Vol. 29, No. 4. Pp. 149-196. (London.) 10s.

Department of Scientific and Industrial Research. The Investigation of Atmospheric Pollution. Report on Observations in the Year ending March 31st, 1927. Thirteenth Report. Pp. iv+54. (London: H.M. Stationery Office.) 6s. 6d. net.

Memoirs of the Geological Survey of India. *Paleontologia Indica* New Series. Vol. 10, Memoir No. 3: Les couches à *Cardita beaumonti*, Par Prof. Henri Douville. Pp. ii+25+4 planches. 2.12 rupees; 5s. Vol. 10, Memoir No. 4: A Supplement to the Molluscs of the Ranikot Series. By the late E. W. Vredenburg. Edited with Notes by Dr. G. de P. Cotter. Pp. iv+75+9 plates. 6.12 rupees; 11s. Vol. 11: Revisions of Indian Fossil Plants. Part 1: Coniferales (a. Impressions and Incrustations). By Prof. B. Sahni. Pp. iii+49+6 plates. 3.12 rupees; 6s. 6d. Vol. 12: The Fauna of the Agglomeratic Slate Series of Kashmir. By the late H. S. Bion. With an Introductory Chapter by C. S. Middlemiss. Pp. iv+42+8 plates. 6.8 rupees; 10s. 6d. Vol. 13: The Artiodactyla of the Eocene of Burma. By Dr. Guy E. Pilgrim. Pp. iii+39+4 plates. 3.12 rupees; 6s. 6d. (Calcutta: Government of India Central Publication Branch.)

Survey of India. Geodetic Report. Vol. 1, From 1st October 1922 to 30th September 1925. Pp. xii+323+16 plates. (Dehra Dun.) 6 rupees; 9s. 9d.

Department of Agriculture, Madras. Bulletin No. 89: The Conduct of Field Experiments. By E. O. Iliffe and B. Viswa Nath. Pp. vii+51. (Madras: Government Press.) 1-4 rupees.

Proceedings of the Royal Irish Academy. Vol. 38, Section A, No. 3: On the Motion of Vortices near a Circular Cylinder in a Stream of Liquid. By E. T. S. Walton. Pp. 29-39. 6d. Vol. 38, Section B, No. 7: Further Notes on the Metabolism of Conifer Leaves. By Prof. Joseph Doyle and Phyllis Clinch. Pp. 116-127. 6d. Vol. 38, Section B, No. 8: The Catalase Content of Conifer Leaves, with Notes on its Measurement. By Prof. Joseph Doyle and Phyllis Clinch. Pp. 128-147. 6d. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate.)

The Scientific Proceedings of the Royal Dublin Society. Vol. 19 (N.S.), No. 4: Influence of Temperature on Response to Electrical Stimulation. By Prof. Henry H. Dixon and T. A. Bennet-Clark. Pp. 27-38. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate.) 1s.

Forest Bulletin No. 41: Note on Weights of Seeds. By S. H. Howard. Revised by H. G. Champion. Pp. ii+21. (Calcutta: Government of India Central Publication Branch.) 8 annas; 10d.

British Mosquito Control Institute. Reports presented by the Council and the Director at the Second Annual General Meeting, held at the Hotel Cecil, London, June 18th, 1928. Pp. 16. (Hayling Island.)

Transactions of the Eastbourne Natural History, Photographic and Literary Society. Supplement, Vol. 9: The Butterflies of Eastbourne. By Robert Adkin. Pp. 61+15 plates. (Eastbourne.) 2s. 6d. net.

Angueddfa Genedlaethol Cymru: National Museum of Wales. Geological Maps: their History and Development, with special reference to Wales. By Dr. F. J. North. Pp. vi+133+12 plates. (Cardiff.) 1s.

Ministry of Agriculture and Fisheries. Miscellaneous Publications, No. 62: Report on the Occurrence of Insect Pests on Crops in England and Wales for the Years 1925, 1926 and 1927. Pp. 47. (London: H.M. Stationery Office.) 2s. net.

Review of Grapefruit Production in British Honduras. By Prof. H. Clark Powell. Pp. 23. (Belize, British Honduras: Government Printing Office.)

Ministry of Agriculture and Fisheries. Report on the Work of the Research and Education Division for the Year 1926-27. Pp. 87. (London: H.M. Stationery Office.) 2s. 6d. net.

Air Ministry. Aeronautical Research Committee: Reports and Memoranda, No. 1149 (Ae. 316): Variable Density Wind Tunnel—Report of the Scale Effect Panel. (T. 2450.) Pp. 4+1 plate. 4d. net. No. 1152 (M. 55): Stresses in a Plate bounded by a Hyperbolic Cylinder. By A. A. Griffith. (E. F. 209.) Pp. 10. 9d. net. (London: H.M. Stationery Office.)

Imperial Department of Agriculture for the West Indies. Report on the Agricultural Department, St. Vincent, for the Year 1927. Pp. v+29. (Trinidad, B.W.I.) 6d.

Reports of the Imperial Economic Committee. Ninth Report: Tobacco. (Cmd. 3168.) Pp. 50. (London: H.M. Stationery Office.) 3d. net.

The Journal of the Municipal College of Technology, Manchester: a Record of Investigations undertaken by Members of the Manchester College of Technology. Vol. 13, 1927. Pp. vi+240. (Manchester.)

The Journal of the East Africa and Uganda Natural History Society. No. 31-32, October 1927-January 1928. Pp. 111-180+37 plates. (Nairobi.) 7s. 6d.; to non-Members, 15s.

The Cordwainers Technical College, Eagle Court, St. John's Lane, E.C.1. Prospectus of Classes in Boot and Shoe Manufacture and Making, and Leather Goods Manufacture. Day and Evening Classes, Session 1928-9. Pp. 42. (London.)

Research Association of British Motor and Allied Manufacturers. Eighth Annual Report of the Council for the Year ending 31st March 1928. Pp. 8. (London.)

Broadcast English. 1: Recommendations to Announcers regarding certain Words of doubtful Pronunciation. Pp. 32. (London: British Broadcasting Corporation.)

#### FOREIGN.

Department of the Interior: Bureau of Education. Bulletin, 1928 No. 2: Statistics of Nurse Training Schools, 1926-27. Pp. 57. (Washington, D.C.: Government Printing Office.) 10 cents.

Ministry of Public Works, Egypt: Physical Department. Meteorological Report for the Year 1922. Pp. xiii+170. (Cairo: Government Publications Office.) 40 P.T.

Annales de l'Institut de Physique du Globe de l'Université de Paris et du Bureau central de Magnétisme terrestre. Publiées par les soins de Prof. Ch. Maurain. Tome 6. Pp. iv+153. (Paris: Les Presses universitaires de France.)

Bernice P. Bishop Museum. Bulletin 45: The Ecology of an Hawaiian Coral Reef. By Charles Edward Edmondson. Pp. 64. 1 dollar. Bulletin 47: Land Snails from Hawaii, Christmas Island and Samoa. By

Henry A. Pilsbry, C. Montague Cooke, Jr., and Marie C. Neal. Pp. ii+49. 1 dollar. Bulletin 49: Hawaiian Shallow Water Anthozoa. By Addison E. Verrill. Pp. 30+5 plates. 1 dollar. Memoirs, Vol. 9, No. 5: The Moriories. By H. D. Skinner and William Baucke. Pp. 44+8 plates. 2 dollars. (Honolulu, Hawaii.)

Department of Commerce: Bureau of Standards. Miscellaneous Publication No. 84: Standard Time Conversion Chart. Prepared by R. E. Gould. (Washington, D.C.: Government Printing Office.) 10 cents.

Publications of the Kapteyn Astronomical Laboratory at Groningen. No. 42: The Proper Motions of 2292 Stars derived from Plates taken at the Radcliffe Observatory. Measured and discussed by Prof. Dr. P. J. van Rhijn, Dr. W. J. Klein Wassink and B. J. Bok. Pp. iv+18+T25. (Groningen: Hoitsemma Bros.)

Reports of the Imperial Industrial Research Institute, Osaka, Japan. Vol. 9, No. 3: Dispersoidological Investigations. 22: Jellies and Gelatinous Precipitates; their Classification, Conditions of Formation, Structure and Industrial Application. By Prof. Dr. P. P. von Weimarn and collaborators. Translated from the Russian by Mrs. P. P. von Weimarn. Pp. 196+12 plates. (Osaka and Tokyo: Koseikai Publishing Department.) 4.35 yen.

Department of Commerce: U.S. Coast and Geodetic Survey. Special Publication No. 142: Tides and Currents in Boston Harbor. By Paul Schureman. Pp. iii+116. (Washington, D.C.; Government Printing Office.) 30 cents.

Reprint and Circular Series of the National Research Council. No. 81: First Report of the Committee on Photochemistry. Pp. 481-575. (Washington, D.C.: National Academy of Sciences.) 1 dollar.

Iowa Geological Survey. Vol. 32: Annual Reports, 1925 and 1926, with Accompanying Papers. Pp. 557. (Des Moines, Iowa.)

The Academy of Natural Sciences of Philadelphia. Special Publication No. 2: Crystallographic Tables for the Determination of Minerals. By Victor Goldschmidt and Samuel G. Gordon. Pp. 70. (Philadelphia, Pa.) 1.50 dollars.

Proceedings of the United States National Museum. Vol. 73, Art. 8: A Revision of the American Parasitic Flies belonging to the Genus *Belvosia*. By J. M. Aldrich. (No. 2729.) Pp. 45. Vol. 73, Art. 9: The Scorpions of the Western Part of the United States, with Notes on those occurring in Northern Mexico. By H. E. Ewing. (No. 2730.) Pp. 24+2 plates. (Washington, D.C.: Government Printing Office.)

Smithsonian Institution: United States National Museum. Bulletin 144: The American Bats of the Genera *Myotis* and *Piponyx*. By Gerrit S. Miller, Jr., and Glover M. Allen. Pp. viii+218. (Washington, D.C.: Government Printing Office.) 55 cents.

Year Book, The Academy of Natural Sciences of Philadelphia, for the Year ending December 31, 1927. Pp. 106+9 plates. (Philadelphia, Pa.)

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. 79, 1927. Pp. iii+334+229-583+26 plates. (Philadelphia, Pa.) 6.25 dollars.

American Institute of Weights and Measures: Scientific Papers. A Precision Value for the Inch. By Luther D. Burlingame. Pp. 9. (New York City.)

Bernice P. Bishop Museum. Bulletin 46: Tales and Poems of Tonga. By E. E. V. Collocott. Pp. 169. Bulletin 48: Ancient Tahiti. By Teira Henry. Based on Material recorded by J. M. Ormond. Pp. iv+ viii+651. (Honolulu, Hawaii.)

U.S. Department of Agriculture. Farmers' Bulletin No. 1557: Insects attacking the Peach in the South and how to Control Them. By Oliver I. Snapp. Pp. ii+42. (Washington, D.C.: Government Printing Office.) 10 cents.

Proceedings of the United States National Museum. Vol. 73, Art. 5: Two common Species of Parasitic Crustacea (Sacculinidae) of the West Indies. By H. Boschma. (No. 2726.) Pp. 10. (Washington, D.C.: Government Printing Office.)

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. 80. Mexican Mollusks. By Henry A. Pilsbry. Pp. 115-117. (Philadelphia, Pa.)

Conseil Permanent International pour l'Exploration de la Mer. Rapports et Procès-verbaux des Réunions. Vol. 47: Rapport Jubilaire (1902-1927). Pp. iv+273. (Copenhagen: Andr. Fred. Høst et fils.)

#### CATALOGUES.

British Chemical Balances and Weights. Pp. 24. (London: L. Oertling, Ltd.)

Electro-Medical Apparatus. (Bulletin No. 99.) Pp. 60. (London: Watson and Sons (Electro-Medical), Ltd.)

### Diary of Societies.

SATURDAY, AUGUST 18.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS (Newcastle-upon-Tyne), at 2.30.—Annual General Meeting.

#### CONGRESS.

AUGUST 20-25.

INTERNATIONAL CONGRESS AGAINST ALCOHOLISM (at Antwerp).—Sir Arthur Newsholme: The Alcohol Question and Social Hygiene.—Prof. Firket: The Concentration of Alcohol in the Blood and the Diagnosis of Drunkenness from the Medico-legal and Insurance Aspects.—Prof. Laitinen: Recent Experiments on Alcohol and Heredity.—Dr. Puusep: Changes in the Endocrine Glands in the Descendants of Alcoholics, the Endocrine Glands and Inebriety, the Permeability of the Meninges in Alcoholics, and the Excitability of the Cerebral Tissue in the Descendants of Alcoholics.—Prof. H. Emerson: Results of American Prohibition from the Hygienic Aspect.—Drs. Vervaeck and Meens: Social Effects of the Belgian Liquor Law of 1919.—Dr. Dahlgren: Alcoholism in Russia.—Drs. Bellin du Coteau and Bergeron: Alcohol and Sport.