

Henderson's Star Observations at the Cape

ON April 14, 1837, Thomas Henderson (1798-1844) read a paper to the Royal Astronomical Society entitled "On the Declination of the principal Fixed Stars, deduced from observations made at the Observatory, Cape of Good Hope, in the years 1832 and 1833". Henderson had been appointed to succeed Fallows at the Royal Observatory at the Cape of Good Hope in 1831. He arrived there in April 1832, but had to resign in the following year on account of ill health; and in 1834 was made the first Astronomer Royal for Scotland. In the short time he was at the Cape he did much valuable work under considerable difficulties. In the last of the tables given in his paper in 1837, Henderson included a list of 31 stars, with their direct and reflected zenith distances with the differences he found.

Samuel Hall's Marine Surface Condenser

IN the *Nautical Magazine* of 1837, p. 330, it is recorded: "On Saturday, April 15, Mr. Hall's patent improvements on steam-engines, as applied to a pair of 180 horse-power on board the *Hercules* steam-vessel, were investigated by Sir William Symonds and Mr. Ewart, on the part of the Lords Commissioners of the Admiralty. Several scientific gentlemen and others interested in steam navigation were also present. The party proceeded down the river in the *Hercules*, as far as Gravesend, and were well satisfied with the superior working of the engines and the successful competition of the *Hercules* (though laden so as to draw 12 ft. 4 in. water) with other vessels of the finest build, and the best engines, working by injection. The *Hercules* has been running regularly for a year and a quarter between London and Cork; and these improvements besides having stood nearly a three years and a half trial, in a steam packet plying in salt water, the great and important advantages of Mr. Hall's improvements may be considered as established, leaving no doubt that injection engines will hereafter be entirely superseded."

Giovanni Rasori (1766-1837)

PROF. GIOVANNI RASORI, the founder of the once popular but long extinct doctrine of contra-stimulation, whose death took place on April 15, 1837, was born at Parma on August 20, 1766, the son of a hospital dispenser. After qualifying at Pisa at the early age of nineteen years with a thesis on the more recent ideas in medicine, he spent three years at Florence as assistant to the celebrated surgeon Fontana, and the next two years at Pisa, where he studied under Spallanzani and Peter Franck. In 1795 he travelled to England and visited London, Oxford, Cambridge and Edinburgh, where he made the acquaintance of John Brown, the founder of the Brunonian system.

Rasori's doctrine of contra-stimulation was a modification of the Brunonian system, according to which all remedies except bleeding have a stimulating action and only differ from one another in their degree of stimulation. Unlike Brown, however, he held that in the great majority of cases diseases are caused by excess of stimuli and only a few are due to lack of stimuli. He maintained, therefore, that two kinds of drugs were needed, namely, contra-stimulants, of which tartar emetic was the best example and stimulants, such as ammonia, alcohol and ether.

Societies and Academies

Paris

Academy of Sciences, March 1 (*C.R.*, 204, 625-732).

ALFRED LACROIX: A fall of stony meteorite in New Caledonia, on July 16, 1936.

EMILE BOREL: The approximation of real numbers by rational numbers.

GEORGES GIRAUD: Equations and systems of equations in which figure principal values of integrals.

EMILE MATHIAS, CLAUDE AUGUSTE CROMMELIN and J. J. MEIHZUZEN: The curve of densities and rectilinear diameter of krypton. For temperatures below 190° C. absolute, krypton follows the law of the rectilinear diameter.

EDOUARD CHATTON: A new element of the structure of the Sporozoa: the argyrome.

ANTONIO CALICHIOPULO: The method of selection of the errors of observation.

ILIE POPA: Periodic Laplace series.

LOUIS PASQUALINI: The convexity of a disk of the surface $z=f(x,y)$ projected on the plane xy along a convex figure K and the second paratingent of which is void, except on a point shaped ensemble.

JEAN DELSARTE: A generalization of the Euler-MacLaurin formula.

JOSEPH FAYET: The reduction of homogeneous, linear differential equations to equations with constant coefficients.

PIERRE LELONG: The Lindelöf principle and the asymptotic values of a meromorph function of finite order.

F. J. BOURRIÈRES: The self-maintained oscillations of the extremities of elastic tubes emitting a continuous current of fluid and those of free reeds fitted in at the top.

JEAN CAPELLE: The matching of helicoidal gears.

PIERRE CLERGET: A machine for classifying combustible liquids according to their advance in inflammation under the conditions of use in compression ignition motors. The results obtained with the machine described show that the relation between the ketene number (Boerlage) and the delay in ignition is not linear, but has a hyperbolic tendency.

PIERRE DIVE: The variations of the angular velocity in a fluid star.

JEAN DUFAY, Mlle. MARIE BLOCH and JOHN ELLSWORTH: The emission of CO^+ bands in the head of Peltier's comet (1936, *a*). The CO^+ bands were well marked in the spectrum of the head of Peltier's comet, but the spectrum of the tail was too weak to be photographed under the same conditions.

JULES GÉHÉNIAT: The moments of impulse in the photon theory of L. de Broglie.

ROBERT GUILLIEN: The utilization of relaxation oscillations for the measurement of capacities. The method described allows rapid and exact measurements and is specially suitable for the study of the dielectric constants of liquid gases.

PIERRE JACQUET: The structure of electrolytic deposits. The experimental results confirm the hypothesis of N. Thon relating to the inhibition of the active centres of a polycrystalline metallic cathode, and show that the discharge of the hydrogen ions plays an essential part in the structure of the metals of the iron group and of all metals obtained in complex baths.

ST. PROCOPIU and G. VASILIU : Magnetization discontinuities in an alternating field. Explanation of the multiple frequencies appearing in ferro-resonance.

NICOLAS KÜRTI, PAUL LAINÉ, and FRANZ SIMON : Researches on the ferromagnetism of ferric ammonium alum.

PIERRE BARCHEWITZ : The position of the CH bands of the halogen derivatives of the saturated hydrocarbons and the electric moment of these molecules.

JEAN TERRIEN : The stimulation by resonance of the fundamental doublet of copper in the vapour of cuprous chloride.

JEAN PAUL MATHIEU : Researches on the Werner complex compounds. The Raman spectra of 4- or 6-co-ordinated compounds.

MAURICE LEMOIGNE, PIERRE MONGUILLON and ROBERT DESVEAUX : The characterization and micro-estimation of nitrates.

S. Lj. YOVANOVITCH : A new electro-analytical method for the determination of antimony.

HENRI GEORGE and ROGER LAMBERT : The dissociation of zircon. Zircon, fused in an electric furnace and rapidly cooled, is completely dissociated into silica and zirconia (ZrO_2).

ARMAND MARIE DE FICQUELMONT : The constitution of mineral rubber. Studies on the phosphonitrile chlorides, $(PNCl_2)_x$.

Mlle. YVONNE GARREAU : The preparation and constitution of cyclohexylammonium 2,5-dicyclohexylamino-1,4-quinone-3,6-disulphonate, of 2,5-dicyclohexylamino-1,4-quinone and of hydroquinone-2,5-disulphonic acid.

ANDRÉ CORNILLOT : A mode of representation of organic compounds.

MARCEL TUOT : The formation of nitroschlorides starting with C_6 to C_{11} ethylenic hydrocarbons.

CHARLES PRÉVOST and JOSEPH WIEMANN : The iodizing properties of the iodo-argento-benzoic complex compound.

STANISLAS GOLDSZTAUB : The crystalline structure of laurionite.

ANDRÉ RIVIÈRE : The granulometric constitution of the sandy sediments and the broad lines of their evolution in different geological media.

L. CLARIOND and Mlle. YVONNE GUBLER : The presence of Acadian and post-Acadian eruptive rocks to the south of Djebel Ougnat (South Morocco).

LÉVI HERMAN and Mlle. FANNY BERNSTEIN : The relations between the variations of the intensity of the ultra-violet solar radiation, measured at the level of the soil, and the pollution of the lower atmosphere.

JOSEF SZULETA : The tannin cells in the pith of the elder (*Sambucus nigra*).

ANDRÉ SARAZIN : The evolution of the chondriome and of the vacuolar system in the carpophores and especially in the basidia of *Agaricus campestris*.

MME. JEANNE WERNER and ROGER GUY WERNER : The study of some lichen gonidia isolated in a pure culture.

PIERRE LEPESME : The external action of arsenical preparations on insects.

GABRIEL GUIGNON : The post-nymphal development of the wings of the Lepidoptera.

RENÉ SALGUES : The preventive fungicidal properties of methylene blue in animal pathology.

ANTOINE MAGNAN and HENRY GIRERD : Attempts at the cinematography of the wings of birds in motion in three mutually perpendicular directions.

WLADISLAS KOPACZEWSKI and RENÉ PAILLE : Gel formation of whole blood.

MME. RAYMONDE DUVAL : The action of the electric current on hæmoglobin in the presence of different electrolytes.

ALEXANDRE BESREDKA and LUDWIK GROSS : Intracutaneous immunization against epithelioma and its mechanism.

Washington, D.C.

National Academy of Sciences (*Proc.*, 23, 1-39, January 15).

S. ATWOOD : The last premeiotic mitosis and its relation to meiosis in *Gaillardia*.

A. C. KINSEY : An evolutionary analysis of insular and continental species. Nearly 400 species of the family Cynipidæ (gall wasps) have been studied in the United States, Mexico and Guatemala. These wasps provided good material for the study of insular species because each is restricted to a single kind of oak or group of related oaks, and further, the oak hosts in the western area are limited to high mountain elevations. Some 76 per cent of the wasps are classified as insular species. They are usually homogeneous in constitution, and show few local populations and few inter-specific hybrids; mutation and early isolation of new types are the important factors in increasing the number of such insular species.

G. BIRKHOFF : Integration of operators.

G. A. MILLER : Groups which contain an Abelian subgroup of prime index.

J. v. NEUMANN : Algebraic theory of continuous geometrics.

W. J. CROZIER and A. H. HOLWAY : On the law for minimal discrimination of intensities (1). As a result of a discussion of visual, auditory and other data, it is concluded that the properties of a marginal discriminable interval of intensity are determined by probability considerations, and are completely independent of specific structural and other properties of the receptor field. It is important to use homogeneous data.

MORGAN UPTON and A. H. HOLWAY : The psychophysics of hearing. (1) Monaural differential sensitivity and exposure-time. A relationship has been determined between the just noticeable increment in intensity and the exposure time, utilizing one ear and continuous increase of intensity, at three levels of intensity. (2) Binaural differential sensitivity and exposure-time. The same relationship found for one ear applies when two are used, but the just noticeable increments of intensity are lower at each level for binaural hearing.

E. WITSCHI : Stimulative and inhibitive induction in the development of primary and secondary sex characters. Work with salamanders united experimentally with a strand of tissue containing blood vessels, gives evidence of the production by the medulla of the gonad of two inductive substances. One stimulates testicular differentiation, but within the gonad only; the other inhibits ovarian differentiation of the cortex and is carried in the blood like a typical hormone. These substances are not the same as the testicular hormone, which stimulates merely the last functional development of the male secondary sex characters.