

which quoting from *Galignani's Messenger* said: "The Lyons papers, and after them the *Gazette de France* and many of the departmental journals, have been relating wonderful stories of discoveries in the moon by Mr. Herschel, who is represented as giving, by means of an immense telescope he had constructed, a complete geographical description of that planet, its rivers and lakes, its mountains and vallies, its vegetation and animals, together with measurements of hills, plains, etc., the composition of the strata of the lunar soil, and many other very interesting things. We abstained from repeating these fables till we should have at least some plausible authority for their publication, and our circumspection has been justified." The account of the pretended discoveries, *The Times* added, appeared first in an American paper, and was evidently a hoax, though the French papers did not see through it. Another note appeared in *The Times* of March 29, saying that a French paper had attributed the hoax to "M. Nicolet, a Frenchman by birth, but settled in the United States".

Societies and Academies

LONDON

Royal Society, March 5. G. C. ULLYETT: Host selection by *Microplectron fuscipennis*, Zett. (Chalcididae, Hymenoptera). *Microplectron* was able to discriminate with ease between true and false hosts even where the latter resemble the normal host in everything except the presence of the living larva within the cocoon. The evidence seems to suggest that the acceptance of a host depends, to a large extent, upon the presence of larval movement. A new technique was developed, during these studies, which removed a number of objections present in previous methods. The selection within the host species as represented by choice between parasitised and healthy individuals and also between the latter and unsuitable hosts was investigated. A high degree of discrimination existed between healthy material and hosts containing parasite larvae which were well grown. The presence of parasite eggs, on the other hand, did not deter females from ovipositing in the host. A wholly mechanistic view of host selection is untenable; the underlying basis of behaviour is of a psychological nature. I. W. ROWLANDS and A. S. PARKES: A study of anti-thyrotropic activity. Inhibition of the effect of thyrotropic extract on the weight of the thyroid of the immature guinea-pig has been used as a test for anti-thyrotropic activity. The normal blood serum of the goat, horse, sheep, cow, and rabbit was not found to possess appreciable anti-thyrotropic activity, nor was that of a castrated ram injected with thyrotropic extract for four weeks. Anti-thyrotropic activity was induced in the blood of rabbits injected daily with thyrotropic extract over a long period. The activity began to appear after four weeks' injection and rose to a maximum at 10 weeks. 2 c.c. of serum obtained at this time completely inhibited the activity of an amount of thyrotropic extract otherwise sufficient to double the weight of the thyroid of the immature guinea-pig. A technique is described for the assay of anti-thyrotropic activity. G. A. MILLIKAN: The kinetics of muscle hæmoglobin. The rates of reaction of muscle hæmoglobin with oxygen and carbon monoxide

have been measured by means of a micro-photo-electric form of the Hartridge-Roughton streaming fluid apparatus. The approximate velocity constants for extracts of horse heart muscle were compared with those for the blood hæmoglobin from the same animal. The kinetic results indicate that muscle hæmoglobin should be available as a naturally occurring intracellular indicator of oxygen tension, with a time lag of less than 1/100 second. This provides a new tool for studying the time relations of oxygen consumption in muscle. Its oxygen affinity, its concentration in muscle, and its rates of reaction are all such as to fit muscle hæmoglobin for the role of an oxygen store which can tide the muscle over from one contraction to the next. No known property, however, precludes the possibility of its acting catalytically within the cell.

DUBLIN

Royal Irish Academy, February 10. J. M. O'CONNOR: The physiological basis of the sensation of cold. (4) An analysis of the influence of temperature and of thyroid extract on the oxygen consumption of the anaesthetised rabbit. Under urethane anaesthesia and curare, the oxygen consumption is increased by thyroid extract 50 per cent at all temperatures from 22° to 39°. Within this range the influence of temperature follows the Arrhenius equation in three phases. The first, at 22°-29°, has a value for the Arrhenius constant of approximately £0,000; at 29°-32°, the constant of 16,000 approximately holds; at 35°-39°, the constant is approximately 22,000. At the transition points between the phases there is on the average a fall in oxygen consumption with rise in temperature. The additional oxygen consumed during shivering is proportional to the rate of change in oxygen consumption at the prevailing skin temperature less a threshold value. During the third phase there is no shivering. (5) The relation between basal metabolism, the regulation of temperature, and the sensation of cold. Comparison of the data referred to above with data in the literature from unanaesthetised but quiescent, that is, not shivering, rabbits, shows that the anaesthesia decreases the oxygen consumption in the first two phases but not in the third. The transition point between the third and the second phase is marked by an increase of about 90 per cent in the oxygen consumption on a slight fall of temperature. This transition point is situated close to the lower limit of the normal body temperature. The excitability of the human skin by cold stimuli corresponds to the rate of change in oxygen consumption with changing temperature.

EDINBURGH

Royal Society, February 3. H. S. JENNINGS: Inheritance in Protozoa. An account was given of recent work in the laboratories of the Johns Hopkins University, on inheritance after conjugation of diverse stocks in the ciliate *Infusoria*. The characteristics of the descendants are for a period of time, up to thirty-six days in some cases, partly determined by the nature of the cytoplasmic body. But the conjugation nucleus gradually takes control and the later characteristics are entirely dependent on its nature. The relation of these findings to the inheritance of acquired immunity or resistance was discussed.

PARIS

Academy of Sciences, February 5 (*C.R.*, 202, 361-444). JULIEN COSTANTIN: Two crops collected in the Roquelaire vineyard where the potato is found to have reverted to the wild state. PIERRE LEJAY: New determinations of gravity at Tonkin, Laos and in Annam. Results are given for 52 new stations. JEAN CABANNES and JEAN DUFAY: Can certain radiations of the nocturnal sky be identified with the Schumann-Runge bands of the oxygen molecule? A discussion of a recent communication of Kaplan on this subject from the point of view of recent (unpublished) work of the authors. These spectra show no intense radiation attributable to the Schumann-Runge system, but on the whole the presence of this system in the light of the night sky is regarded as probable. HENRI DEVAUX: The transformation of a thin pellicle of CuS, under the influence of metallic copper, is of an electrolytic nature. ARNAUD DENJOY: Continued fractions. A. KHINTCHINE and PAUL LÉVY: The stable laws (probability). MAURICE DE NEVE: The transformation of Bäcklund of pseudo-spherical surfaces. FRÉDÉRIC ROGER: The extension to the local structure of the most general Cartesian ensembles of the theorems of Denjoy on the derived numbers of continuous functions. GEORGES GIRAUD: The existence of certain derivatives of Green's functions: consequences for problems of the Dirichlet type. W. STERNBERG: Extended integral equations. HENRI PONCIN: The structure of potentials which lead to stable hydrodynamic configurations. JEAN LOUIS DESTOUCHES: The properties of the spin of a system of corpuscles. JEAN LAGRULA: The correction of the errors due, in photographic photometry, to the heterogeneity of the blackening of the plate. It is known that a given illumination acting during a fixed time does not correspond to the same blackening at all points on the plate, and this effect has been regarded as irremediable. The present note develops a means of correcting for this, capable of reducing the error to the same order as that of the accuracy of the measurements. BERNARD LYOT: Observations of the solar prominences made at the Pic du Midi in 1935. Results of the study of the prominences by means of colour filters and of the movements of the prominences by slow cinematograph films, later viewed at an accelerated rate. The latter method promises interesting results. PIERRE HUMBERT: The discovery of the phases of Mercury. Evidence of the priority of Malapert as regards this discovery. Z. CHRAPLYWY: The equations of motion of the new electrodynamic. PIERRE GIRARD and PAUL ABADIE: Molecular interactions and the structure of liquids. PIERRE JOLIBOIS: The structure of the spark striking the surface of a solution. PIERRE JACQUET: The mechanism of the electrolytic polishing of copper. Diagrams are given showing the changes in the profile of the anode in the course of the electrolysis. CHARLES SADRON: Double refraction produced by mechanical deformation of some pure liquids. Comparing his experimental results on six pure organic liquids with those calculated from the theory of Raman and Krishnan, the author concludes that the latter is not in close agreement with experiment and scarcely gives the order of magnitude of the phenomena. RENÉ AUDUBERT: The mechanism of the emission of light by chemical reactions. Mlle. CÉCILE STORA: The Becquerel effect and photochemical sensibility of some fluorescent colouring matters. JEAN

SURUGUE: The radiation of an active deposit of actinon. WITOLD BRONIEWSKI, J. T. JABLONSKI and ST. MAJ: The solidification diagram of the copper-zinc alloys. The alloys were homogenised by prolonged annealing at 400° C., 2,000 hours for the study of the critical points. The experimental results are given as a diagram. GABRIEL VALENSI: Causes of anomaly in the kinetics of the oxidation of metallic powders. Studies of the effects of roughness of the surface of the metal, of porosity and of irregularities of the dimensions. ANDRÉ LÉAUTÉ and THÉODORE VIERFOND: The ageing of tars used for road surfacing as a function of the amount of carbon. The addition of carbon as a filler appeared to be advantageous from experiments in the laboratory. The results of road tests, with subsequent analyses of the exposed material, confirm this view. JEAN HERMAN: The autoxidation of the hydroxides of iron, manganese and cobalt. ADRIEN PERRET and ROGER PERROT: Researches on magnesium cyanamide. Study of the temperature range over which magnesium cyanamide is stable. ARMAND MARIE DE FICQUELMONT: The hydrolysis of phosphorus dichloronitrides and of their amines. HENRI CLÉMENT: The organomagnesium compound of pentamethylbenzene. GEORGES DARZENS and ANDRÉ LÉVY: The synthesis of 1,9-dimethyl-3-carboxy-tetrahydrophenanthrene acid and of 1,9-dimethylphenanthrene. LOUIS ROYER: New observations on the decrease of a calcite crystal in an active isotropic medium. Remark on the corrosion figures in dolomite. EDMOND SAURIN: The geological constitution of the province of Phu-Yên (South Annam). GÉRARD GAZET DU CHATELIER: A new type of interphase nucleus. MAURICE HOCQUETTE: Remarks on the composition of the secretion of *Primula obconica*. MARCEL CHOPIN: The examination of wheats and flours by means of the extensimeter. Mlle. JEANNE LÉVY: Study of the fixation of alcohol on the encephalus of the rat, experimentally made alkalotic. CH. DHÉRÉ and O. BIERMACHER: The fluorescence spectra of deuteroporphyrin and pyroporphyrin. Fine structure, emission in the near infra-red.

COPENHAGEN

Royal Danish Academy of Sciences and Letters, October 18. ELIS STRÖMGREN and ERIC SINDING: The original orbit of Comet 1904 I (Brooks). ELIS STRÖMGREN and HANS Q. RASMUSEN: The orbit of comet 1929 I (Schwassmann-Wachmann) in the years 1920-36. P. BOYSEN JENSEN: The distribution of the growth substance during the geotropic curvature of stems and roots.

November 1. VALD. HENRIQUES: Investigations on the ability of cations to penetrate the membrane of blood corpuscles. TH. MORTENSEN: Studies on antarctic echinoderms.

November 15. OLUF THOMSEN: Demonstration of small amounts of gonadotropic hormone in the urine of normal subjects (investigations made in collaboration with K. PEDERSEN-BJERGAARD). CARL M. STEENBERG: An anatomical and systematic investigation of the pulmonate gastropod, *Gonidomus pagoda*, Fér., from the Island of Mauritius.

November 29. S. ORLA-JENSEN (in collaboration with AGNETE SNOG-KJÆR): The vitamin requirements of various bacteria. S. ORLA-JENSEN: Growth factors present in peptones. O. NEUGEBAUER: Mathematical cuneiform texts.