

## Societies and Academies.

## LONDON.

Society of Public Analysts, Nov. 5.—G. M. Moir: The determination of the milk proteins. By mixing definite quantities of milk with a suitable acetic acid and sodium acetate buffer, maximum casein values are obtained between pH 4.5 and 4.7. Casein thus precipitated is identical with the substance precipitated by acetic acid alone at pH 4.2. For the combined determination of albumin and globulin the filtrate obtained from the iso-electric precipitation of the casein is treated with trichloroacetic acid to give a concentration of about 4 per cent, and the nitrogen in the resulting precipitate determined by Kjeldahl's method. Casein and globulin are determined by precipitation with neutral saturated magnesium sulphate or sodium sulphate, and the individual proteins calculated by difference.—S. G. Clarke: The lead reduction method for the volumetric determination of tin, and the interference of copper and antimony. Tin is determined by Powell's method of reduction from the stannic condition by means of lead, and direct titration with iodine, in an atmosphere of carbon dioxide. Copper causes the results for tin to be too low in direct proportion to the amount of copper present. Antimony also interferes, a considerable amount of tin being removed from the solution by the precipitation of the antimony; this reacts with the iodine during the titration.—W. J. Agnew: A new method for determining traces of chromium in steel. Chromium is oxidised with potassium permanganate, excess permanganate being reduced by hydrochloric acid. The iron is then precipitated with sodium carbonate, and the dichromate determined by Evans's colorimetric method based on the purple coloration which it gives with diphenylcarbazide.

Linnean Society, Nov. 6.—J. G. de Man: On a new species of the genus *Hoplophorus* (*Oplophorus*) H. M. Edw. A new species of deep-sea prawn belonging to the genus *Hoplophorus*. The specimens were taken from the stomach of a groper, *Polyprion prognathus*, captured in 2 fm. of water off the east coast of the South Island of New Zealand, at a place where deep water comes to within a short distance of the shore.—Isabella Gordon: Brachyura from the coasts of China. In the endeavour to find satisfactory systematic characters for the discrimination of species and genera, particularly in the families Xanthidae and Portunidae, attention was given to the form of the abdominal appendages in the male sex. These appendages appear to afford a ready and reliable means of distinguishing males of the species discussed here and also in other species.—H. H. Allan: Some remarks on wild hybrids in the New Zealand flora. Wild hybrids are very prevalent in the New Zealand flora, and these hybrids occur, for the most part, as highly polymorphic swarms, often between extremely diverse species, and showing a high degree of fertility. Where a species occurs alone it shows no 'variability', apart from environmentally induced modifications, and reproduces itself truly. The many so-called 'variable' species of the flora are really artificial groups compounded of true-breeding forms along with various hybrids. These artificial groups are now being studied by means of artificial hybridisation.

## PARIS.

Academy of Sciences, Oct. 20.—The president announced the death of Adolf Engler, *correspondant* for the Section of Botany.—Ernest Esclançon: New observations of the trans-Neptunian planet and a new determination of its orbit.—Georges Perrier:

The fourth general assembly of the International Geodesic and Geophysical Union; Stockholm, August 1930.—Serge Bernstein: An interpolation formula.—P. Vincensini: Surfaces of constant total curvature.—Paul Delens: Representations of complex elements and conformal transformations on the sphere.—S. Finikoff: Transformations of couples of stratifiable congruences.—Paul Mentré: The complexes produced by a non-special linear congruence.—Alfred Rosenblatt: The unicity of solutions of partial differential equations of the first order.—Henri Poncin: A particular case of flow.—Ch. Ledoux: Method and apparatus for studying the deformations of aerial helices.—Mme. Camille Flammarion: Photographs of the trans-Neptunian planet Pluto. Photographs were taken on Aug. 30, Sept. 3 and 25. On the last date the negative was satisfactory, permitting the determination of the planet's position with reference to neighbouring stars: the planet was estimated to be of mag. 15.—J. J. Trillat: The structure of celluloid. Study of the structure with an X-ray spectrograph of celluloid films of constant thickness containing variable proportions of camphor. The relations found between the intermolecular distances of the external ring and the proportions of camphor are given graphically.—Jean Thibaud: Remarks on the fine structure of the  $\alpha$ -radiation.—C. Pawlowski: Researches on the artificial disintegration of some elements. The presence of disintegration particles has been proved for carbon, magnesium, aluminium, silicon, and sulphur, but for the heavier elements, iron, zinc, silver, and lead, only the reflected  $\alpha$ -particles have been observed. The numerical results agree with those obtained by another method by Bothe and Fränz.—Louis Meunier and Jacques Corbière: The absorption of fatty materials from an aqueous emulsion by wool fibres.—Hackspill and Winterer: The decomposition of the bromates of the alkaline earths by heat. The rate of oxygen evolution with rise of temperature has been studied by a continuous photographic method. Barium bromate gives a point of inflection at 300° C. corresponding with the possible formation of barium perbromate, but attempts to isolate this salt have been unsuccessful.—G. Lejeune: The equilibrium of cerous and perceric salts.—Georges Brus and J. Vebra: Crystallised complex compounds starting from bornyl and isobornyl acetates.—J. H. Hoffet: The age of the limestone formations of central Indo-China.—J. Fromaget: The age of the porphyrites and rhyolites in Haut-Laos and the bordering regions.—Georges Dubois and J. Pierre Hatt: Peat bogs and post-glacial forest modifications of the middle Vosges. An application of the method of pollen analysis.—Jean Lugeon: The examination of the upper ionised layers at sunrise between Paris and the Sahara by short waves. The results obtained by the atmospheric and short wave methods are in close agreement, and suggest that on the date of the experiments (Nov. 2) there were four reflecting layers at altitudes of 280, 185, 85, and 50 km. During the night the short waves are reflected by the upper ionised layers, but during the day are reflected by the lower layers.—R. Argaud and M. Pesqué: The persistence of the phagocytic activity of the thymus in the course of its involution.—Fontaine: Researches on the internal medium of the sea lamprey (*Petromyzon marinus*). Its variations as a function of those of the external medium.—Ph. Jayet-Lavergne: A physico-chemical theory of sexuality.

## BRUSSELS.

Royal Academy of Belgium, April 5.—E. De Wilde-man: The morphology of *Zygnema ericetorum*.—Th. De Donder: The physical interpretation of the

constant  $h$  of Planck by gravific.—Th. De Donder: The invariant theory of the calculus of variations (6).—D. V. Jonesco: A problem relative to a recurrence formula or to a finite difference equation.—Lucien Godeaux: Researches on the cyclic involutions belonging to an algebraical surface.—Raymond Defay: The thermodynamical study of surface tension, affinity, and adsorption velocity (5).—Jacques Van Mieghem: Study of retarded potentials.—G. Gueben: The distribution of the radiation round radium tubes. The study of the distribution of radiation round radium tubes is of importance in radium therapy and has already been the subject of several publications, mainly from the mathematical point of view. The experimental method used by the author is based on the action of the radiation on a photographic plate, followed by measurements with a microphotometer. The proportionality between blackening and radiation found by Hoed and Stoel is confirmed. The relative advantages of the radiographic and ionometric methods for practical use are discussed.—H. Keiffer: The mechanism of lactation in mammals.

May 6.—G. Cesàro: Some functions of the sides or angles of the triangle capable of being expressed as a rational function of the perimeter and of the radii of the inscribed and circumscribed circles.—Armand Renier: A scientific centenary: André Dumont and the geological constitution of the province of Liège.—Lucien Godeaux: (1) Remarks on desmic surfaces of the fourth order.—(2) The complex locus of the straight lines belonging to the quadrics of a network.—(3) Plane curves of the sixth order possessing six points of inflection.—M. Maury: The geodesic service. Report on the work of 1929. The programme of work included the establishment of the triangulation network of the Grand Duchy of Luxemburg, and linking up the French, Belgian, and Luxemburg systems.—Alb. J. J. van de Velde: The sterilisation of flours and enzymes in the state of powder. Earlier researches with flour proved that of the various reagents tested, only carbon disulphide treatment gave a sterile powder, leaving the biochemical properties unchanged. Experiments on the sterilisation of enzymes (amylase, pepsinase) are described: even after a double treatment at the ordinary temperature with carbon disulphide, the hydrolysing properties of both these enzymes remained unchanged.—A. De Waele: Contribution to the study of cholesterol in the earthworm. The presence of cholesterol was proved, and found to be chemically and physically identical with that obtained from the higher animals. The proportion found was 0.092 per cent and no other sterol was present.—Raymond Defay: The thermodynamic study of surface tension. Affinity and adsorption velocity (6).—R. H. J. Germaij: The Lagrange formula.—Mlle. Georgette Schouls: Study of dynamic azeotropism.—Radu Badesco: A functional equation (3).—Fernand Bolus: Surfaces of the fourth order possessing three double singular points.—Raphael Deladrière: The parametric or homogeneous form in the calculus of variations.—E. Leloup: Concerning *Monothecca obliqua*.

June 7.—Th. De Donder: The invariant theory of the calculus of variations (8).—Th. De Donder: The physical interpretation of Planck's constant  $h$  by the gravific. Applications (2).—P. Bruylants, L. Ernould, and M. Dekoker: The  $\alpha$ -methylbutenoic amides.—Raymond Defay: The thermodynamical study of surface tension. Affinity and adsorption velocity (7).—Jacques Van Mieghem: The study of retarded potentials (4).—L. Godeaux: The correspondence between two surfaces and birational transformation of space.—M. Winants: Some linear partial differential equations possessing three distinct

families of real characteristics.—R. H. J. Germaij: The rôle of an exponential in the development in series of solutions of generalised Lagrange equations. Application to the Gauss equation.—M. Alliaume: Simplifications of the Gauss method for the determination of orbits in the case of a very distant planet.—A. Castille: The ultra-violet absorption spectra of the  $\alpha$ -methylbutenoic amides.—Miron Nicolesco: A theorem of M. Pompéu.—J. Thoreau: The crystallographic characters of the  $\alpha$ -methylbutenoic amides.—M. Nuyens: The quantification of the gravific and electromagnetic fields.

## LENINGRAD.

Academy of Sciences, *Comptes rendus*, No. 11, 1930.—P. Davidovich: Spectroscopic problems in the study of new stars.—A. Cvetkov: The part played by statistical fluctuations in a living organism from the point of view of the ionic theory of excitation. Theoretical considerations on the problem.—P. Wittenburg: Discovery of an Upper Triassic fauna at Wrangel Land. New data for a paleogeographical map of the Upper Triassic period are supplied by the discovery of *Pseudomonotis ochotica* Keys. and *P. ochotica* var. *densistriata* Tell. at Wrangel Land.—A. Mordvilko: Notes on Aphids (1-3). Description of *Brasilaphis bondari*, gen. and sp. n., from Brazil, belonging to the peculiar subfamily *Setaphidinae*, consisting of only four genera distributed in the tropics and subtropics. Attention is directed to *Neophyllaphis* Takah., living in Japan on *Podocarpus*, and a description is given of *Tetraneura takahashii*, sp. n., from roots of *Miscanthus* in Formosa.—S. Smirnov: Two new forms of Copepoda from the Amur region. Descriptions of *Attheyella borutzkyi*, sp. n., and *Cyclops languidooides* Lillj. var. *gracilicaudatus* n. var.—V. Barovskij: Description of a new genus of the tribe *Lycina*, family *Lycidae* (Coleoptera). *Erdictyoptera brevicornis*, gen. and sp. n., is described from the South Ussuri region.

*Comptes rendus*, No. 12, 1930.—P. Lazarev and L. Teile: Action of certain substances, introduced into an organism by different methods, on the centres of peripheral vision. When morphine was injected into the blood the mean increase in the sensibility of the eye was greater than when morphine was taken through the mouth.—P. Lazarev and P. Belikov: Action of quinine on the centres of vision and of hearing. Since the time necessary to produce effect on the eye and the ear by the same substance (quinine) is different, it may be concluded that the physicochemical mechanism of the visionary and the auditory centres are different.—S. Kostychev and S. Klupt: The activity of ferments in the maceration juice of yeast after filtration and dialysis. The reduction of the fermentative power of the yeast juice is a specific character of the zymase, while the carboxylase, mutase, invertase, and maltase of the juice are not affected by the filtration; the true diastases are not, then, absorbed in the filter.—I. Kozhantchikov: Habits of the sable (*Martes zibellina* L.) in the Sayan mountains and its geographical distribution. An analysis of the distribution of the sable on the basis of its ecological requirements.—B. Dzerdzejevskij: Some results of the aerological observations on Lake Baikal. Balloon observations on the velocity and direction of wind at different altitudes.—V. Vlodavec: Geological investigations carried out in 1925 in the region of the River Umba, Kola Peninsula. The investigations revealed a wide distribution in the area of rocks belonging to the habbro-pyroxenite formation.—A. Saukov: The cinnabar deposits of Nerchinsk. A description of the deposits from the point of view of their possible exploitation.