

Societies and Academies

London

Royal Society (*Proc.*, A, 166, May 19, 1938).

T. H. HAVELOCK: The lift and moment on a flat plate in a stream of finite width.

J. DE GRAAFF HUNTER: Some experimental observations for longitude made by theodolite fitted with a shutter eyepiece.

L. LANDAU and G. RUMER: The cascade theory of electronic showers.

W. COCHRANE: Polish on metals.

H. G. HOWELL and N. COULSON: The spectrum of thallium chloride.

F. HOYLE: β -Transitions in a coulomb field.

A. C. B. LOVELL: The electrical conductivity of thin metallic films. (3) Alkali films with the properties of the normal metal.

P. L. KAPUR and R. PEIERLS: The dispersion formula for nuclear reactions.

G. S. RUSHBROOKE: A note on Guggenheim's theory of strictly regular binary liquid mixtures.

ALEX MÜLLER: The dielectric polarization of a long chain ketone at constant volume and variable temperature.

Dublin

Royal Dublin Society, April 26.

G. F. MITCHELL: A recent bog-flow in County Wicklow.

A. G. G. LEONARD: A preliminary account of investigations on atmospheric pollution in Dublin. Systematic measurements of deposited solids have been carried out for the first three months of this year, and show that the solid matter falling on Leinster Lawn (Dublin City South) was deposited at the rate of 50 tons per square mile in that time. This included about 17 cwt. of tar. The rainfall during the period was 3.94 in.—an exceptionally low figure. Measurements of suspended impurity have been made hourly during February and March; the results obtained show a close approximation to those found at Westminster during winter months. Pollution due to sulphur showed a slight decrease from January to March.

Paris

Academy of Sciences, April 11 (*C.R.*, 206, 1153–1206).

HENRI DESLANDRES: The universal constant of band spectra. The attribution of the lines of the band to causes other than the rotation of the molecule.

GEORGES GIRAUD: New extension of a type of problems relating to equations of the elliptic type.

MARCEL BRELOT: The problem of Dirichlet and sub-harmonic functions.

BORIS GERMANSKY: The systems of Fekete points of an arc of a circle.

LÉOPOLD ESCANDE: New theoretical researches on flow through an immersed gate valve.

MME. MARGUERITE MOREAU-HANOT: The transport of ions by a gaseous current. The expansion of an ionized gaseous column.

HANS VON HALBAN, JUN.: The energy and intensity of the photon-neutrons of beryllium and of deuterium.

ROGER SERVANT and BELLING TSAI: A direct reading apparatus for the measurement of magnetic fields.

PIERRE LAMBERT and JEAN LECOMTE: The infra-red absorption spectra of isomeric fatty hydrocarbons. Data are given for two isomeric pentanes and 17

isomeric octanes. The infra-red absorption spectra between 500 and 1,450 cm^{-1} can be utilized for the identification of the hydrocarbons in mixtures.

MARCUS BRUTZCUS: The structural formulæ of unsaturated hydrocarbons.

ETIENNE CANALS and PIERRE PEYROT: The Raman spectra of some crystalline powders.

LOUIS ROGER: The study of a complex compound of lead and lithium iodides.

MAURICE MARIE JANOT and ROBERT GOUTAREL: Corynantheine.

DENIS DUVEEN: Anionotropic changes of the (+) and (–) α -phenylallyl alcohols.

CONRAD KILIAN and XAVIER LANGLOIS: The discovery of a sea urchin of Cretaceous age (middle or upper) in the Enneri Chelemma at the northern Touareg-Tebou borders of the French Sahara.

ANDRÉ EICHHORN: The caryological study of some species of *Phaseolus*.

JACQUES ROI: Some colonies of Eurasiatic remains at the stage of *Quercus ilex* (eastern Mediterranean region).

PHILIPPE L'HÉRITIER and GEORGES TEISSIER: A peculiar hereditary mechanism in *Drosophila*.

PAUL ANCEL and PAUL WINTEMBERGER: The determinism of bilateral symmetry in the egg of vertebrates.

ALBERT PEYRON, ANDRÉ BONNARD and BERNARD LAFAY: The gemellary or parasitic origin of tumours with multiple tissues in the sacro-coccygian region.

FRANÇOIS ARTIGAS: The emission of an ionizing radiation by the dry material of plants.

PAULO DE BERREDO CARNEIRO: The active principles of curare.

JEAN CHEVÉ: The properties of a meningococcal endotoxin obtained by the method of A. Boivin.

Capetown

Royal Society of South Africa, April 20.

J. W. C. GUNN: Therapeutics, past and present.

W. S. S. LADELL: Effect of alcohol and alcoholic extracts on growth of tissues *in vitro*.

J. F. SCHOFIELD: A preliminary study of the prehistoric beads of the Northern Transvaal and Natal.

F. RICH: Some Transvaal desmids.

Geneva

Society of Physics and Natural History, March 17.

RENÉ DE SAUSSURE: The structure of geometries in Euclidian space of three dimensions. The author gives an account summarizing his works on geometry published in the "Archives des sciences physiques et naturelles" of Geneva from 1898 to 1921. These works have led to the creation of two new geometries, that of the "feuilletts" and that of the "feuilletts-cotés".

GEORGES TIERCY: The solution of the equation of the transfer of energy and the problem of radiative equilibrium. The object of this note is to establish, by a calculation different from the usual one, a known formula giving the value of the intensity of the radiation as a function of the opacity.

GEORGES TIERCY and CHARLES GOLAZ: The velocity of the wind as a function of the altitude. Is an approximate solution, with η constant, suitable? This question is answered in the negative, since the solution would then contain only periodic terms, and this is not in agreement with observation.

PAUL ROSSIER : (1) The identity of the hypotheses of Armellini and Russell on the theory of the colour index. The first assumes the constancy of the effective wave-length, the second the concentration of the sensibility of the eye on one unique wave-length. These two systems are equivalent. (2) The isodiametric curves in a Hertzsprung-Russell diagram. These curves are practically parallel straight lines.

EMILE CHERBULIEZ and M^{lle}. MARIA FULD
Researches on the acidolysis of esters. The study of the displacement in an ester of the acid radical by that of another acid (acidolysis) shows that the mechanism of this reaction is not that of the saponification of the ester by the traces of water always present in these substances entering into reaction, a saponification which would be followed by an esterification of the free acid added by the alcohol resulting from this saponification. This conclusion follows from the fact that gaseous hydrogen chloride, which accelerates both reactions (esterification and alcoholysis), is without action on acidolysis.

DON ZIMMET : Ascorbic acid, acetylcholine and the blood pressure. Small quantities of acetylcholine produce a marked lowering of the blood pressure when this substance is introduced into the body by intravenous injection. This effect may be largely diminished or even completely prevented by subsequent intravenous injections of ascorbic acid.

Moscow

Academy of Sciences (*C.R.*, 18, No. 4-5; 1938).

N. W. ADAMOFF : A method of successive approximations.

M. LAURENTIEFF : Theory of tracks.

S. HALPERN : Conditions under which the problem of Cauchy, for a system of equations with partial derivatives of the first order, would be correctly stated.

B. GNEDENKO : Convergence of distribution laws of sums of independent quantities.

V. KONDRACHOV : On certain evaluations in the case of groups of functions corroborating some integral inequalities.

N. ACHYESER : The best approximation of analytical functions.

M. KREIN : Some points in the theory of the best approximation of periodic functions.

B. D. KAMINSKY : Curves on a surface with normal constant curvature.

J. SIRVINT : Integral transformations of the space L .

L. NEUSCHULER : Tables of products of minimum space.

S. M. RYTOV : Transition from the wave optics to geometrical optics.

A. F. BELAJEV : Production of detonation in explosives under the action of thermal impulse.

M. S. KONDAKOWA and M. M. KATZNELSON : 1-propyl-2-methylvaleric acid and the 1,2-dimethylcapronic acid.

F. M. SEMIAKIN and A. N. BELOKON : (1) New colour reactions between tetravalent cerium and salts of aromatic acids. (2) New drop reactions of vanadates and molybdates with α -nitroso- β -naphthol.

D. S. BELIANKIN and V. P. IVANOVA : Behaviour of montmorillonite at high temperatures.

A. P. VINOGADOV : Biogeochemical provinces and endemics.

W. I. VERNADSKY : Terrestrial aluminophosphorous and aluminosulphurous analogues of kaolinic aluminosilicates.

O. E. ZVIAGINCEV : Osmiridium with a cubic crystalline lattice.

S. N. ALESHIN and E. IGRITSKAIA : Availability to the plant of phosphates adsorbed by soil.

F. D. SKASKIN : Concerning the physiology of the critical period. The lack of water in the soil.

V. G. ALEXANDROV and O. G. ALEXANDROVA : Structure of shrivelled ('meagre') grains of hard wheat.

D. M. STEINBERG : Comparative data on wing regeneration in butterflies.

Rome

National Academy of the Lincei (*Atti*, 26, 305-354; 1937).

U. CISOTTI : Sources in disperse media.

N. OBRECHKOFF : Zeros of some polynomials.

G. FACCIOOTTI : Concerning the 'asphericity' at an ordinary point of a surface.

F. FIORENTINI CAMPOLIETI : A particular dynamic solution of the cosmological problem (1).

G. LAMPARIELLO : Extension of Jacobi's virial theorem and relationships of minimum kinetic energy.

E. VOLTERRA : Calculus of arched suspension bridges.

O. ZANABONI : Concerning the approximation due to de Saint-Venant's principle in isotropic prismatic solids.

E. GHIGI : Constitution of Liebermann's benzanthrone.

V. PÀROLI : Observations on the embryology of *Tamarix gallica* L.

Atti, 26, 355-432; 1937.

T. LEVI-CIVITA : Families of isoparametric surfaces in ordinary Euclidean space.

O. SCARPA : Cathodic growths which are observed in the electrolytic refining of tin.

P. VINCENSINI : A class of convex functions.

C. PAUC : Triangular inequality in the generalized spaces of Minkowski.

N. ARONSZAJN : Some problems concerning the spaces of Minkowski and the general vectorial spaces.

F. FIORENTINI CAMPOLIETI : A particular dynamic solution of the cosmological problem (2).

G. LAMPARIELLO : Substantial variations in the motion of a continuous system.

F. TRICOMI : Theory of the elastic arc with a circular directrix.

G. ZANOTELLI : The form of the vibration of light in a medium subjected to an alternating magnetic field.

P. GUARESCHI : Considerations concerning molecular potential energy (1). Calculation of molecular heats of liquids (2).

G. TEDESCHI : Rate of dissolution of lead in acids (3).

V. MONTORO : Preferential orientation of crystallites in some abnormal deposits of electrolytic copper.

A. CORRADETTI : An Asiatic species of *Anopheles* found in Abyssinia (*A. dthali* Patton, 1905).

V. PUNTONI : Studies of the genus *Trichosporon* Behrend.

U. AMALDI : Memorial lecture on Salvatore Pincherle.

Vienna

Academy of Sciences, January 27.

S. MEYER: Radioactive constants of uranium and radium.

H. HAUSNER: (1) Relation between irradiation and photosynthesis in *Elodea densa*. Empirical formulæ are given for the gas evolution as a function of the duration of illumination and for the rate of evolution of gas as a function of the intensity of illumination. (2) Variation of the production of oxygen with the intensity of illumination in photosynthesis by *Elodea densa*. The percentage of oxygen in the evolved gas increases steadily with the intensity of illumination.

E. MELAN: Distribution of stress in a Mises-Hencky continuum.

K. GRAFF: Selective absorption in the neighbourhood of Cassiopeia. The existence of one, or possibly two, absorbing clouds is deduced from the variation of colour excess with distance. The density of the cloud shows that it is not gaseous, but dust-like.

A. KAILAN and F. KUNZE: Action of ultra-violet light on halogen substituted fatty acids in aqueous solution. The quantum yield and dissociation constant are found for fourteen acids.

R. SKRABAL: Velocity of saponification of methyl di- and tri-chloroacetates.

M. PESTEMER and H. FLASCHKA: Influence of the position of the substituent on the ultra-violet absorption of benzene chromophores (3).

Washington, D.C.

National Academy of Sciences (*Proc.*, 24, 107-164, March 15).

A. G. STEINBERG and M. ABRAMOWITZ: The bar 'locus' and the v^+ reaction in *Drosophila melanogaster*.

H. S. JENNINGS: Sex reaction types and their interrelations in *Paramecium bursaria* (1). Four sex reaction types have been discovered in two clones under investigation. Individuals of any one type will clot and conjugate only with individuals of the other three types. (2) Clones collected from natural habitats. Examination of clones obtained from different localities showed nine sex reaction types, falling into two independent groups the members of which do not conjugate with each other.

C. M. OSBORN: Role of the melanophore-dispersing hormone of the pituitary in the colour changes of the catfish. Experiments on reactions to black, intermediate and white backgrounds of fish from which the pituitary has been removed indicate that this hormone causes about two thirds of the darkening reaction. Removal of pituitary does not inhibit colour change, but limits the range of shades the fish may assume.

W. J. CROZIER, E. WOLF and GERTRUD ZERRAHN-WOLF: Duplexity theory of visual response in vertebrates. Plotting flicker frequency against log critical intensity for a turtle gives a smooth probability integral curve. There is no 'rod-effect' hump shown by similar curves obtained with other vertebrates, and this fact is correlated with the absence of rod cells from the retina of the turtle.

W. J. CROZIER and A. H. HOLWAY: Law for minimal discrimination of intensities (3). Experimental results on visual intensity discrimination support the view that the observed variations are due primarily to the fluctuating reactive capacity of the organism rather than to experimental error.

C. P. HASKINS and E. V. ENZMANN: Determination of the magnitude of cell 'sensitive volume' associated with the white-eye mutation in X-rayed *Drosophila* (3). Plotting percentage of affected eyes against duration of irradiation with a single wave-length of X-rays at 4°, 26° and 46° C. gives for males a straight line. That for females is different. The minimum limiting volume of a single locus for white eye is found to vary from 1.09×10^{-18} to 1.50×10^{-18} c.c. at 4° and 46° respectively.

W. J. ROBBINS and F. KAVANAGH: Specificity of (1) pyrimidine and (2) thiazole for *Phycomyces Blakesleeanus*.

H. SHAPLEY: Problem of the expanding universe. A discussion of a survey of the galaxies to the eighteenth magnitude in the south galactic polar cap, from plates made with the 24-inch Bruce doublet at Bloemfontein, and other data, leads to the view that there is, at present, no need to dispute on the grounds of nebular counts the attribution of red-shift to recession.

G. BIRKHOFF. Dependent probabilities and spaces (1).

E. HILLE: Semi-groups of transformations in Hilbert space.

M. WARD and R. P. DILWORTH: Residuated lattices.

Forthcoming Events

Wednesday, June 15

BOARD OF GREENKEEPING RESEARCH, at 10.—Annual Conference and opening of the Permanent Implement Exhibition at the St. Ives Research Station, Bingley, Yorkshire.

Thursday, June 16

ROYAL SOCIETY, at 4.30.—Prof. C. K. Ingold, F.R.S.: "The Structure of Benzene" (Bakerian Lecture).

INTERNATIONAL CONFERENCE OF NAVAL ARCHITECTS AND MARINE ENGINEERS, June 16-18. To be held in London.

Appointments Vacant

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:

HEADMASTER of the Schofield Technical Institute, Mexborough—E. B. Stockdale, Education Office, Mexborough (June 13).

ASSISTANT IN ELECTRICAL ENGINEERING in the Stockton-on-Tees Technical School—The Director of Education, Shire Hall, Durham (June 17).

TWO LECTURERS IN THE CIVIL AND MECHANICAL ENGINEERING DEPARTMENT of the Woolwich Polytechnic, London, S.E.18—The Secretary (June 17).

LECTURER IN METALLURGY in the Sir John Cass Technical Institute, Jewry Street, Aldgate, E.C.3—The Principal (June 18).

LECTURER IN CHEMISTRY in the Acton Technical College, High Street, W.3—The Principal (June 24).

ASSISTANT IN STATISTICAL RESEARCH in the University of Cambridge—The Secretary, Faculty of Economics, Marshall Library, Downing Street, Cambridge (June 27).

JUNIOR SCIENTIFIC OFFICER at the Building Research Station, Garston—The Establishment Officer, Department of Scientific and Industrial Research, 16 Old Queen Street, Westminster, S.W.1 (June 27—quote J. 38/6).

TEACHER OF METALLURGY in the Medway Technical College—The District Education Officer, Fort Pitt House, New Road, Rochester (June 30).

PRINCIPAL of the Municipal College of Technology, Manchester—The Director of Education, Education Offices, Deansgate, Manchester, 3 (June 30).

ASSISTANT LECTURER IN ORGANIC CHEMISTRY in the Manchester Municipal College of Technology—The Registrar (July 11).

PLANT PHYSIOLOGIST and a PLANT PATHOLOGIST to the Sudan Government—The Controller, Sudan Government London Office, Wellington House, Buckingham Gate, London, S.W.1 (July 15).

PROFESSOR OF PHYSIOLOGY and a PROFESSOR OF PURE MATHEMATICS in the University of Cape Town—The Secretary, South Africa House, Trafalgar Square, London, W.C.2 (July 23).

SENIOR LECTURER IN ELECTRICAL ENGINEERING in the County Technical College, Mansfield—The Principal.