

ARCHIBALD R. RICHARDSON

Archibald Read Richardson was born on 21st August 1881; he spent the greater part of his life in London until he was appointed to the Chair of Mathematics at Swansea in 1920, in the newly created constituent college of the University of Wales. In 1940 he was compelled to resign on account of increasing ill health, when he retired to Cape Town but continued to prosecute mathematical research until shortly before his death on 4th November 1954. He was elected Fellow of the Royal Society in 1946.

Richardson combined in an eminent degree the qualities of a man of action with those of a scholar: his character was strong, vigorous and clear cut. After a brilliant career as a student, and later as a colleague of Professor L. N. G. Filon at the Imperial College, London, he went on active service with the British Expeditionary Force, 1914-19, receiving the D.S.O. for his part in the Battle of Bullecourt, 1917. A college friend who fought by his side wrote of him: "By common consent he was the most distinguished combatant officer of the London O.T.C. before World War I: in that war he became a legendary figure. His bravery was outstanding." In 1918 he was seriously wounded; and as a result of an incredibly grave operation carried out by Sauerbruck in Munich for the removal of a bullet from the lung, he recovered a measure of health, but the strain of the operation left a legacy of leukaemia, a progressive disease which made him an invalid for life. Despite his handicaps he turned his immense vitality to the channels of teaching and research. The main cause of his success in keeping the leukaemia at bay so long lies in the devoted nursing by his wife. In 1922 he married Dr Margaret Harris, a member of the Modern Languages Department of Swansea and an expert on German linguistics.

Richardson's earliest publications were in analysis and hydrodynamics, but his bent lay in algebra. At Swansea he created a flourishing school, and two of his students, R. Wilson and D. E. Littlewood now occupy chairs in the University of Wales. Richardson made substantial and effective contributions, alone and also in collaboration with his pupils, by generalising the results of classical algebra and the theory of numbers to non-commutative and non-associative systems. Later, when the Swansea school of algebra was successfully launched, he turned to the abstract theory itself. Typical of his thought is the paper, "Some Combinatorial Problems of Finite Abstract Algebra," which he published in our Proceedings.* He was interested

* Proc. Edinburgh Math. Soc., 2, 6 (1939-41), 46-50.

not only in the logical structure of an abstract system but also in the strength of a postulate or the extent of a theorem. The paper was a preliminary survey, as he put it, of the extent to which certain theorems are likely to be true in an arbitrary multiplicative system. Later he turned his attention to the arithmetic of forms and particularly to the composition of quadratic and cubic forms, to which he made remarkable contributions.

Many of Richardson's early works were published in the *Messenger of Mathematics* and the *Philosophical Magazine*; the later and generally larger works were published in the *Proceedings of the London Mathematical Society*, the *Philosophical Transactions*, the *Quarterly Journal of Mathematics*, the *Annals of Mathematics* and the *Duke Mathematical Journal*. He holds an honoured place among algebraists in the succession of Macmahon, Young and Wedderburn.

H. W. TURNBULL.

ALEXANDER D. RUSSELL

It is with deep regret that we record the death on 20th January 1955 of Mr Alexander Durie Russell, who was for many years Principal Teacher of Mathematics in Falkirk High School.

Mr Russell was a native of Edinburgh and received his secondary education at George Heriot's School. He then proceeded to the University of Edinburgh where he graduated B.Sc. with honours in mathematics and natural philosophy in 1896 and was awarded the Neil-Arnott Scholarship in Experimental Physics.

Before going to Falkirk, where he spent nearly the whole of his teaching life, Mr Russell acted for a year as Demonstrator in Physics in the University and taught for one year in Morelands School, Edinburgh and for two years in Stranraer High School. In Falkirk, he rendered signal service to the High School and also to the Science and Art School, where he conducted continuation classes. He proved himself to be an inspiring and successful teacher, and his contribution to the general good of the Falkirk district would be hard to overestimate. His enthusiasm for mathematics was very real and he contributed several papers to the *Edinburgh Mathematical Notes*. He served our Society well, having acted at one time as Treasurer and then as President. In 1906, he was elected a Fellow of the Royal Society of Edinburgh, and he was also a Fellow of the Royal Astronomical Society.

Mr Russell was a keen churchman and was an elder of St Modan's Church, Falkirk. He was highly respected in the community for his personal character, ability and devotion to duty, and he will be greatly missed.

The sympathy of the Society is extended to his widow in her bereavement.