

"The author here prosecutes the inquiry on the dispersion of light which was the subject of his former papers published in the Philosophical Transactions for 1835 and 1836, extending it to media of higher dispersive powers, which afford a severer test of the accuracy of M. Cauchy's theory. He explains his method of calculation and the formulæ on which his computations are based. On the whole he concludes that the formula as already deduced from the undulatory theory, applied sufficiently well to the case of media whose dispersion is as high as that of oil of anise-seed : or below it, such as nitric, muriatic and sulphuric acids, and the essential oils of angelica, cinnamon, and sassafras, balsam of Peru and creosote. It also represents, with a certain approximation to the truth, the indices of some more highly dispersive bodies."

#### Faraday on the Views of Prof. Mossotti

THE evening meetings of the Royal Institution, said the *Athenæum*, began on January 20, 1837, when considerable interest was excited by its being known that Faraday was to deliver a lecture on the views of Prof. Mossotti, of Corfu, who has lately promulgated an opinion, that one general law would account for those forces of matter which are exhibited in universal gravitation, cohesion, and electrical attraction and repulsion. Faraday began by observing that the want of such general law had been strongly felt, and had latterly been more than hinted at by Babbage, Roget and other philosophers. He went on to speak of the nature of the forces of gravitation, cohesion and electrical attraction and repulsion, and then, according to the *Athenæum*, said: "Hence there is such an adjustment of these forces, that at certain distances, matter acts inversely as the square of the distance, producing gravitation ; but when the particles are nearer to each other, the powers are balanced, producing the state of cohesion ; and when they are still nearer, they exert that repulsion, which keeps the particles of every solid and fluid body out of actual contact".

#### Robert Thornton (1768-1837)

DR. ROBERT JOHN THORNTON, who was a prolific writer on botany and medicine, was born in 1768 and died on January 21, 1837. He received his medical training at Trinity College, Cambridge, where he attended Prof. Thomas Martyn's lectures, and at Guy's Hospital, where he was a pupil of the eminent surgeon Henry Cline. He qualified in 1793, and after further professional studies in Edinburgh, Dublin and Paris, and also in Holland and Germany, set up in practice in London, where he was for some time physician to the Marylebone Dispensary and lecturer on botany at Guy's Hospital.

At an early stage of his career, Thornton ruined himself by the publication of a magnificent folio in which contemporary artists and poets collaborated entitled "The Temple of Flora or Garden of the Botanist, Poet and Philosopher ; with picturesque plates in illustration of the Sexual System of Linnaeus" (1799-1804). He was also the author of "Practical Botany" (1808), "The Philosophy of Botany" (1808), "Outlines of Botany or an Introduction to that Science" (1810), and "A Grammar of Botany" (1811). His medical writings included "The Philosophy of Medicine" (1799-1800), "Vaccinae Vindiciae or a Vindication of the Cow Pock" (1806) and "The Prevention and Cure of the Venereal Disease" (1817).

## Societies and Academies

### Paris

Academy of Sciences, December 14 (*C.R.*, 203, 1301-1406).

LOUIS BOUVIER : Complementary observations on the claws of decapod crustaceans belonging to the Astacomorph section.

SERGE BERNSTEIN : The formula of approximate quadrature of Tehebycheff.

JEAN ANDRÉ VILLE : The convergence of the median of the  $n$  first results of an infinite series of independent experiments.

FRÉDÉRIC ROGER : The limits of a function at a point.

ALEX. FRODA : The properties characterizing the possibility of measuring multiform and uniform functions of real variables.

BERNARD SALOMON : Certain classes of reducers of oscillations of machine shafts.

DOUCHAN AVSEC : The ratio  $\lambda/h$  for vortices in longitudinal bands.

JEAN LABAT : The importance of Reynolds number in trials on small models. Results of an experimental study, using chronophotographs of particles of aluminium in suspension in water.

CHARLES CHARTIER : The structure of the general flow round a helix. Two diagrams based on a study by chronophotography.

L. CAGNIARD : The propagation of intumescences in directions with or against the current in rivers.

BERNARD LYOT : The spectrum of the solar corona in 1936, wave-lengths and the intensities of the emission lines.

DANIEL CHALONGE and HORIA SAFIR : Study of the variations of  $\gamma$ -Cassiopeia.

MME. MARIE ANTOINETTE TONNELAT-BAUDOT : Relation between the action function and the force which acts on the electron.

PAUL SOLEILLET : The interpretation of phase in the matrices of quantum mechanics.

GABRIEL DUCH : The determination of the surface tension of a liquid by the formation of drops at the end of a capillary tube in which the elongation of the meniscus is observed.

JAMES BASSET : Thermal exchanges in nitrogen and in hydrogen at ultra-pressures up to 6,000 kgm./cm.<sup>2</sup>.

MARCEL LAPORTE : The production of white light by the electrical luminescence of gases. The method is based on the production of discharges of very high intensity of very short duration through a gas (xenon), the discharges being repeated with a frequency sufficiently high to make use of the persistence of light impressions. In the arrangement described, the oscillating discharge has a period of  $8 \times 10^{-8}$  sec.

J. J. PLACINTEANU : The electronic nature of light.

CLAUDE CHARMETANT : The electrolysis of ferrous chloride, bromide and iodide and of ferric chloride in mixtures of water and ethyl alcohol.

JEAN JAFFRAY : The discharge spectrum in air of high-tension magnetos.

B. ROSEN and M. LLE. NINA MORGULEFF : Spectroscopic study of the constitution of sulphur vapour. Additional proofs of the existence between 3600 A. and 6000 A. of two absorption systems of sulphur vapour, one of which forms part of the principal system of S<sub>2</sub>.

FRANÇOIS GRISEL: The flow of water, under constant pressure, through a mass of concrete. The volume of water passing through is a linear function of the logarithm of the time; hence the permeability of a specimen of concrete, under constant pressure, can be determined by measuring the volume passing during a relatively short time.

GABRIEL VALENSI: The kinetics of the oxidation of copper at a high temperature.

JACQUES BÉNARD: Study of the stability of solid solutions between the lower oxides of iron and cobalt.

MAURICE DODE: Remarks on the conditions of possibility of heterogeneous reaction with a gaseous phase, in the case of miscibility of condensed phases.

JEAN COURNOT and MARC BAUDRAND: The corrosion of joints. Details of results obtained with riveted joints. For light alloys, cadmium-plated rivets give the best results. For joining steels, light alloy rivets without cadmium give the best auto-protection.

ETIENNE VASSY: The variation of the absorption coefficients of ozone and the temperature of the upper atmosphere.

EMMANUEL VOYATZAKIS: The compounds of nitroprussides and hexamethylenetetramine.

Mlle. ALICE LACOURT: Application on the micro-analytical scale of the methods of quantitative organic analysis by hydrogenation.

MAXENCE MEYER: The synthesis of  $\alpha\alpha'$ -diethoxyacids with straight chains.

ANTOINE WILLEMART: Researches on the dissociable anthracene oxides: the photoxides of 9-phenyl-10-methylanthracene and of 9-phenyl-10-ethylanthracene.

GEORGES DARZENS: A new general method for the condensation of dichloroacetic ester with ketones and aldehydes by the use of very dilute metallic amalgams. A general method for preparing compounds of the types  $RR'C(OH).CHCl.CO_2C_2H_5$  and  $R.CH(OH)CHCl.CO_2C_2H_5$ . The yields are high.

LÉON PALFRAY, SÉBASTIEN SABETAY and JEAN KANDEL: The catalytic hydrogenation of  $\alpha$ -ionone, ionol, dihydroionol, tetrahydroionol, dihydroionone, tetrahydroionone.

HENRI LEFEBVRE and GEORGES LE CLERC: The thermomagnetic study of the iron catalysts utilized in the synthesis of hydrocarbons by the Fischer method.

PIERRE CHOUARD: Building up the stem in the Monocotyledons.

RAYMOND-HAMET: A new alkaloid, formosanine, extracted from *Ouroparia formosana*.

GEORGES FRON: The fight against tracheomycoses in plants. An account of the beneficial effects of the neutral sulphate of *o*-oxyquinoline by increasing growth and combating attacks by fungi.

ALBERT PEYRON, JEAN VERGE, LOUIS BLANCHARD and PIERRE GORET: The genesis of interstitial cells at the expense of seminiferous tissue, in the embryonic testicle and in the seminome.

GEORGES BOURGUIGNON and RENÉ HUMBERT: Double contraction and double chronaxy of normal striated muscle of man and mammals. Analysis by progressive currents.

PHILIPPE L'HÉRITIER: The appearance of differences of pigmentation between various strains of *Drosophila melanogaster*, wild type, as the result of a larval intoxication.

MME. VÉRA DANTCHAKOFF: The effects of a permanent treatment with folliculine on the male organism.

MME. PAULETTE CHAIX: The mechanism of the action on substances containing sulphur in glucose by *Propionibacterium pentosaceum*.

Mlle. CAMILLE CHATAGNON: The gastric secretion of bromine in the course of bromide therapeutics.

GUSTAVE GUITTONNEAU and RENÉ CHEVALIER: The sensibility of the *Azobacter* of the soil to the molecular structure of the monoxybenzoic acids. For the strains of *Azobacter* studied, none of the isomeric sodium hydroxybenzoates was toxic, but their food value depended markedly on the position of the hydroxyl group.

ANDRÉ BOIVIN and MME. LYDIA MESROBEANU: Bacterial variations and complete *O* somatic antigen.

FERNAND ARLOING, ALBERT MOREL, ANDRÉ JOSSEMAND and LOUIS PERRON: The stereochemical configuration of the organic basis and the anti-tumoral activity of the metallo-ascorbic complex compounds.

### Melbourne

Royal Society of Victoria, November 12.

ELIZABETH A. RIPPER: Stromatoporoids of the Lilydale limestone. (2) Species of *Syringostroma*, *Stromatopora*, *Stromatoporella* and *Idiostroma* are described. A review of the whole fauna indicates that a high proportion of the species can be identified with forms occurring elsewhere in the Middle Devonian; three occur in the Helderbergian (Lower and lower part of the Middle Devonian) of North America, while only two are typical of the Wenlock limestone of Great Britain and the Niagaran of North America. The Lilydale stromatoporoid fauna has very little in common with that of the British Wenlock with which the Lilydale limestone has generally been compared, and should rather be correlated with European and North American Devonian faunas.

KATHLEEN M. CROOKS: Studies on Australian aquatic Phycomycetes. An account of the systematic and physiological characteristics of twenty species of aquatic fungi collected in the vicinity of Melbourne.

ISOBEL COOKSON: On *Saprolegnia terrestris* n.sp., with some preliminary observations on Victorian soil Saprolegniales. The forms identified from Victorian soils include—*Saprolegnia terrestris* n.sp., *S. megasperma* Coker, *S. anisospora* de Bary, *Isoachlya unisporea* Coker and Couch, *Achlya apiculata* de Bary, *A. racemosa* Hilderbrand, *A. caroliniana* Coker, *Thraustotheca clavata* (de Bary) Humphrey.

R. T. PATTON: Ecological studies in Victoria (4). Red box – red stringybark association.

### Vienna

Academy of Sciences, October 22.

A. SOMMERFELD: Klein's parameters  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$  and their importance to the Dirac theory.

JOSEF A. PRIEBSCH and W. BALDAUF: Temperature effect with cosmic rays (from three years records of the ionization on the Hafelekar, 2,300 m. above sea-level).

MARIETTA BLAU and HERTA WAMBACHER: Distribution of  $\alpha$ -tracks of the radium series.

E. MOLES and T. TORAL: The molecular groups  $CO_2:O_2$  and  $N_2O:O_2$ .

G. JANTSCH and E. SCHUSTER: Determination of the solubility of mercurous oxalate.

HANS STROUHAL: The terrestrial Isopoda collected by Dr. Franz Werner in Greece and the Ægean Isles.