

Belgrave Literary and Scientific Institution

On Saturday, May 3, 1834, as reported in the *Times*, a public meeting was held to give effect to the arrangements of the provisional committee of the Belgrave Literary and Scientific Institution, and for opening the Institution for the accommodation of members. Earl Fitzwilliam presided and the report of the committee said that the foundation of the Society had been laid by voluntary subscriptions of books, and that it was intended to open No. 30, Sloane Street for the purposes of the Institution. Dr. Lardner and others had offered to give lectures gratuitously, the Duke of Sussex had consented to accept the office of patron and Earl Fitzwilliam that of president.

A New Orchid

Probably the most important account in *Curtis' Botanical Magazine* for 1834 is that of the first flowering of the new orchid *Epidendrum bicornutum* from Trinidad, which occurred in April 1834 at Wentworth Gardens, the seat of Earl Fitzwilliam, under the care of Mr. James Cooper, the celebrated orchid grower. The specimen is described (p. 3332) as having produced large and highly fragrant blossoms, which smell like the Persian Iris. This plant was introduced into England by Mr. John Sheppard, curator of the Liverpool Botanic Gardens, marked as "*Cattleya* n.sp." It had many points in common with that genus, especially in its general habit and the large flower, but differed remarkably in the labellum and the shortness of the column. The specimen was sent to Prof. Lindley who replied to the editor: "Your Trinidad orchideous plant is certainly a new species but I think it can not be separated from *Epidendrum*. The only distinction between it and that Genus consists in the labellum being distinct from the column: but you will find various degrees of separation between those parts in *E. asperum*, *venosum*, *vitellum* and *bidentatum* which nobody can doubt are genuine *Epidendra*. Should you, however, be of opinion that it nevertheless must form a new Genus, its character will have to depend upon the large size of the petals and the slight adhesion of the sepals to their base. The latter is however a falacious character and the former occurs in what I consider true *Epidendra*."

Other Flower Records

Further interesting records of the flowering of rare orchids and other plants introduced into Great Britain occurred in April 1834, mostly at Kew Gardens. In *Curtis' Botanical Magazine* (p. 3401; 1835) is described the first flowering at Kew of *Pteostylis acuminata*, the acuminated pteostylis (Orchidæ), of a singular Australian genus introduced by Mr. Cunningham from Port Jackson in 1827. *Acacia elongata* (Leguminosæ) a slender and beautiful species from the Blue Mountains of New South Wales and the interior to the west of Port Jackson, originally discovered during the first expedition of Mr. Oxley to the Lachlan River in 1817 and introduced into England in 1823, when the plants were received at Kew, was in full flower at the latter gardens in April 1834. Another flowering record of the month, in the gardens of Mr. William Christy at Clapham Road, was *Schinus molle*, the Peruvian mastick tree (Terebinthaceæ), which grew wild in Chile, Peru and Mexico. The occurrence is recorded, with a plate of the bloom, in the 1834 volume.

Societies and Academies

LONDON

Society of Public Analysts, April 4. GUY BARR and A. L. THOROGOOD: Determination of small quantities of fluorides in water. The reagent consists of an aqueous solution of zirconium oxychloride and sodium alizarin monosulphate. The test is sensitive for 0.1 part of fluorine for concentrations up to 5 parts per million. A. W. MIDDLETON: A test for ethylene glycol and its application in the presence of glycerol. The test is based upon the oxidation of glycol to oxalic acid by means of nitric acid, whilst under the same conditions glycerol yields aldehydic substances. Glycerol does not interfere unless present to the extent of more than 75 per cent of the mixed alcohols, and the test is sensitive to 0.1 gm. of glycol in 10 ml. of aqueous solution. W. MATHER and W. J. SHANKS. Detection of diamines in leather. Tests are described whereby extremely small quantities of para- and meta-diamines can be detected in dyed and finished leathers. These diamines can be extracted from leather in the cold by means of *N/10* hydrochloric acid or 1 per cent acetic acid, and that precipitation of the extracted tannins with lead acetate does not interfere with the subsequent tests for diamines. The reagents used include 0.1 per cent solutions of dimethyl-*p*-phenylene diamine, dimethylaniline, aniline, *o*-toluidine, *p*-phenylene diamine, and *m*-toluidine diamine.

Royal Meteorological Society, April 18. D. BRUNT: The possibility of condensation by descent of air. From a consideration of the variation with height of the humidity-mixing-ratio, it is shown that in the stratosphere condensation can occur in descending air-masses which take up the temperature of their environment. The fact that saturated water vapour produces condensation when expanded adiabatically while other saturated vapours produce condensation when compressed adiabatically, is discussed briefly. D. DEWAR: An investigation of the statistical probability of rain in London. The paper gives an account of an investigation of the frequency of rain at Kew, based on hourly tabulations of rainfall from 1872 to 1921. Amounts of rain were classified as 'heavy', 'moderate', 'slight', or 'no rain', according as the quantity which fell in a 6-hour interval of the day was 1 mm. or more, between 0.5 and 1 mm., between 0.2 and 0.5 mm., or less than 0.2 mm. The intervals were taken as early morning, forenoon, afternoon and night, each division of the day being taken to cover an interval of 6 hours. Each month was divided into three periods of approximately 10 days. The probability of rain of a given amount in a given interval of the day during these periods was obtained by dividing the number of occasions on which rain of that amount had fallen by the number of possible occasions. A comparison between actual values and figures computed from the average probability shows that the frequency of 'heavy' rain in 6-hour intervals for individual days is distributed approximately according to a chance distribution. The average probability of rain in a 6-hour interval is: approximately 1 in 9 for heavy rain; approximately 1 in 20 for moderate rain; approximately 1 in 33 for slight rain. CALEB MILLS SAVILLE: Some rainfall variations, England and New England (U.S.A.). The maximum and minimum rainfall experienced during periods of from one to twelve consecutive months is

similar in both localities. Details are given as to the extremes of rainfall recorded at West Hartford (U.S.A.) for periods of 1-120 consecutive months. In Great Britain a run of wet years persisted before the present drought but in New England dry years predominated. This marked inverse relationship held from 1868 until 1932 in the case of residual mass curves, and from 1838 until 1932 with a somewhat different set of data expressing the rainfall as 5-year means.

PARIS

Academy of Sciences, March 5 (C.R., 198, 861-996).
 CH. FABRY: The use of the red cadmium line as a meteorological and spectroscopic standard. A discussion of the suggestion of Pérard that the red line of cadmium is unsuitable as a standard, because, under certain conditions, it can be changed into a fine doublet. In view of the work already carried out with light of this wave-length and of the ease with which this reversal can be avoided, the author disagrees with the view of Pérard. JEAN REY: The working of a thermocompressor carrying successively two compressible fluids of different densities. Experimental results. LUC PICART: The calculation of the orbits of the visual double stars. A. VAYSSIÈRE: The internal organisation of the nymphal larvæ of *Betisaca*. GASTON JULIA was elected a member of the Section of Geometry, in succession to the late P. Painlevé. BERTRAND GAMBIE: Tetrahedra inscribed in a biquadratic and circumscribed to a developable of class 4 genus 1 or to a quadratic. R. JACQUES: Certain congruences of spheres. GEORGES KUREPA: Directed ensembles. GEORGES GIRAUD: A new generalisation of questions relating to equations of the elliptic type. J. GERONIMUS: Some extremal properties of polynomials. SOULA: The zeros and poles of a meromorphic function in a sector. P. VINCENSINI: The centres of gravity of homogeneous finite bodies. J. OTTENHEIMER: The displacement of water in the course of submarine explosions. J. DUPUY: The application of interference to the study of the distribution of the pressures and velocities round the wing of an aeroplane. EDMOND BRUN: The heating by friction of a body undergoing rapid displacement in carbon dioxide. HENRI ROURE: An inequality with very long period of the mean motion of Pluto due to the action of Uranus. A. DAUVILLIER: The nature of the photosphere and of the electronic emission of the sun. P. SALET: The measurement of the velocity of the light coming from the stars. From an analysis of the experimental data available, the author concludes that the spectroscopic method gives different values for the velocity of light according to the spectral type. P. LEJAY and LOU JOU YU: Observations of the intensity of gravity in the north-east of China. The results of measurements with the Holweck-Lejay instrument for 37 stations are tabulated. BERNARD KWAL: Spinors and quaternions. L. DUNOYER: The measurement of small expansions. Suggested modification of the Chevenard interference dilatometer. P. DONZELOT, E. PIERRET and J. DIVOUX: Indirectly heated valves in the amplification of continuous currents. V. POSEJPAL: The materialisation of the polarised ether. F. BOURION and Mlle. D. BEAU: The magnetic study of hydrated thoria. Hydrated thoria behaves from the point of view of its magnetic properties as a mixture of water and a feebly paramagnetic hypothetical oxide, ThO_2 . P. LAINÉ: The magnetic properties of mixtures of

liquid ozone and oxygen. The magnetic susceptibility of pure liquid ozone. The specific susceptibility of liquid ozone, at temperatures near that of liquid air, is about 1.5×10^{-7} , with a thermal variation certainly less than one third of that which would be predicted from Curie's law. ALBERT PERRIER and Mlle. T. KOUSMINE: Longitudinal magneto-thermoelectric effects in nickel and iron: theoretical interpretations. P. DEBYE, H. SACH and F. COULON: Experiments on the diffraction of light by ultra-sonic vibrations. F. WOLFERS: The diffraction phenomena of Fresnel with a large source [of light]. PICON: Some solubilities of quinine iodobismuthate. The behaviour of the quinine salt with acetone, cyclohexanone and ethylene glycol is described. PARISELLE: Polarimetric researches on narcotine. Narcotine, lævrotatory in organic or neutral media, is dextrorotatory in acid or basic solution. Mlle. SABINE FILITTI: The oxido-reduction potential of the system xanthine \rightleftharpoons uric acid. VICTOR LOMBARD and CHARLES EICHNER: An attempt at the fractionation of hydrogen by diffusion through palladium. Hydrogen which has been diffused through palladium diffuses at a different rate from the non-diffused hydrogen. The authors are not inclined to ascribe this difference to the accumulation of impurities, but consider that the fractions probably contain different proportions of allotropic varieties of hydrogen. EDOUARD RENCKER: Study of the softening point of vitreous bodies by differential thermal analysis. MARCEL CHAUSSAIN and HENRI FOURNIER: The chemical methods of cleaning light and ultra-light metals after corrosion. The use of nitric acid for removing the products of corrosion of the light metals, requires a correction for the clean metal dissolved. A suitable method of obtaining this correction is indicated.

(To be continued.)

GENEVA

Society of Physics and Natural History, December 21.
 P. ROSSIER: The spectrographic photometry of the F_0 stars. On the basis of 120 spectrograms the author states and discusses the relation between the magnitude and the length of a spectrogram. This relation, which is linear, depends on the spectral type. F. BATELLI, D. ZIMMET and P. GAZEL: The epicephalic reflex in amphibians.

CRACOW

Polish Academy of Science and Letters, December 4. K. DZIEWONSKI and T. DUZYK: The action of chloroacetyl chloride on β -naphthol. P. LADA: Contributions to the genetics of fragile rye. J. WLODEK, MME. M. WODZICKA and E. RALSKI: Granitic soils covered with plants requiring lime (Morskie Oko, Haut-Tatra, Poland). K. GAJL: *Branchinecta paludosa* from the Tatra massif considered as a new species. Remarks on the morphology, ecology and zoogeographical distribution of this species. Zdz. RAABE: Certain species of the genus *Conchophthirus*. M. GIEYSZTOR: The group of species *Dalyellia viridis* (Rhabdocœla). F. BIEDA: The nomenclature and classification of certain species of Nummulina (3). Z. GRODZINSKI: The development and comparative anatomy of the axial blood vessels in the anterior extremities of vertebrates. J. ZACWILICHOWSKI: The innervation and the sensorial organs of the wings of the Trichoptera. B. SKARZYNSKI: Oestrogenic substances of plant origin. W. HEINRICH: The reaction of the capillary vessels of the rabbit during the working of the cortical centres.

January 8. S. MAZURKIEWICZ: Translative means and the law of Gauss. H. GAMS: The Starunia mosses considered as an index of the character of the flora and climate, as well as the principal petrifactions of the diluvial epoch. J. STACH: The genus *Oncopodura*, and also a new species belonging to this genus, found in the caves of north-east Italy. T. VETULANI and R. SCHULZE: The hypophysis of the small Polish horse representing the type of the tarpan horse (1 and 2).

LENINGRAD

Academy of Sciences (*C.R.*, No. 3, 1934). V. FOCK: New asymptotic expression for Bessel's functions. N. KOSHLIAKOV: On a certain definite integral connected with the cylindrical function $K_\nu(x)$. I. VERCHENKO and I. Kholmogorov: Discontinuities in the functions of two variables. A. KAPUSTINSKIĬ: The problem of the composition of air in the stratosphere. Samples of air brought from the stratosphere by Prokofiev proved to be almost identical with the air near the ground. This can be explained by the enrichment of the stratosphere by nitrogen owing to gravitation (Laplace's rule), and by oxygen through thermal diffusion as described by Dootson, Chapman and Endskog. G. KWATER, N. KREMENEWSKY and A. FILIPPOV: The absorption spectrum of thallium vapour in the ultra-violet. M. SAVOSTIANOVA: The problem of the excitation of an alkali-haloid crystal. A. CHICHIBABIN and M. OPARINA: The volatile base of Valerian roots. The base is a colourless oil, which does not crystallise at 0° C. and is insoluble in water. I. N. NAZAROV: On metal-ketyls of the aliphatic series (2). It is only secondary and tertiary radicals connected with a carbonyl group that make possible the existence of metal-ketyls. The stability of metal-ketyls is particularly increased by the tertiary heptyl $(C_2H_5)_3C$. K. GORBUNOVA and A. VAHRAMIAN: The mechanical activation of the surface of an electrode. The formation of the first microcrystals occurs at a lower potential when the surface of the electrode bears scratches, than when it is intact. A. CHARIT and I. FEDOROV: The oxidation and reduction processes during muscular contraction (2). The oxidation-reduction potential of blood and of urine under the influence of muscular work. The potential of arterial blood before work was 0.607 v., and after work 0.578 v.; figures for the venous blood were 0.580 v. and 0.557 v.; and for urine, 0.118 v. and -0.73 v. respectively. D. SABININ: (1) Exchange adsorption in root systems. Adsorption processes play an important part in the entrance of substances into cells, if the substances are derived from diluted solutions with varying values of pH and in the presence of surface active substances. (2) Influence of the technique and time of the introduction of fertilisers on the nature of plants. M. SHKOLNIK: The physiological rôle of boron. The absorption by plants of phosphate, nitrate and calcium decreases in the presence of boron, which therefore exercises an influence on the permeability of the protoplasm. V. CIVINSKIĬ: Capacity of cotton to withstand cold. Those varieties in which the concentration of the cellular sap was high proved to be most resistant to frost, but some other factors may also be of importance. B. B. ROHDENDORF: Some new species of Tachinids from U.S.S.R. Two new species of *Craspedothrix* (Diptera, Larvævoridæ). O. VIALOV and R. VIALOVA: The age of the tuffogenous suite of Caucasian flysh. The fossils indicate that the suite belongs to the Cenomanian.

Forthcoming Events

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

Monday, April 30

UNIVERSITY COLLEGE, LONDON, at 5.—Prof. C. Singer and K. J. Franklin: "The History of Physiology" (succeeding lectures on May 1, 2, 7, 8, 14, 15 and 22).*

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—F. Kingdon Ward: "The Himalaya East of the Tsangho Gorge".

Wednesday, May 2

ROYAL SOCIETY OF ARTS, at 8.—J. C. Wilson: "Trichromatic Reproduction in Television".

Thursday, May 3

KING'S COLLEGE, STRAND, W.C.2, at 5.—Prof. R. J. S. McDowall: "The Integration of the Circulation" (succeeding lectures on May 10, 17 and 24).*

INSTITUTION OF ELECTRICAL ENGINEERS, at 6.—Dr. M. Schleicher: "Modern Practice in Germany and other Parts of the European Continent with regard to Supervisory Control Systems as applied to Large Inter-connected Supply Areas".

CHEMICAL SOCIETY, at 8.—Discussion on "Unicellular Chemistry" to be opened by Dr. J. Vargas Eyre.

Friday, May 4

PHYSICAL SOCIETY, at 5.—Prof. C. V. Boys: "My Recent Progress in Gas Calorimetry" (Nineteenth Guthrie Lecture).

HUXLEY MEMORIAL LECTURE, at 5.30.—(in the Lecture Theatre, Huxley Building, Exhibition Road, South Kensington, S.W.7).—Prof. Johan Hjort: "The Restrictive Law of Population".

INSTITUTION OF MECHANICAL ENGINEERS, at 7.—R. C. Walker: "Photoelectric Cells and their Application". (Informal meeting.)

GEOLOGISTS' ASSOCIATION, at 7.30.—(in the Architectural Theatre, University College, Gower Street, W.C.1).—L. A. Wager: "Mount Everest and the Eastern Himalaya".

WORLD'S DAIRY CONGRESS, April 30—May 6.—To be held at Rome and Milan.

Official Publications Received

GREAT BRITAIN AND IRELAND

Air Ministry: Aeronautical Research Committee: Reports and Memoranda. No. 1582 (I.C.E. 887; T.V.C. 59): Torsigraph Investigations on a Radial Engine with and without a Spring Hub, with some reference to Damping. By B. C. Carter, N. S. Muir and H. Constant. Pp. 14+19 plates. (London: H.M. Stationery Office.) 1s. 6d. net.

OTHER COUNTRIES

Obras completas y Correspondencia científica de Florentino Ameghino. Vol. 12: Primera Sinopsis Geológico-paleontológica. Dirigida por Alfredo J. Torcelli. Pp. 770. (La Plata: Gobierno de la Provincia de Buenos Aires.)

Kungl. Svenska Vetenskapsakademiens Handlingar. Serien 3, Band 13, No. 2: Untersuchungen über Dunkelnebel. Von Carl Schälén. Pp. 47. (Stockholm: Almqvist and Wiksells Boktryckeri A.-B.)

Proceedings of the California Academy of Sciences, Fourth Series. Vol. 21, No. 13: The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 13: Diptera. By C. H. Curran. Pp. 147-172. (San Francisco.)

Smithsonian Institution. Explorations and Field-Work of the Smithsonian Institution in 1933. (Publication 3235.) Pp. iv+59. (Washington, D.C.: Smithsonian Institution.)

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