

of Illuminating Light-houses, as Depending on their Situation and the Object contemplated in their Erection". The paper was contained in a letter sent from Constantinople on March 14, 1837. The younger Barlow had been trained as an engineer at Woolwich Dockyard, and in 1832 had been sent to Turkey by Mandslay, Sons and Field, to erect cannon-boring machinery, and had then been employed by the Turkish Government on the erection of lighthouses at the Bosphorus entrance to the Black Sea. The object of his paper was to investigate the principles on which the illuminating power, resulting from the employment of reflectors and of lenses, depends. He had arrived at the inference that the advantage gained by the employment of lenses does not arise from their superior perfection as optical instruments, but from their using the light more economically, in consequence of their producing less divergence of the rays both horizontally and vertically, and illuminating a much smaller space on the horizon.

Peter Barlow was for forty-one years professor of mathematics at the Royal Military Academy, Woolwich; his son became famous as a railway and bridge engineer, and was one of the committee appointed to consider designs for the Forth Bridge.

The Woray Poison

At a meeting of the Medico-Botanical Society on April 26, reported in *The Lancet* of May 6, 1837, Dr. Hancock showed specimens of the woray plant gathered from the mountain Courantine on the Rio Parime, with a bundle of arrows poisoned thereby. Dr. Hancock said that woray was undoubtedly a species of *Strychnos*, although its flowers had never been seen by any botanist. The poison was put up in small gourds or fruit capsules of the woray plant, and the arrows were propelled by blowing them through a reed formed of a slender spike of palm. Divers false reports had been published with regard to the manner in which the poison was prepared and its toxicological effects on the animal economy. Many native charlatans living near the settlement made Europeans believe that it was formed of a great variety of substances, such as pepper, serpent's teeth and other such ingredients. The genuine poison, however, was undoubtedly prepared as an extract formed solely from the bark of the plant. Its mode of action was curious, for though when introduced into the blood it soon became fatal, when taken into the stomach, it produced no sensible effect, in which respect it differed from every other species of the *Strychnos* family.

United Service Museum, Whitehall

THE *Gentleman's Magazine* of May, 1837, gives the following account of the activities of this museum at that date: "Dr. Ritchie has begun a series of lectures on experimental Philosophy—the properties of matter—statics, mechanics, strength of materials, laws of motion, hydrostatics, etc., and Dr. Lardner is delivering others on the particular subject of steam communication with India.—Captain Norton, late of 31st regt., is also about to discourse on rifles, shells and sundry modern projectiles, with some remarks on the Boomerang, or New Holland spear, and on the ancient Balista. . . . Already has the Museum acquired respectable funds from which it is proposed by the Council to found a permanent Professorship for the instruction of the members in mathematical and experimental science."

University Events

BELFAST.—Dr. J. H. Biggart, at present lecturer in neuropathology in the University of Edinburgh, has been appointed to the Musgrave chair of pathology as from October 1 next.

BIRMINGHAM.—Prof. L. G. Parsons has accepted an invitation to deliver the opening address at the annual meeting at Niagara Falls, Ontario, of the Canadian Society for the Study of Diseases of Children, and Prof. H. Beckwith Whitehouse, of the Department of Gynaecology, is to represent the British Medical Association at a conference at Ottawa in June next.

CAMBRIDGE.—It is recommended that the degree of M.A., *honoris causa*, be conferred upon Colonel F. J. Hayter, honorary keeper of the Australian and Fiji Collections at the Museum of Archaeology and of Ethnology since 1928.

The Linacre Lecture will be delivered by Prof. A. V. Hill, Foulerton professor of the Royal Society, on May 10, at 5 p.m., in the lecture room of physiology. The title of the lecture will be, "The Heat-Production of Muscle and Nerve: A Critical Survey".

OXFORD.—Prof. T. G. B. Osborn, of the University of Sydney, has been appointed Sherardian professor of botany, as from October 1 next (see p. 746).

Dr. J. L. Stocks, vice-chancellor of the University of Liverpool, has been elected an honorary fellow of St. John's College.

Societies and Academies

Dublin

Royal Irish Academy, March 16.

J. J. DOWLING and T. G. BULLEN: Precision measurements with a radial deflection oscillograph. The cathode beam is caused to revolve in the annular space between an extra pair of concentric conical electrodes in a modified cathode ray oscillograph. Two applications are specially considered. Using a double frequency synchronized circular time-base, the radial deflection results in a limaçon-like curve. This was employed to measure instantaneously small variations in the radio-frequency of the Droitwich carrier-wave during the U.R.S.I. emission of March 1935. The use of high-speed spiral time bases in 'comparator' measurements of long time intervals (*NATURE*, 137, 279; 1936) is also dealt with in detail. Preliminary results indicate that the difference in the periodic times of two two-second pendulums can be determined to one tenth microsecond in an experiment lasting less than half a minute. The method is being applied to the measurement of the gravitational attraction constant G .

Paris

Academy of Sciences (*C.R.*, 204, 925–1016; March 22).

HENRI LEBESGUE: A construction of the regular polygon of 17 sides due to André Marie Ampère, from some documents preserved in the archives of the Academy of Sciences.

CHARLES ACHARD, AUGUSTIN BOUTARIC and MLE. SUZANNE THÉVENET: Viscosimetric researches on solutions of the various proteins of the serum.

JULES HAAG: The theory of oscillations of relaxation.

DIMITRI RIABOUCHINSKY: Some remarks on the vortex theory of the helix.

JACQUES DE LAPPARENT: The kaolinites capable of being rendered active.

HENRI LAGATU and LOUIS MAUME: The agricultural interest of the separate measurement of the nutritive effect and the improving effect of an addition of manure.

CLAUDE CHABAUTY: Series of powers with p -adic coefficients.

PAUL LÉVY: The arithmetic of the laws of probability and the finite products of Poisson's laws.

Mlle. BRIT RANULAC: The derivability of certain functions represented by an integral.

KARL MENGER: A new demonstration of the Euler-Lagrange equation.

CHI-TAI CHUANG: A theorem relating to the directions of Borel of meromorph functions of finite order.

ALBERT TOUSSAINT and SVETOPOLK PIVKO: An approximate method of calculation of infinite multi-plane cells in plane stream.

PAUL DUMANOIS and GEORGES DESBROSSE: The classification of heavy combustibles. The relation between the ketene number and the delay in ignition.

HENRI GROUILLER: The light variations of Nova Lacertæ, 1936. A curve is given based on 810 observations made by twenty-five observers. This nova can be classified definitely in the group IIa (flash novæ properly so-called).

Mlle. PAULETTE FÉVRIER: The general form of the definition of a logical system.

FRANCIS PERRIN and RENÉ LUCAS: The mechanical actions of elastic thermal waves of liquids.

JEAN ROIG: Electrical and optical measurements on the illumination of helium in the high-frequency discharge.

RAYMOND ZOUCKERMANN: Curves of explosive potential in the case of ionization by collision of the second kind.

HENRI TRICHÉ: A method of studying the corrosion of alloys. By means of the high-frequency spark, extremely thin layers of metal can be analysed; advantage is taken of this to study the composition of the surface layers of an alloy after corrosion by a reagent.

Mlle. MARGUERITE QUINTIN: The hydrolysis of copper benzenesulphonate.

STEFAN PROCOPIU and GEORGE VASILIU: The torsion of an iron or nickel wire facilitates discontinuities of magnetization with an axial alternating current.

SERGE NIKITINE: Theoretical considerations on photodichroism (Weigert effect).

SALOMON ROSENBLUM and MARCEL GUILLOT: Certain regularities in the nuclear levels of radioactive atoms.

Mlle. JEANNE FORET: The synthesis under pressure of the hydrated calcium silicates.

LÉON MALAPRADE: The existence of crystallized cupriperiodates.

R. MICHAUD and E. SEGOL: The recrystallization of aluminium-magnesium alloys.

Mme. YVONNE KHOUVINE: The reduction of α -*D*-glucoheptulose by Raney nickel.

RAYMOND CALAS: The preparation of camphorone and of two stereoisomeric dihydrocamphorols.

MAX MOUSSERON and ROBERT GRANGER: Some cases of reduction caused by organomagnesium compounds.

CHARLES PRÉVOST and JOSEPH WIEMANN: The halogen-argento-benzoic complex compounds. Bromine and chlorine react with silver benzoate like iodine, and the complex compounds formed possess properties very similar to those of the iodine compounds already studied.

LOUIS ROYER: New observations on the thermoluminescence of certain crystallophyllian rocks.

RENÉ BERNARD: The electronic origin of the nitrogen bands in the spectrum of the aurora borealis. Determination of the energy of the exciting electrons.

J. CLUZET and P. PONTIUS: The variations of the electrical conductivity of the air as a function of the barometric pressure, in the pneumatic caisson.

Mme. CÉCILE SOSA-BOURDOUIL: The comparative elementary composition of some floral organs.

RENÉ MORICARD and PIERRE DE FONBRUNE: A new technique for the study *in vitro* of the maturation mitoses of the ovum in mammals. The case of parthenogenetic segmentation.

RAOUL LECOQ: Do the fatty acids of high melting point (above 50° C.) upset the food equilibrium in the same way as the fatty acids liquid at the temperature of the organism?

RENÉ HERPIN: The role of sea-acorns and of serpulæ in the fouling of ships' hulls.

Mme. PAULETTE CHAIX: The oxidation and fermentation of glucose by *Propionibacterium pentosaceum*.

CLAUDE FROMAGEOT and GEORGES BOST: The reducing power of living yeasts in the course of alcoholic fermentation.

HENRI COLIN and HENRI BELVAL: Cane sugar gum.

MICHEL WEINBERG and Mlle. MAYLIS GUILLAUMIE: The titration of antitoxic sera.

D. BROUN: The modifications brought about in the action of insulin by the addition of a colloidal suspension (gelatin).

Moscow

Academy of Sciences (*C.R.*, 14, No. 1, 1937).

M. KREIN: Some problems of the geometry of convexities situated in a complete linear space.

D. RAIKOV: Decomposition of Poisson laws.

V. I. SMIRNOV: Solution of a problem of limits for the equation of curves in the case of the circle and the sphere.

W. A. ISHNAILSKI and B. M. BOGOSLOWSKI: Colour of the nitrobenzol derivatives of aromatic amines (4). Auxo-enoid system separated from chromophore.

F. M. ŠEMIĀKIN: A new kind of multiple emulsion and on spontaneous formation of emulsion systems.

A. A. JACENKO-CHMELEVSKIJ: Transformation of the plastic matter in wood after the cutting of a tree.

S. A. BOROVİK and A. F. SUSEDKO: Presence of gallium in the samples collected by expeditions of the Lomonsoff Institute of the Academy of Sciences of the U.S.S.R. Greater quantities of gallium are found in minerals of endogenous origin than in those of exogenous origin, and muscovite contains up to 0.1 per cent of gallium.

A. M. ARENSTEIN: Evaporation from water reservoirs overgrown with aquatic plants.

V. KIRPIČNIKOV: Principal genes of scales in carp.

N. N. MEDVEDEV: Body-colour mutants in *Drosophila* as studied by transplantation.

V. P. POPOV: The role of combined water in the frost resistance of winter wheat.

D. TRETIAKOV: Spectacles in the anchovy (*Engraulis encrassicolus*).