

is the theory of viscosity. This forms the subject of two papers in the *Atti dei Lincei*, xxxii. (1) 1, 2, by Dr. Umberto Cisotti, also communicated by Prof. Levi Civita, the first dealing with motion in canals and the second with damped waves.

The object of the present article has been to direct

attention to papers published elsewhere than in the technical journals and periodicals, such as those of the Royal Aeronautical Society, the Aeronautical Research Committee, or the Institution of Aeronautical Engineers, all of which are replete with results of other important and valuable investigations.

Obituary.

CANON W. W. FOWLER.

CANON WILLIAM WEEKES FOWLER, Vicar of Earley, Reading, died on Sunday, June 3, at seventy-four years of age. He was suddenly taken ill in the vestry before the service, and died soon after service began. Having always been a man of untiring energy, we feel sure that he would have preferred to die in harness rather than to have endured any long illness.

Canon Fowler was the son of the Rev. Hugh Fowler, Vicar of Barnwood, Glos, and was born in January 1849. He was educated at Rugby, where he gained a scholarship for Jesus College, Oxford. He took a first in Classical Moderations, and a third in Lit. Hum.; he was ordained, and became a house master at Repton in 1873. In 1880 he was elected head-master of Lincoln School, where he remained for more than twenty years. Bishop King appointed him Canon of Welton Brinkhall in Lincoln Cathedral. He was Rector of Rotherfield Peppard, Oxon, in 1901-1904. In 1905 he became Vicar of Earley, in the gift of the Vicar of Sonning. In 1907 he was president of the Head-masters' Association, and for many years was an energetic member of the Reading Guardians.

Canon Fowler was best known in scientific circles as an entomologist, being a sub-editor of the *Entomologists' Monthly Magazine* from 1885 until the day of his death. He was secretary of the Entomological Society of London in 1886-1896, president in 1901 and 1902, and vice-president in 1903. He was a member of the Science Committee of the Royal Horticultural Society, and in 1906-1907 was a vice-president of the Linnean Society.

Besides writing numerous notes and articles on Coleoptera, Heteroptera, etc., in the scientific magazines, Canon Fowler's chief works were the volumes on Coleoptera for the "Fauna of British India," including the General Introduction, the Cicindelidæ and Paussidæ, published in 1912; the volumes on Hemiptera-Homoptera, with W. L. Distant, in the "Biologia Centrali-Americana," published in 1887-1909; a "Catalogue of British Coleoptera," with Dr. Sharp in 1893, and with Rev. A. Matthews in 1883; the "Coleoptera of the British Isles" in five volumes, published in 1887-1891, and a sixth supplementary volume, with Mr. H. St. J. K. Donisthorpe, published in 1913. He also published a number of text-books on the classics, etc., for use in schools.

Canon Fowler was a very broad-minded man, generous and unselfish, and was much beloved by all who knew him. He was always ready to help younger men with advice and entomological specimens, etc., and his death leaves a blank in the ranks of the older entomologists which will not easily be filled.

HORACE DONISTHORPE.

DR. HANS GOLDSCHMIDT.

THE inventor of the Goldschmidt thermite process, Dr. Hans Goldschmidt, died after a short illness on May 21, in Baden-Baden.

Hans Goldschmidt was born on January 18, 1861, in Berlin, where his father, in 1847, founded the chemical works of Th. Goldschmidt, of which he was the director until his death in 1873. Hans Goldschmidt studied chemistry at Leipzig, Berlin, Strasbourg and Heidelberg, where he graduated in 1886 under Robert Bunsen. After this he continued his studies in electro-chemistry and travelled in foreign countries; this widened his views on economic questions. In the year 1888 he entered, as a partner, the works of his father, in which his brother, Karl Goldschmidt, had taken the lead since 1882.

Goldschmidt's first technical achievement was the invention of an electro-chemical process for recovering the tin from white iron waste, which has found wide application in many countries. His name became famous in the year 1894, when he succeeded in reducing oxides by combustion with powdered aluminium, and by the tremendous heat of this reaction, metals of a high melting-point, such as chromium, vanadium, molybdenum, tungsten, and their alloys with iron and other metals, melt and can be produced in a pure state. As a by-product, corundum is formed, which can be technically utilised for grinding purposes. The thermite process found an even larger application by the use of mixtures of aluminium metal with iron oxide for welding together the ends of rails of tramways and for repairing broken machinery, especially of ships. Hans Goldschmidt also discovered a process for avoiding the formation of holes in iron castings and for improving steel castings by the addition of aluminium.

Hans Goldschmidt was one of the founders of the Bunsen Society for Applied Physical Chemistry, and was for many years its president. He was awarded the Elliot-Cresson-medal of the Franklin Institute. His high scientific standing and good nature will ensure for him a place in the history of technical chemistry and in the memories of his numerous friends both in and out of Germany.

WE regret to announce the following deaths:

Prof. Heinrich Boruttau, a director of the Friedrichshain Hospital, Berlin, whose work was especially concerned with the relations of physics to medicine. He also worked on physiological chemistry and problems of nutrition. He died on May 15, aged fifty-four.

Dr. W. d'E. Emery, formerly director of laboratories and lecturer on pathology and bacteriology to King's College Hospital, on June 19.

Mr. E. J. Stegmann, for many years secretary to the Royal Commission on Human and Bovine Tuberculosis, on June 8, aged fifty-five.