

only one of the metals constituting the battery, it occurred to me to use a saturated and perfectly neutral solution of the electro-negative metal, provided the other was capable of effecting its decomposition. I therefore tried the effect of a saturated solution of sulphate of copper in an elementary voltaic battery of the ordinary construction". After describing various experiments with his battery, he said, "It is worthy of notice, that after the batteries have been in action some time, a large proportion of the sulphate of copper is expended, and replaced by sulphate of zinc, *yet the action continues the same*. This naturally suggests using a saturated solution of any neutral salt, common salt, for example, and adding merely as much as the solution of copper as will serve for the time required. . . . I intend trying this, as I am still pursuing my inquiries on this subject, the object of which is to simplify as much as possible the voltaic battery. . . ."

Death of Antoine-Laurent de Jussieu

ON September 17, 1836, the celebrated French botanist, Antoine-Laurent de Jussieu, died in Paris at the age of eighty-eight years. The nephew of the three brothers Antoine, Bernard and Joseph de Jussieu, who all contributed to botanical science, Antoine-Laurent was born at Lyons on April 17, 1748. On leaving school at the age of seventeen years, he joined his uncle Bernard de Jussieu (1699-1777) who was then a demonstrator at the Jardin du Roi in Paris, and after taking a degree in medicine became an assistant in the same institution. The collection of plants at that time was arranged according to the system of Tournefort. It becoming necessary to rearrange them, Jussieu adopted a new system suggested by what his uncle had done at Trianon, and from this grew the natural system described by Jussieu in his book "Genera Plantarum" published in 1789, the year in which the Revolution broke out.

As with so many other men of science, Jussieu for a time found his labours interrupted by the political upheaval, and in 1790 he became a member of the municipality of Paris, of which Bailly was Mayor, and was charged with the direction of the hospitals and charities of the city. In 1793, when the Jacobins came into power, the Jardin du Roi was reorganized as the Jardin des Plantes and Muséum d'Histoire naturelle, and Jussieu was made professor of rural botany. His colleagues included Lamarck, Daubenton, Saint-Hilaire, Fourcroy and Brongniart. He afterwards became director and treasurer of the museum and a professor in the faculty of medicine. In 1822 he severed his connexion with the school of medicine and four years later resigned his chair at the Jardin des Plantes, and was succeeded by his son, Adrien de Jussieu (1797-1853).

The natural system of classification of plants introduced by Jussieu was not appreciated at first as it ought to have been, and it was not until the writings of Robert Brown (1773-1858) that it made any headway in Great Britain. Besides his "Genera Plantarum" Jussieu wrote many memoirs, in 1796 published his "Tableau synoptique de la méthode botanique" and in 1800 his "Tableau de l'école de botanique du Jardin des Plantes". A statue of him now stands in the vestibule of the botanical gallery of the gardens. His son, who also was director of the museum, died leaving no male heirs, and the family, which for a century had been an ornament of science in Paris, became extinct.

Societies and Academies

Paris

Academy of Sciences, July 20 (*C.R.*, 203, 217-288).

LUCIEN CAYEUX: The coproliths of the North African phosphates. These coproliths consist of calcium phosphate, almost entirely free from organic or mineral inclusions.

LOUIS BLARINGHEM: The temperature of the spadices of *Arum italicum*. The temperatures are higher than the surrounding air: possible reasons for this are discussed.

LOUIS BOUVIER: Observations from the crayfish on the constitution of the side of the body-wall in the Crustacea.

ALEXANDRE GUILLIERMOND and M^{lle}. N. CHOU-CROUN: An attempt at electrophoresis in the interior of plant cells.

MENDEL HAIMOVICI: Integral geometry on curved surfaces.

NORBERT WIENER and SZOLEM MANDEL BROJT: Lacunar Fourier series. Inverse theorems.

JEAN MANDEL: The crumpling of a tube in a resistant elastic medium.

ALBERT PORTEVIN and LÉON GUILLET, JUN.: The elastic modulus of certain definite intermetallic compounds. Of the six compounds studied, CuZn, Ag₃Sb and MgZn₂ obey the rule of mixtures, the others, Cu₃₁Sn₈, Cu₂Al₄ and CuZn₄ give elastic moduli 20-40 per cent higher than those calculated from the mixture rule.

CHOONG SHIN-PIAW: New systems of bands of selenium anhydride, SeO₂, of selenium, Se₂, and of tellurium, Te₂, in the ultra-violet.

NY TSI-ZE and CH'EN SHANG-YI: The displacements of the higher members of the principal series of rubidium by the rare gases. Study of the displacement of the lines of the spectrum of rubidium by helium (up to 12.75 atmospheres), neon (up to 13.59 atmospheres) and argon (up to 7.12 atmospheres).

ANDRÉ LALLEMAND: The application of electronic optics to photography.

JEAN REBOUL: A possible correlation between the intensity of the cosmic radiation and the velocity of certain chemical reactions.

PIERRE AUGER and M^{me}. GRIVET-MEYER: Analysis of cosmic ray bundles by utilization of their divergence.

RENÉ DUBRISAY and JACQUES LEFOL: Study of the saline hydrates. The salt and a direct reading balance are placed under a bell-jar over a hygroscopic substance under reduced pressure, and the loss of weight studied as a function of the time. With crystallized copper sulphate over phosphoric anhydride, the curve of loss shows a sharp angle at 5H₂O, and after ten days the weight is constant at 1H₂O. Over dilute sulphuric acid (pressure of water vapour 0.85 mm.), CuSO₄.3H₂O is the final product.

RENÉ DALMON: Heats of mixture of sulphuric and nitric acids free from water.

M^{lle}. VALÉRIE DEUTSCH: The adsorption of proteins. The serum albumen of the horse.

E. RINCK: Diagram of solidification and electrical conductivity of the potassium-caesium alloys.

HENRI MOUREU, MICHEL MAGAT and GEORGES WETROFF: The two forms of phosphorus pentachloride. From a study of the melting and solidification curves of phosphorus pentachloride there would

appear to be a modification in the molecular structure. This is in agreement with the results of the study of the Raman spectrum: the latter shows that dissociation into phosphorus trichloride and chlorine does not take place under the conditions of the experiment.

J. JARROUSSE: Oxidation of diphenylpyruvic acid.

RAYMOND QUELET and MAURICE ANGLADE: The synthesis of 1-methoxy-2,4-dimethylolbenzene and of some of its derivatives.

ANDRÉ MEYER and PAUL HEIMANN: The products of halogenation and of oxidation of 2,4-dihydroxyquinoline.

PIERRE CHATELAIN: The geometrical and optical study of the crystals of *p*-azoxyphenetol.

EDMOND ROTHÉ and MME. ARLETTE HÉE: Study of a zone of contact of granite-gneiss by the observation of penetrating rays.

HENRI JEAN MARESUELLE and RAYMOND SCHNELL: Experimental study of the phases of cecidogenic action in a gall.

MME. SIMONE BELLUC, JULES CHAUSSIN, JEAN COTTET, HENRI LAUGIER and MME. THÉRÈSE RANSON: Urinary yield, total molecular diuresis and diuresis of the elaborated molecules.

NICOLAS BEZSSONOFF and MME. MÉLANIE WOLOSZYN: The reversible oxidation of vitamin C present in a biological medium or in pure solution.

ACHILLE URBAIN and R. CAHEN: The amount of protein compounds in the serum of some ungulates.

A. and R. SARTORY, J. MEYER and MME. M. J. MERGLÉN: Thermostable activating factors of cryptogamic origin favouring the growth of bacteria.

JEAN LAIGRET and ROGER DURAND: Virus isolated from mice and reformed in man in the course of vaccination against yellow fever.

ANDRÉ BOIVIN: The comparative behaviour of the endotoxins and exotoxins towards trichloroacetic acid.

BARUCH SAMUEL LEVIN and IWO LOMINSKI: Attenuation of the virus of bird plague by X-rays.

Moscow

Academy of Sciences (*C.R.*, 2, No. 3, 1936).

N. KOSHLIAKOV: Integral for the square of Riemann's function.

S. U. UMAROV: The Brownian movement of a supported girder and the transverse vibrations of bridges.

S. A. ARCYBYSHEV, M. N. BOGOMOLOVA, N. V. BORISOV and I. CH. REPSHE: Penetration of copper and gold ions into transparent crystals of sodium and potassium chloride.

V. ANTONOV-ROMANOVSKIJ: Direct proof of the bimolecular scheme of the luminosity of zinc phosphate.

V. RASUMOVSKIJ: Intensity of the valence and the structure of molecules.

J. G. RYSS and N. P. BAKINA: Complex fluorides (2). Hydrolysis of boro-fluoride ions.

I. I. CHERNIAJEFF and A. M. RUBINSTEIN: Interaction of pyridine with the chloride and the bromide of blomstrand salt.

K. V. KOSIKOV: The influence of the age and sex of the germ cells on the frequency of mutations in *Drosophila simulans*.

N. I. SHAPIRO: Is there germ cell selection in *Drosophila melanogaster*?

P. O. VELTISHCHEV: The plant mites (*Tyroglyphidae*, Acari) as the main cause of failure of root-caoutchuc plants in Transcaucasia.

P. S. CHANTURISHVILI: Experiments in changes of sexual cycle in certain tail-less Amphibia.

Sydney

Royal Society of New South Wales, July 1.

D. P. MELLOR and F. M. QUODLING: Optical properties and crystal structure of some compounds of the type R_xMX_4 . The marked double refraction of many compounds of the type R_xMX_4 where $M = Pt, Pd, Ni$ or Au , is attributed to the existence of strongly anisotropic square co-ordinated ions. As yet, the structure of relatively few of these compounds have been analysed, but where this has been carried out the crystal optics agree qualitatively with those to be expected from the structures proposed.

Tokyo

Imperial Academy, June 12 (*Proc.*, 12, 147-177).

T. KAWATA: Regular analytic functions in the half plane.

A. KAWAGUCHI: (1) Some intrinsic derivations in a generalized space. (2) Certain identities in a generalized space.

H. HOMBUR: (1) Invariant theory of the integral $\int F(x, y, y', y'', y''')dx$. (2) Geometry of the integral $\int (Ly'''' + M)dx$.

N. WATANABE and M. IMAIZUMI: Possibility of measuring a distance of 500 m. in terms of the wavelength of light.

T. KUME: Saturation of non-volatile substances: in aqueous solution.

H. YABE and M. EGUCHI: Deep-water corals from off Owasi, Mie Prefecture.

Y. INAI: *Discosiphonella*, a new ally of *Ambly-siphonella*.

S. ENDŌ: New fossil species of *Sequoia* from the Far East.

T. KOBAYASHI: Proparian genus of the Olenidæ, and its bearing on Trilobite classification.

Vienna

Academy of Sciences, June 18.

JOSEF SCHINTLMEISTER: Origin of α -rays of 2 cm. range. The α -rays of this range, which have been found by several authors, do not come from any known element with atomic number greater than 44; they are probably due to element 61.

H. MARK and G. SAITO: Fractionation of highly polymerized substances by colorimetric adsorption analysis (1).

H. DOSTAL and R. RAFF: Mechanism of polycondensation reactions.

E. BARONI and W. KLEINAU: Nitration of phenols in chloroform.

O. BRUNNER and W. KLEINAU: The material forming the retina (3).

O. BRUNNER and E. BARONI: The material forming the retina (4).