

Obituary

PROF. W. McFADDEN ORR, F.R.S.

WILLIAM McFADDEN ORR was born on May 2, 1866, and died in his sixty-eighth year on August 14, having resigned his professorship of pure and applied mathematics in University College, Dublin, and retired from active work less than a year ago. In the Ireland of Orr's youth, the examinations for the different grades of secondary education were intensely competitive, the exhibitions and prizes being valuable, and Orr, a student of the Methodist College, Belfast, although two years under age, had an unbroken and amazing series of successes. In Queen's University, Belfast, and St. John's College, Cambridge, his mathematical triumphs were repeated, and following the example of another alumnus of Queen's University, now Sir Joseph Larmor, he became Senior Wrangler in 1888; he was also given a fellowship in St. John's College, Cambridge. He became fellow of the Royal Society in 1909, and received the honorary degree of D.Sc. from Queen's University, Belfast, in 1919. In 1892 he was appointed professor of mathematics in the Royal College of Science for Ireland, and on this institution being absorbed by University College, Dublin, in 1926, he was transferred to an equal position with the title of professor of pure and applied mathematics. He retired on September 30, 1933.

Practically Orr's first published paper dealt with Bessel functions, a subject to which he returned twenty years after in a series of researches on Fourier and Bessel-Fourier expansions. In the early days of the electron theory, he was interested in giving precision to some of the mechanistic conceptions, which thirty years ago seemed the only possible points of view of this Larmor-Lorentz supplement to the Maxwell theory, and in the domain of electric waves he showed the impossibility of undamped waves in an unbounded dielectric space, whether simply connected or not. The duties of his chair turned his attention to many aspects of the work of Clausius on entropy and, in addition to some critical papers, he has left a small book, "Notes on Thermodynamics for Students", a model in its precision of formulation of principles. He will always be best known for his great work on the stability of the steady motions of a liquid (*Proc. Roy. Irish Acad.*, 1907). Improving on the results of Reynolds, his results are continually referred to in the writings of Kelvin, Rayleigh, Hopf, v. Mises and others, and are of importance in aerodynamics and fluid researches of the present day. His last published researches were important contributions to the whirling of shafts.

Everything that Orr wrote contained something of permanent value, and if the total quantity seems small, it was because of his highly developed critical faculty which he directed with the fiercest intensity against his own work. His views were esteemed and appreciated by writers like Lamb, Love and many others. In latter years, in University College, Dublin, he had a free hand to give any lectures he pleased, but, from choice, he undertook the difficult task of

instilling accurate elementary ideas in the minds of science and engineering students. A firm disciplinarian and the strictest of examiners, he took a direct personal interest in all his students, who, without exception, came to like him before they parted from the College, however sternly they had been treated. He was the most modest of men about his own attainments, but was always ready to give help in applying mathematics to difficult technical and other problems, and one always had the comforting feeling that when Orr produced a result it was accurate and left little to be said on the subject.

Outside mathematics, Orr's chief interest was in cycling, and it is on record that in his Tripos year at Cambridge he carried off with great ease all the events at the University meeting of that year. This interest lasted to the end, and those in Dublin will miss the sight of his lean bearded figure going through the streets on a racing bicycle, without an overcoat, even in the coldest weather.

A. W. C.

DR. R. F. SCHARFF

By the death on September 11 of Dr. Robert Francis Scharff, Ireland has lost one of her foremost zoologists. Born at Leeds in 1858, he studied at Edinburgh and Heidelberg, and at the Marine Laboratories of St. Andrews and Naples. He entered the Science and Art Museum in Dublin in 1887, and there he spent most of his life, holding the keepership of the Natural History Division from 1890 until 1921.

While keeping in touch with the general progress of zoology and with the museums of the Continent, Scharff devoted himself especially to the study of the Irish fauna. He produced critical lists of several groups, such as the non-marine Mollusca and the woodlice, and to his assistance and encouragement was largely due the advances made in the knowledge of the distribution of many sections of the fauna of Ireland. The fossil fauna also occupied his attention, and he devoted much time to the Mammalia of the cave deposits. The origin of the various breeds of Irish domestic animals he also investigated, as well as the Gaelic names of native species.

Scharff took a keen interest in the Dublin Zoological Gardens, being secretary of the Royal Zoological Society of Ireland from 1903 until 1910, and long a member of its Council. He was also a leading member of the Royal Irish Academy, and chairman of its Fauna and Flora Committee from its inception in 1893 until he went recently to reside in England.

Among general zoological problems, Scharff selected for study the distribution and migration of animals, and published several books dealing with the subject—"History of the European Fauna" (1899), "European Animals" (1907), "Distribution and Origin of Life in America" (1911). He was emphatic on the difficulties offered by barriers of sea to animal migration. He was twice married, and leaves a widow, whose work on Irish sponges is well known to students of that group, and three children.