

there is no wind, it flies in this direction along a great circle. When there is wind, the pilot determines the drift angle when starting by noticing the course which gives a constant reading of the magnetic compass with a constant indication of the radio compass. Thus, when the correct drift angle has been determined the compass readings can be corrected. In France, both civil and military aviation authorities have submitted the compass to exhaustive trials, and many aeroplanes are already equipped with them.

University Events

ABERDEEN.—At the spring graduation held on March 31, the honorary degree of LL.D. was conferred upon the following, among others: Olaf Bloch, head of the Research Department, Ilford Laboratories; Naughton Dunn, surgeon and lecturer in orthopaedic surgery in the University of Birmingham; Prof. A. W. Gibb, emeritus professor of geology in the University; Dr. J. F. Tocher, lecturer in statistics in the University.

CAMBRIDGE.—Dr. F. P. Bowden, fellow of Gonville and Caius College, has been appointed Humphrey Owen Jones lecturer in physical chemistry in succession to Dr. R. G. W. Norrish.

S. D. Elliott has been appointed University demonstrator in the Department of Pathology.

Dr. R. van der R. Woolley has been appointed to the John Couch Adams astronomership and as first assistant observer at the Observatory.

The Amy Mary Preston Read scholarship, value £150, awarded this year for research in scientific subjects, has been gained by J. W. S. Pringle, of King's College, who graduated with a double first in natural sciences in zoology and comparative anatomy in 1934.

GLASGOW.—Dr. George L. Montgomery has been appointed Gardiner lecturer in the pathology of diseases of infancy and childhood.

Sir William Waters Butler has contributed £100 towards the cost of erecting the new Chemistry Institute.

At the Commemoration Ceremony on June 16, the honorary degree of LL.D. will be conferred on: Prof. Jan Boeke, professor of histology and embryology in the University of Utrecht; Sir Robert Muir, emeritus professor of pathology in the University of Glasgow; Prof. Max Planck, emeritus professor of theoretical physics in the University of Berlin; Sir Albert Seward, emeritus professor of botany in the University of Cambridge, recently master of Downy College, Cambridge.

OXFORD.—Sir William Beveridge, director of the London School of Economics and Political Science since 1919, has accepted the invitation to become master of University College in succession to Dr. A. B. Poynton, and will take office on October 1 (see also p. 619).

M. H. Hey, Magdalen College, has been granted the degree of D.Sc. for his work in mineralogy.

The Halley lecture for 1937 will be given on May 28 at 5 p.m. in the University Museum by Dr. B. F. J. Schonland of the University of the Witwatersrand. His subject will be "The Lightning Discharge".

Science News a Century Ago

Brunel on the Thames Tunnel

At a meeting of the Institution of Civil Engineers on April 11, 1837, Brunel gave an account of the progress being made with the construction of the Thames tunnel, then the greatest work of its kind under construction. The tunnel previously begun by Vazil and Trevithick, he said, had been only about 5 ft. high and 3 ft. wide, whereas the tunnel now being made was 38 ft. wide and 22 ft. high, and it was being excavated by the aid of a shield. This shield consisted of twelve parallel frames ranged side by side, each divided into three cells. Each frame was made so that it either derived support from its neighbour or assisted in supporting those adjacent. The advantage of the system which had been adopted of building by rings had been demonstrated by the fact that the brickwork had sustained two eruptions of the river, but had exhibited no sign of rupture. The great inconvenience suffered was through the want of a drain; an attempt to make one had been made, but after getting into a stratum of quicksand 50 ft. thick, it had to be abandoned. The land springs were a source of annoyance; many of them were extremely offensive, and produced cutaneous eruptions and were an annoyance to the workmen. The difficulties were great, but they would in time be surmounted.

The University of Cambridge and Gresham College

In 1836 William Palmer (1802–58) was appointed professor of law at Gresham College, London. In his inaugural address he dealt in an interesting manner with the history of the foundation of the College. His address occupied two closely printed columns in *The Times* of April 13, 1837. After referring to the career of Sir Thomas Gresham, Queen Elizabeth's visit to his house in Bishopsgate Street on January 23, 1570, and Gresham's determination to found a college for the several sciences in the City, Palmer quoted from a letter dated March 25, 1575, from the vice-chancellor and senate of the University of Cambridge addressed "To the most accomplished Sir Thomas Gresham, the best maecenas of good learning", urging that the college should be founded at Cambridge and not in London. The letter was in Latin, but the translation ran: "In urging this alone, we would not so strongly or so long contend, unless for the convenient fitness of the place, and for the wholesome state of the air, and usefully for the dignity of the State, and piously for the defence of religion, and fruitfully for the progress of virtue, and happily and fortunately for the advancement of learning and splendidly as well as gloriously for thine own everlasting fame thou mayest erect thy college here rather than in any other place." The college should be at Cambridge or Oxford, but not in London, "to the detriment or almost ruin of either university."

But the compliments of the University could not divert Gresham from his purpose, as seen by his will of July 5, 1575. After his death and that of Lady Gresham, the City and the Mercers Company came into his estates, and the latter applied to Cambridge and Oxford for advice as to the appointments to be made, with the result that of the first seven lecturers three came from Cambridge, three from Oxford and one was appointed on the recommendation of the Queen.

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.