

## Prof. D. Robertson

WE regret to record the death of Prof. David Robertson on January 8. He was born on December 26, 1875, and like his grandfather, David Robertson, LL.D., the well-known naturalist of Cumbrae, his bent was scientific. Educated at the Hermitage School, Helensburgh, he studied engineering and electricity in the West of Scotland Technical College and the University of Glasgow, where he gained the Sir John Pender Gold Medal, and where he took the degree of B.Sc.(Eng.). Later he was awarded the degree of doctor of science by his own University in recognition of his valuable research work.

After two years as lecturer in the Bradford Technical College, he worked, on original lines, for thirty-eight years in Bristol, where he became professor of electrical engineering in the Merchant Venturers' Technical College in 1902, and in the Faculty of Engineering in the University of Bristol in 1909. He was chairman of the Western Centre of the Institution of Electrical Engineers in 1916, and president of the Bristol Association of Engineers in 1922.

His twenty-seven publications covered a wide field in engineering, and they reflect his character in attention to detail and accurate observation. It makes the achievement of his work so much the greater in that he was confined to an invalid's chair for the last thirty years of his life.

No doubt his works' training in the shops of Messrs. James White, Ltd., was responsible for his great interest in instruments and clocks. "Electrical Meters on Variable Loads" shows the errors which arise under these conditions. "The Clock and Striking Mechanism for the Great Bell of the University of Bristol" gives details of his own design of striking gear, escapement and system of controlling the rate of the clock by means of wireless signals from Greenwich. "The Stroboscope in Speed Measurements and other Engineering Tests" and "The Separation of No-load Stray Losses in Continuous-Current Machines by Stroboscopic Running-Down Method" deal with the principles and application of the stroboscope, and show how the no-load losses can be obtained with accuracy in machines which come to rest in less than one minute. Papers on other subjects include "The Mathematical Design of Transformers", showing how the cheapest transformer for a given output with specified losses is designed; "A Mode of Studying Damped Oscillations by the Aid of Shrinking Vectors", showing in a simple manner how electrical oscillations, or any kind of vibration, can be represented by a vector rotating with uniform angular velocity and, at the same time, shrinking at a uniform rate, so that its path is a spiral.

In recent years he published a very important series of papers on the whirling of shafts and cognate problems. These did much to explain many puzzling phenomena in the running of loaded shafts, and have received high commendation from the special workers in that field. They are notable in the ingenuity displayed in devising experimental methods, and for the criticism of previous work, much of which was mathematical.

S. HOLMES.

## Mr. J. A. Tomkins

WE regret to announce the death of Mr. John Arthur Tomkins. He was born in 1874, and received his early education in London. From the age of fifteen he was apprenticed to a firm of scientific instrument makers, with whom he was connected for many years. Between 1892 and 1898, he attended Birkbeck College and the Royal College of Science, of which he became an associate. At this point he entered the teaching profession at West Ham Technical College, as a lecturer in mathematics and physics, and finally joined the staff of the Bradford Technical College in 1903. There he remained until his retirement in 1939. At Bradford, where he became in fact, if not in recognized status, the head of both the Physics and Applied Optics Departments, his long service has left a lasting memorial.

The skill and knowledge acquired in his youth as an instrument maker went with him during life, and Bradford Technical College is enriched with a number of soundly designed instruments. Tomkins' own interests lay perhaps more in the direction of applied optics than pure physics, and many of his thirty contributions to scientific and technical journals dealt with this side of his work. Such a steady stream of published work from a man overburdened with teaching for so many years, actively working for professional organizations (he had much to do with introducing the Association of Teachers in Technical Institutions into the College), and at the same time administering a double department, is its own tribute to his energy and ability. His outside interests appear to have been few, apart from his membership of the Physical Society and the Institute of Physics, of which he was a founder fellow. Bradford has lost a devoted servant, and the Technical College is severed from one whose thoroughness, strict devotion to duty, and too modest personality were a part of it for nearly forty years.

J. P. ANDREWS.

WE regret to announce the following deaths:

Father G. Alfani, the well-known Italian seismologist, aged sixty-four.

Prof. P. Broemser, professor of physiology in, and rector of, the University of Munich, formerly professor of physiology in the University of Basle, aged fifty-four.

Prof. W. Bulloch, F.R.S., emeritus professor of bacteriology in the University of London, aged seventy-two.

Mr. S. H. Hamer, C.B.E., secretary during 1911-34 of the National Trust for Places of Historic Interest or Natural Beauty, on February 6.

Prof. R. von Ostertag, formerly director of the Veterinary Department of the German Ministry of Health and of the Veterinary High School, Berlin.

Prof. Vittorio Patti, director of the Rizzoli Institute and professor of orthopaedic surgery in the University of Bologna.

Dr. Cresswell Shearer, F.R.S., formerly University lecturer in embryology, Cambridge, on February 7.