either been largely suppressed or their activities nullified owing to competition with its larvæ. It is only locally, and in relation to a few species of *Opuntia* of lesser importance, that the *Cactoblastis* has proved more or less ineffective. Such problems, however, are being dealt with effectively through the operations of other phytophagous insects including cochineal (*Dactylopius*) and cerambycid beetles.

In any campaign involving the repression of pest plants through the medium of introduced species of insects, the potential danger that such insects, in a new environment, may transfer their activities to other host plants cannot be neglected. In the case of prickly-pear control, elaborate biological tests as to the host plant range and preferences of such insects have been a feature of inestimable value. Doubtful species have been excluded and none so far introduced has betrayed any tendency, other than of a sporadic nature, to resort to hosts outside the species of *Opuntia*.

We hope to refer to prickly-pear control again at a later date when the promised book, recounting full details, becomes available.

A. D. IMMS.

Obituary

Prof. T. M. Lowry, C.B.E., F.R.S.

THOMAS MARTIN LOWRY, who died at Cambridge on November 2, came of an old Cornish family which had been long connected with the Methodist Church; he was born at Low Moor, Bradford, Yorks, on October 26, 1874, the second son of the Rev. E. P. Lowry, senior Wesleyan chaplain and staff officer at Aldershot. He was educated at Kingswood School, Bath, and thence passed to the Central Technical College, South Kensington, in 1893, with a Clothworkers' scholarship, and was ultimately awarded the fellowship of the City and Guilds of London Institute. From 1896 until 1913 he was an assistant to Prof. H. E. Armstrong; in 1904–13, was lecturer in chemistry, Westminster Training College, and from 1913 until 1920 head of the chemical department in Guy's Hospital Medical School; in 1920 he was appointed to the newly created chair of physical chemistry in the University of Cambridge, a position which he held at his death. He married a daughter of the late Rev. C. Wood in 1904 and leaves two sons and a daughter.

During his long service with Prof. Armstrong, Lowry gained recognition for his delicate work in organic chemistry. The proficiency which he then acquired as a crystallographer expressed itself later in the aptitude which he displayed in applying exact physical methods of measurement to the solution of chemical problems; he developed a rare instinct for grasping the essentials of any subject which he attacked and for ensuring that the quantitative methods used were devoted to the measurement of something which was clearly defined. The vast mass of quantitative physical data collected by Lowry is thus not of merely ephemeral interest but will also provide useful working material for future generations of physical chemists.

During Lowry's first research work, he noted that the optical rotatory power of nitro-*d*-camphor solutions changes with lapse of time, and he early realized that this effect, which he termed mutarotation, arises from the tautomeric change of substances such as derivatives of camphor and of sugars. Mutarotation is dependent on the nature of the solvent, and the mutarotation of *d*-glucose can be arrested in such a hydroxylic solvent as cresol, or a basic one like pyridine, but proceeds almost too rapidly for measurement in a mixture of these solvents. Lowry thus showed that an amphoteric solvent is necessary as a catalyst for the mutarotation process, and built up his now well-known theory of prototropic change; it is largely on this work that the conception of dynamic isomerism advanced by van Laar became generally accepted.

Concurrently with his purely chemical work on mutarotation, Lowry studied the variation of rotatory power with wave-length, a subject which had been much neglected since the death of Biot in 1862. He demonstrated the validity of Drude's equation for simple substances and expanded the equation so that it covered the anomalous rotatory dispersion of *d*-tartaric acid and the tartrates; this formed the subject of the Bakerian Lecture before the Royal Society by Lowry and Austin in 1921. Lowry's later determinations of the rotatory power of quartz, made on a column nearly half a metre in length, both in the visible and ultra-violet, furnished data of the highest precision by which again the validity of the Drude equation was established. He turned next from the optical rotatory power of transparent media to that of absorbent media and studied the Cotton effect; here he was able to develop equations which adequately express the dispersion throughout the absorption band. Whilst Lowry's main work in this field bore on optical rotatory power, he also studied other optical phenomena, and during recent years had initiated a series of investigations concerned with the refractive dispersion of organic compounds.

During the Great War, Lowry devoted himself to problems connected with high explosives and acted as director of shell-filling from 1917 until 1919; he did valuable service on the Trench Warfare Committee and the Chemical Warfare Committee and was an associate member of the Ordnance Committee at the time of his death. His war services gained him the C.B.E. and the Order of St. Maurice and St. Lazarus. He took the D.Sc. (London) in 1899 and held the honorary degree of M.A. (Cambridge) and doctorates of science of Dublin and Brussels; he became a fellow of the Royal Society in 1914.

In addition to some hundreds of important papers published with numerous collaborators, Lowry wrote several useful books; the last of these, on "Optical Rotatory Power", was issued last year and will long remain a standard work on the subject. The immense amount of accurate experimental work which Lowry has left on record secures him a permanent place in the history of the science to which he was devoted. His old colleagues and students in the laboratory of physical chemistry which he built up at Cambridge will remember him as a staunch friend, an inspiring teacher and an indefatigable worker who has passed too soon from their ranks. WM. J. POPE.

Prof. H. R. Briton-Jones

PROF. HARRY RICHARD BRITON-JONES whose untimely death occurred in Trinidad on November 3, following an operation for appendicitis, will be mourned by a wide circle of friends, scientific colleagues and past and present students of the Imperial College of Tropical Agriculture. He was born in 1893 and educated at Llandovery College, of which he was a scholar. He entered King's College, London, in 1912, proceeding to the Royal College of Science in 1913, where he took the associateship and, later, the diploma of the Imperial College. In 1915 he was commissioned in the R.G.A. and he gained the M.C. on active service, being eventually invalided from shell-shock, with the rank of captain. Attracted to the study of plant diseases, he re-entered the Royal College of Science to equip himself for phytopathological research; a short period was also spent at the Royal Botanic Gardens, Kew, in systematic study of the fungi parasitic on plants.

At the end of 1919, Briton-Jones was appointed mycologist in the Egyptian Department of Agriculture, but he left in 1923 to become mycologist at the Horticultural Research Station of the University of Bristol at Long Ashton. He was appointed professor of mycology and bacteriology at the Imperial College of Tropical Agriculture, Trinidad, in 1926 and dean of the College in the following year; he acted as principal on several occasions.

In Egypt, Briton-Jones devoted himself largely to the study of cotton and cereal diseases, publishing in 1925 the main results in a memoir entitled "Mycological Work in Egypt during the Period 1920–1922". At Long Ashton he was led to consider the influence of the nutrition and cultural management of the host plant on its susceptibility to parasitic disease, a subject which afterwards became increasingly predominant in his mind. While there, he published work on the cause of die-back of fruit trees, a problem not yet fully elucidated but in which the factors of nutritional and soil-moisture unbalance which he emphasized probably play a considerable part. On proceeding to Trinidad, he applied the same considerations to the diseases of permanent tropical crops, especially cacao and coco-nuts. His book on "The Diseases and Curing of Cacao" (Macmillan and Co., Ltd., London, 1934) was followed by a similar work on coco-nut diseases, but he did not live to see it published.

Briton-Jones's outstanding virtue as a mycologist was his very practical outlook. His opposition to academic views was sometimes carried to extremes, but he was intensely in earnest, and his enthusiasm in combating theory by practical experience often supplied a useful corrective. He helped to place plant pathology on a wider basis than that of parasitology, and in this his influence has been spread by his students to many parts of the Empire. As a teacher, he was the right man in the right place; to his students he was a friend, and he shared in their college life—he was a keen Rugger player—and gained their affection to an unusual degree.

E. J. B.

Lieut.-Colonel R. H. Elliot

LIEUT.-COLONEL ROBERT HENRY ELLIOT, whose death on November 9 we regret to record, had a distinguished career in ophthalmology as well as in other walks of life. The son of a colonel in the Army, he was educated at Bedford School and St. Bartholomew's Hospital, where he was a prizeman of the medical school. He had a brilliant career as a student and qualified M.B., B.S. (London) with honours in three subjects. He took his fellowship of the Royal College of Surgeons of England in 1892 and in the same year took the D.P.H. Cambridge and entered the Indian Medical Service. At Netley he was Montefiore scholar and medallist and Maclean prizeman in military surgery.

Soon after arrival in India, Elliot joined the Southern Presidency. His work there naturally led to an extended experience in ophthalmology, and he was superintendent of the Government Ophthalmic Hospital, Madras, and professor of ophthalmology in the Medical College from 1904 until 1914. While on leave in 1904, he completed his qualifications by obtaining the Sc.D. (Edin.) and the M.D. (Lond.).

Elliot's name will always be remembered for the work he did on sclero-corneal trephining in cases of glaucoma. The operation is known by his name all over the world, and was a notable advance in the surgical treatment of a disease the origin of which is in many cases obscure, and which has in the past led to a great deal of blindness.

Elliot's literary output was considerable. His chief works were handbooks on glaucoma and an account of sclero-corneal trephining, each of which went to a second edition. Besides this, he wrote an excellent text-book on tropical ophthalmology, which has been translated into a number of foreign languages, as well as smaller works. His work brought him many distinctions at home and abroad. Returning home in 1915, Elliot settled in London and quickly acquired a very large practice. For a number of years he was ophthalmic surgeon to the Prince of Wales General Hospital, Tottenham; and he was Consulting Ophthalmic Surgeon to the Hospital for Tropical Diseases.

Apart from his work as an ophthalmic surgeon, Elliot was an authority on snakes and a first-class amateur conjurer. His last book was published