

Societies and Academies.

LONDON.

Royal Society, Jan. 21.—C. Donhoffer and J. J. R. Macleod: Studies in the nervous control of carbohydrate metabolism. When decerebration is performed through the pons in rabbits under amyta! anaesthesia, the percentage of blood sugar rises very high after the effects of the anaesthetic have passed off. After pontine decerebration the percentage of lactic acid increases in the blood and the percentage of glycogen decreases in the muscles, but may either increase or decrease in the liver. No relationship exists between the degree of decerebration, hyperglycaemia, and the percentage of glycogen initially present in liver and muscles, and when previously fasted animals are used it is impossible to account for the hyperglycaemia by the sugar arising from the glycogen which disappears. It is concluded that a process of gluconogenesis is responsible for most of the extra sugar, but it has so far proved impossible to determine the extent to which protein and fat contribute towards its production. In fasted animals, having small percentages of glycogen in the liver and muscles, pontine decerebration fails to induce hyperglycaemia after double adrenalectomy, or administration of atropine, ergotamine, or amyta!. It is concluded that decerebration hyperglycaemia is in large part due to stimulation through the autonomic nerves of some process by which the liver discharges sugar in excess of that available from the glycogen initially present in it. Since amyta! paralyses this pathway, it prevents the rise in blood sugar percentage following pontine decerebration, piqûre, and asphyxia, but not that due to the injection of large doses of adrenaline.—W. T. Astbury, T. C. Marwick, and J. D. Bernal: X-ray analysis of the structure of the wall of *Valonia ventricosa*. (1) The cell-wall is built up of two main sets of cellulose chains which form crystallites crossing at an angle maintained remarkably constant through the whole thickness and over considerable areas of the wall. The orientations of the cellulose chains are parallel to the directions of the fine crossed striations which may be detected on the surface of the wall. The extinction directions shown by the wall in polarised light lie between the directions of the cellulose chains and vary in a manner determined by the inter-chain angle and the relative proportions of the chains associated with each orientation.—F. A. Askew, R. B. Bourdillon, H. M. Bruce, R. K. Callow, J. St. L. Philpot, and T. A. Webster: Crystalline vitamin D. Further purification of the antirachitic principle has been achieved by esterification of the crystalline distillation products formerly described as calciferol. The purified calciferol now obtained has an antirachitic activity twice as great as any previously recorded, and appears to be identical with the vitamin D₂ of Linsert and Windaus. A simplified process is described for preparing the pure product from the irradiation products of ergosterol without distillation. An account is given of two inactive compounds termed pyrocalciferol and sterol X. Evidence is given of the relations between the crystalline antirachitic products hitherto described, showing that the activity of each of them is due to one common constituent. Thus the vitamin D₁ of Windaus is a compound of calciferol (=vitamin D₂) and sterol X, and the crystalline distillation products first described contained pyrocalciferol and sterol X, as well as calciferol. (See also NATURE of Oct. 31, 1931, p. 758, and Jan. 9, p. 50.)

PARIS.

Academy of Sciences, Dec. 21.—A. Lacroix: The members and correspondents of the Académie royale des Sciences (1666–1793).—Paul Pascal and Pierre Minne: The existence and preparation of lead suboxide. The only method of preparation giving a definite compound is the decomposition of lead oxalate at 275° C. in a vacuum (1 mm.). The magnetic susceptibility proves that it does not consist of the mixture Pb + PbO. The pure suboxide (Pb₂O) cannot be obtained by the reduction of lead monoxide.—Lucien Lichtenbaum: A topological invariant.—E. Pinte: Congruences of straight lines and parallel surfaces in Hilbertian space.—Jacques: Networks the tangents of which belong to linear complexes and non-Euclidian surfaces of constant total curvature.—Paul Mentré: The projective application of a quadratic complex on the non-special linear complex.—F. Marty: The iteration of certain algebraic functions.—M. Davin: The elastic state of an indefinite two-dimensional body pierced by a circular hole.—D. Belorizky: The application of Sundman's methods to the problems of celestial mechanics.—A. Lallemand: The preparation of two types of aqueous solutions of cobaltous salts. Study of their magnetic state as a function of the dilution. Two types of solutions of cobalt salts are known; in the first the magnetic susceptibility is constant and independent of the concentration, in the second the magnetic susceptibility increases with dilution to a sharp maximum. The author gives the conditions for preparing either of these types of solution at will.—L. Néel: The magnetic properties of iron above the Curie point. From studies of the magnetic properties of iron-tin alloys and iron-silicon alloys at temperatures ranging from 800° C. to 1100° C., the ferromagnetic Curie point found (θ_f) is 772° C., and the paramagnetic Curie point (θ_p) is 815° C.—Mlle. A. Serres: The magnetic moment of tetravalent cobalt. From a study of magnesium cobaltite (MgO · CoO₂), the magnetic moment of Co⁺⁺⁺ is found to be 29.0 magnetons.—E. Rinck: An allotropic transformation of barium in the solid state. Barium, fractionally redistilled in a vacuum, is attacked by carbon dioxide and can only be handled in argon. Its melting point was redetermined and found to be 710° C. From a study of the electrical resistance, two allotropic forms of barium are shown to exist, α -barium stable below 375° C. and β -barium stable between 375° and 710° C.—Mion: Contribution to the study of the system water, ethyl alcohol, acetic acid, ethyl acetate. The miscibilities of the ternary system (water, alcohol, ethyl acetate) and quaternary system have been determined at 0°, 15°, and 30° C.: the results are given in tabular form.—M. Bourguet and L. Piaux: The Raman effect and chemistry; the allene linkages. The Raman effect for allene and its derivatives shows that these hydrocarbons contain neither an ethylene nor acetylene linkage. Hence the usually accepted formulae require revision.—Jean Cournot: The influence of the state of the surface on the corrosion of rustless steels. The effect of the condition of the surface on corrosion is specially marked in the case of rustless steels: to obtain a maximum resistance to corrosion it is necessary to polish the surface with the finest grade emery.—Mlle. Suzanne Veil: Precipitations stratified in spirals.—M. Patry and P. Laffitte: The beginning of the explosive wave in mercury fulminate.—Frank A. Perret: The new dome of Mt. Pelée.—Emile F. Terroine and H. Trimbach: The urinary excretion of ketonic substances during starvation in various species of animals. Experiments on the pig, rabbit, dog, cat, and rat showed no increase in ketonic sub-

stances excreted in the urine during starvation; on the contrary, there was a reduction. The increase observed in man and in the primates appears to be exceptional.—J. Errera : The electrometric titration of the proteins. The isoelectric points of the albumins and globulins are in the acid region ($\text{pH } 4\text{--}5.5$), whilst those of the prolamines and glutelines are in the alkaline region ($\text{pH } 8\text{--}10$).—Paul Fleury : The glycerophosphomolybdates. In the glycerophosphates the phosphoric acid still possesses, although in a weakened form, the property of forming complex compounds with molybdic acid. Two of these have been isolated in the crystalline condition, sodium β -glycerophosphomolybdate and potassium β -glycerophosphomolybdate.—A. Ch. Hollande and Mme. G. Hollande : The cytology of *B. coli*.

SYDNEY.

Royal Society of New South Wales, Nov. 4.—A. R. Penfold : The essential oil of *Leptospermum Liveridgei* var. B. and the occurrence of isopulegol. The presence of *d-a*-pinene, citronellal (33.42 per cent), and sesquiterpene alcohol was confirmed, and the occurrence of isopulegol both free and combined as caprylic acid ester revealed. The isolation and identification of this alcohol is the first authentic record of its occurrence in Nature.—E. Cheel : Notes on the *Pericalymmae* section of the genus *Leptospermum*, with descriptions of three new species. An account was given of the first collection of plants commonly known as 'tea-tree' in Australia or 'manuka' in New Zealand, made by John Reinhold Forster and his son, George Forster, who accompanied Capt. Furneaux of the *Adventure*, which left England in 1772, on Capt. Cook's second voyage to the shores of Australia. Three new species were described : *L. trivalum* has small capsules, normally three-valved. The plant otherwise resembles *L. myrsinoides*, which is confined to Victoria, whereas the new species is widespread over the western and southern parts of New South Wales, extending to Victoria. *L. sphaerocarpum* has spherical-shaped fruits, and has affinities with *L. nitidum*, a Tasmanian species. *L. semibaccatum* has fruits somewhat berry-like when fresh, an unusual character for this group of tea-trees.

VIENNA.

Academy of Sciences, Oct. 15.—A. Kailan and J. Kohberger : The velocity of catalysed hydration.—L. Moser and H. Hackhofer : The determination and separation of rare metals from other metals. (20) The determination of iridium and its separation from platinum and other metals. Hydrolysis was used and also bromide-bromate.—L. Moser and H. Gruber : The determination and separation of rare metals from other metals. (21) The determination of rhodium and its separation from platinum and other metals. Oxidising hydrolysis was in many cases successful.—W. J. Müller, H. K. Cameron, and W. Machu : The theory of passivity phenomena. (14) The passivity of nickel. The substances forming surface layers are the natural nickel oxide which forms in air, basic nickel sulphate, double refracting nickel sulphate pentahydrate, nickel peroxide.—J. Kühlreiber : New Plecoptera larvae.—F. J. Widder : *Draba norica*, a new plant of the Eastern Alps.—A. Rollett and F. Scholz : The course of esterification with mixed anhydrides and mixtures of anhydrides.—M. Mladenovic : The elemic acid from Manila elemi resin. (3) The elemonic acid, its hydration product, and bromo-hydro-elemonic acid.—A. Dadieu, K. W. F. Kohlrausch, and A. Pongratz : Studies on the Raman effect. (16) The Raman spectrum of organic substances (cis-trans-isomerism).—A. Dadieu and F. A. Schneider : Raman effect and constitution of nickel carbonyl.—S. Pelz : Electrolytic coloration of alkali halide crystals.

Forthcoming Events.

Societies.

FRIDAY, JANUARY 29.

SOCIETY OF MEDICAL OFFICERS OF HEALTH (Fever Hospital Medical Service Group) (at 1 Upper Montague Street, W.C.1), at 4.—Dr. E. W. Goodall : Pre-bacterial Views of Infectious Diseases (Presidential Address).

ROYAL ASTRONOMICAL SOCIETY (Geophysical Meeting), at 5.—Prof. E. V. Appleton : Upper Air Ionisation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Sir Arthur Keith : Malformations of the Human Body considered from a New Point of View (Hunterian Lecture).

MONDAY, FEBRUARY 1.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Prof. J. P. Hosford : Some Factors in the Causation of Hydronephrosis (Hunterian Lecture).

ROYAL INSTITUTION OF GREAT BRITAIN, at 5.—General Meeting.

SOCIETY OF ENGINEERS (at Geological Society) (Inaugural Meeting for Year), at 6.—F. W. Mackenzie Skues : Presidential Address.

INSTITUTE OF FUEL (at Institution of Electrical Engineers), at 6.30.—Presentation of the Melchett Medal to Prof. Bone and delivery of the Melchett Lecture by Prof. Bone : A Century of Fuel Economy.

ROYAL SOCIETY OF ARTS, at 8.—Capt. O. A. Barrand and G. A. Green : Life-Saving Appliances on Merchant Ships (Thomas Gray Lectures) (3).

TUESDAY, FEBRUARY 2.

ROYAL INSTITUTION OF GREAT BRITAIN, at 5.15.—Prof. C. A. Edwards : The Progress of Research relating to Physical Metallurgy (3).

WEDNESDAY, FEBRUARY 3.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Prof. R. T. Payne : Excretion Urography (Intravenous Pyelography) (Hunterian Lecture).

ROYAL SOCIETY OF ARTS, at 8.—A. Broughton Edge : Geophysical Methods of Prospecting.

ROYAL SOCIETY OF MEDICINE (Medicine and Surgery Sections), at 8.30.—Special Discussion on Diagnosis and Treatment of Abscess of the Lung.

THURSDAY, FEBRUARY 4.

LONDON MATHEMATICAL SOCIETY (at Royal Astronomical Society), at 5.—M. H. A. Newman : Topological Methods in the Theory of Continuous Groups (Lecture).

ROYAL INSTITUTION OF GREAT BRITAIN, at 5.15.—Prof. H. G. Cannon : Feeding and Digestion of Invertebrates (3).

FRIDAY, FEBRUARY 5.

ROYAL SOCIETY OF MEDICINE (Laryngology Section), at 5.—Discussion on Common Colds and their Sequelæ.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Prof. A. R. Hobbs : Puerperal Sepsis, with an Account of the Treatment of Puerperal Infection by Glycerine Drainage (Hunterian Lecture).

GEOLOGISTS' ASSOCIATION (in Botany Theatre, University College) (Annual General Meeting), at 7.30.—Prof. W. W. Watts : Fossil Landscapes (Presidential Address); and presentation of Foulerton Awards to F. Gossling and Dr. S. W. Wooldridge.

ROYAL INSTITUTION OF GREAT BRITAIN, at 9.—Dr. G. C. Simpson : Weather Forecasting.

Public Lectures.

FRIDAY, JANUARY 29.

IMPERIAL COLLEGE OF SCIENCE (Royal College of Science), at 5.30.—Dr. T. M. Finlay : The Evolution of Landscape : The Desert (Swiney Lectures) (11).

SATURDAY, JANUARY 30.

HORNIMAN MUSEUM (Forest Hill), at 3.30.—Dr. A. I. Richards : Women's Life and Work in a Central African Tribe.