

Societies and Academies

Dublin

Royal Irish Academy, June 14

JOSEPH ALGAR and ISABELLA P. CAREY: The synthesis of flavonols: oxidation of flavindogenides. The oxidation in acetone solution of the flavindogenide 3-benzylidene flavanone by means of acidified potassium permanganate appears to give 3-hydroxy-3-benzoyl flavanone (I). The latter forms a monoxine and a monacetate. Gentle hydrolysis of (I) gives flavonol and benzoic acid. Products similar in constitution to (I) are obtained by the oxidation of the following flavindogenides: 3-anisylidene flavanone; 3-piperonylidene flavanone; 3-benzylidene-3',4'-methylenedioxy flavanone.

H. S. W. MASSEY: Creation of electron pairs by nuclear capture of neutrons. The probability of creation of electron pairs by the materialization of the energy freed in the capture of a neutron by a nucleus is calculated by a method not involving explicit introduction of light quanta.

C. B. MOFFAT: The mammals of Ireland. A catalogue is given of the species supposed to have any claim to inclusion in the fauna, with notes on the distribution and status of each. The list differs from Thompson's in including a much larger number of marine (chiefly oceanic) animals. Novelties among terrestrial mammals are few. They include, however, the Irish stoat (*Mustela hibernica*) and the Irish hare (*Lepus hibernicus*), both now marked as practically endemic. Three bats have been added to Thompson's list. There are also five new species of Rodentia. The pine-marten (*Martes martes*), is still known from ten counties; and the red deer (*Cervus elaphus scoticus*), though now confined as a strictly native species to a protected area in Kerry, has recently been shown to be living a perfectly wild life in a new home to which it has found its way among the Wicklow Mountains. The question of the admissibility of the wild cat (*Felis silvestris*) to a historic place in the Irish fauna is regarded as having been lately placed by Major Barrett-Hamilton in a new light.

Edinburgh

Royal Society, Edinburgh, July 5.

C. FORSTER-COOPER: The Middle Devonian fish fauna of Achanarras. This is the first section of a report on five seasons work in the flagstone quarry of Achanarras in Caithness and deals with the fishes of the genus *Dipterus*. Hitherto two forms, *Dipterus valenciennesi* and *D. platycephalus* have been considered as separate species differing in the structure of the scales and in the extent to which the skull is ossified. It is now shown that the difference is due to seasonal changes, as described by Westoll for the contemporary Crossopterygians, and that the two conditions alternate during the life of the fish, so that there is only one species represented and not two. The abundance of material has rendered possible a full restoration of the fish.

FLORA COCHRANE: A histological analysis of eye pigment development in *Drosophila pseudo-obscura*. A detailed examination of unstained histological sections of the eyes of wild type and various mutants of *D. pseudo-obscura* at various stages of development was made. This revealed that pigment in the form of granules appears in two types of pigment cells at two definite times during development

and that genes which alter the colour of the eyes do so by affecting these granules in three distinct ways: (1) by suppressing the formation of all or part of the granules laid down in one or both types of pigment cells during either or both phases of development; (2) by altering the rate of granule development; (3) by causing a qualitative change in the granules.

A. R. WATERSON and H. E. QUICK: *Geonemertes dendyi* Dakin, a land nemertean in Wales. Since 1935, a land nemertean had been known from several localities near Swansea. The external and internal characters are described. Details are given of the habits, mode of feeding, and reproduction. The habitats are all damp places near streams or trees, and the nemerteans occur under stones and fallen branches. The sites seem to be free from contamination from exotic sources. Land nemerteans have not previously been found living under natural conditions in Europe.

R. S. BROWN: The anatomy of *Ophelia cluthensis* McGuire. An account of a polychaete worm which seems to be fairly common in the sand just below high water neap tide, not only in the Clyde estuary, from where it was originally described, but also in other parts of Great Britain and northern Europe. The species was created by McGuire in 1935, but her description was very incomplete, and the present account gives much fuller details of its specific characters and also a discussion of its affinities with other members of the genus. The description of the anatomy includes an account of the lymphatic corpuscles, which in this genus consist of two types of cells: (i) small disk-shaped cells 15-20 μ in diameter, with radiating processes; and (ii) larger irregular cells, 40-150 μ in diameter, containing a dense central body usually in the form of a club. Reproductive cells are also found in the coelomic fluid.

Paris

Academy of Sciences, June 14 (C.R., 204, 1769-1848).

ANDRÉ BLONDEL: The search for short light signals by navigators. Discussion of the effects of the duration of the light signals from the physiological point of view.

GEORGES CHARPY: The definition of the *nuance* of steels.

JACQUES DE LAPPARENT: The mineralogical nature of the clays of El Golea (Sahara).

OTTOKAR BORUVKA: Multiplicative systems.

MICHEL GHERMANESCU: A problem of Laguerre.

RICHARD BRAUER: The multiplication of the characteristics of continued and semi-simple groups.

KUNTZMANN: Multifunctional operations. Hypergroups.

M. KELDYCH and MICHEL LAVRENTIEFF: The problem of Dirichlet.

P. DUPUIS, H. GUILLEMET and ANDRÉ MARTINOT-LAGARDE: The determination of the trajectories of the water particles in the flow through a centrifugal pump.

JACQUES VALENSI: A new method for the measurement of the delivery through a tube placed in a current of air of uniform velocity.

RENÉ HIRSCH: The automatic stabilization of aeroplanes.

PIERRE AUGER, PAUL EHRENFEST, JUN., ANDRÉ FREON and MME. THÉRÈSE GRIVET: The mechanism of the production of cosmic bundles. The experimental results described support the mechanism of production indicated by Bhabha and Heitler for the soft cosmic rays, that is, the group of electrons and photons present in the lower atmosphere.

NICOLAS PERAKIS and LÉANDRE CAPATOS: The thermomagnetic study of the complex compounds $(Ag_xCd_y4C_5H_5N)S_2O_8$.

MARCUS BRUTZCUS: The heat of formation of hydrocarbons.

J. TIMMERMANS and H. BODSON: The surface tension of water and that of heavy water. The variation of the surface tension of water with temperature shows an anomaly at 13° C.; with heavy water this appears at 17° C. This anomaly has not been detected by other workers on this subject.

G. DUCH: The variations of the mechanochemical constants of the benzene hydrocarbons along the vaporization curve with origin at 74.5 cm. mercury.

PAUL BARY and JEAN HERBERT: The transformation points of glasses.

ALBERT TIAN and EDOUARD GAND: The ionic dissociation of the alkyl halides. Experimental evidence that, contrary to the view usually accepted, alcoholic iodides in aqueous solution behave as weak electrolytes.

CARSTEN HOLTERMANN and PAUL LAFFITTE: A new oxide of lead. The existence of Pb_2O_{11} has been proved from a study of the composition of the oxide as a function of the temperature under a pressure of 200 atmospheres. The only other oxides indicated on the curve are PbO_2 and the red Pb_3O_4 .

VICTOR AUGER and Mlle. NINA IVANOFF: The molybdenum blues. Amorphous colloidal molybdenum blue. The only molybdenum blue appears to be that described by Guichard with a formula $Mo_6O_{17}, 7H_2O$. This blue is amorphous and colloidal.

MME. NATHALIE DEMASSIEUX and LOUIS ROGER: A complex compound formed by lead iodide and lithium iodide in aqueous solution. This has the constitution $PbI_2LiI, 4H_2O$.

LOUIS HACKSPILL and GEORGES WOLF: The thermal decomposition of the barium carbonates.

MICHEL LESBRE: Some halogen organic derivatives of lead.

ANDRÉ MEYER and HENRI DRUTEL: Salts and complex compounds of 6-methyl and 8-methyl-4-hydroxyquinolines.

GUSTAVE VAVON and JEAN BOLLE: The condensation of the benzene hydrocarbons with chlormethyl ether. Method of alkylation of aromatic nuclei.

ANDRÉ DEMAY: The role of static and dynamic phenomena in the genesis of the Cristallophyllian.

JACQUES FLANDRIN: The attribution to the Oligocene of a part of the Nummulitic strata of the Kabylie of Djurdjura and its western prolongation (Algiers).

JEAN CUVILLIER: The presence of the marine Carboniferous in the ouadi Abou Darag (Arabian desert).

EDMOND ROTHÉ and MME. ARLETTE HÉE: Prospecting by the penetrating radiations in the trap and granite quarries of Raon-l'Étape.

LOUIS BOUNOURE: The fate of the germinal line in the russet frog after the action of ultra-violet rays on the lower pole of the egg.

TCHOU-SU and CHEN-CHAO-HSI: The spontaneous activation of the egg of the russet frog (*Carassius auratus*) in contact with fresh water.

MAURICE LEMOIGNE, PIERRE MONGUILLON and ROBERT DESVEAUX: The reduction of nitric acid to hydroxylamine by the higher plants. The role of ascorbic acid. The juice of lilac reduces nitrites to hydroxylamine and under the same experimental

conditions ascorbic acid behaves similarly. Ascorbic acid is always present in the leaves and hence is probably the cause of the reduction of nitrite by the juice.

MICHEL A. MACHEBOEUF, MMES. GEORGETTE LÉVY and MARGUERITE FAURE: Researches on the chemical nature of the lipid-fixing haptene of tubercle bacilli. Chemical study of the purified active fraction.

PIERRE LÉPINE, PIERRE MOLLARET and BORIS KREIS: The receptivity of man to the murin virus of lymphocytary choriomeningitis. The experimental reproduction of benign lymphocytary meningitis.

Washington, D.C.

National Academy of Sciences (*Proc.*, 23, 251-294, May 15).

F. ZWICKY: A new cluster of nebulae in Pisces. During September and October last year, more than a hundred photographs with exposures of ten to thirty minutes were obtained at Mount Palomar with the new 18-inch Schmidt telescope of the Carnegie Institution of Washington; characteristic features of the instrument are effective aperture 18 inches, focal ratio $F/2$, diameter of field used about 9.5°, limiting magnitude about 17.5. A large swarm of nebulae in Pisces of large extension and asymmetrical shape suggesting rotation of the whole was observed.

R. A. GORTNER and H. B. BULL: Electro-kinetics. (19) Interfacial energy and the molecular structure of organic compounds. (v) The electric moment of Al_2O_3 : benzene-nitrobenzene interface.

JENNY E. ROSENTHAL and LLOYD MOTZ: Application of a new mathematical method to vibration-rotation interaction.

K. G. SCOTT and S. F. COOK: Effect of radioactive phosphorus upon the blood of growing chicks. Growing White Leghorn chicks were given substantial doses of radioactive phosphorus (prepared by irradiation of red phosphorus) in the form of phosphoric acid. It gave rise to effects not obtained with X-rays. Lymphocytes, which are sensitive to X-radiation, were little affected; polymorphonuclear leucocytes, which are not much affected by X-rays, were much decreased in number. These effects are attributed to deposition of the radioactive phosphorus in the bones, which allows bombardment with radiation of the bone marrow, the source of the polymorphonuclear leucocytes, whereas X-rays only reach the marrow with difficulty.

J. VAN OVERBEEK: Effect of the roots on the production of auxin by the coleoptile. If the root systems of *Avena* seedlings are removed, after 15-20 hours the auxin production is much reduced, causing decreased growth. When both roots and seed are removed, the plants do not 'regenerate' and their curvatures increase steadily. It is suggested that auxin itself and a precursor are present in the seed; the latter is transported independently of the root system, and the former in the transpiration or root-pressure stream.

F. D. MURNAGHAN: The irreducible representations of the symmetric group.

G. A. MILLER: Groups of order less than 2^m having $m - 1$ or $m - 2$ independent generators.

H. WHITNEY: Products in a complex.

A. GLEYZAL: Linear orders.

C. H. DOWKER: Hopf's theorem for non-compact spaces.