

OBITUARY NOTICES

MORGAN WILLIAM CROFTON.*

THE late Morgan William Crofton, F.R.S., though a man of reflective and retiring disposition, and therefore not well known to the public, yet had an unusually remarkable and interesting career.

He was born in Dublin in 1826, eldest son of Rev. W. Crofton, Rector of Skreen, Sligo, a living which must have been held just previously by the father of Sir George Gabriel Stokes, the great mathematician and physicist, who was born at Skreen in 1819.†

Taking his degree in Trinity College, Dublin, with the highest mathematical honours in 1848, the late Dr. Johnstone Stoney being second on the list, he was precluded from standing for Fellowship in those days on account of his having joined the Roman Catholic Church.

He held from 1849 to 1852 the Professorship of Natural Philosophy at the Queen's College, Galway, then newly founded, and later he worked in some of the Jesuit educational institutions in France ; he was succeeded at Galway by Dr. G. J. Stoney, who remained there until his appointment as Secretary of the Queen's University in Ireland in 1857.

Coming to Woolwich, Crofton made the acquaintance of the late J. J. Sylvester, F.R.S., who was then Professor of Mathematics at the Royal Military Academy ; on his recommendation Mr. Crofton was appointed an Instructor on the Mathematical Staff. Prof. Sylvester, as was his manner, stimulated into activity the exceptional mathematical powers of his colleague, and communicated some of his original work to the Royal Society ("Local Probability," *Phil. Trans.*, 1868, "Law of Error," *Phil. Trans.* 1870), with the result that at his first nomination, in 1868, he was elected a Fellow. He was a frequent contributor of short elegant papers to the early volumes of *Proc. Lond. Math. Soc.* When, in 1870, Prof. Sylvester vacated his office, the other members of the Mathematical Staff at Woolwich are said to have written to the Governor (Sir Lintorn Simmons) to say that if Mr. Crofton, who was the junior member, applied for the Professorship none of them would do so. He was appointed, and held the position till he retired under the age limit in 1884.

Many distinguished officers of the Royal Artillery and Royal Engineers passed under Prof. Crofton at the Royal Military Academy ; among them

* The writer is indebted for valuable material to the Rev. James White, who was a colleague of Prof. Crofton, at Woolwich, from 1870 to 1878.

† See Obituary Notice by Lord Rayleigh, *Roy. Soc. Proc.*, 1903, or Stokes' *Collected Papers*, Vol. v.

may be mentioned Lord Kitchener, Sir Leslie Rundle, Sir Reginald Wingate, Sir Matthew Nathan, Major P. A. MacMahon, F.R.S., and also the late Prince Imperial of France, with whom Prof. Crofton's religious and French associations formed a special tie.

While at Woolwich he wrote two brief manuals for the cadets, which exhibit the high level of the teaching to which they were supplementary. One of them, on Applied Mechanics, belongs to a period when the only adequate representative of its class in English was the treatise of Macquorn Rankine, for whose work Crofton had a high admiration. His own methods of demonstration were terse and lucid in their direct geometrical presentation, just what is wanted for the training of practical officers, who require to have command of the ideas of the subject but may be distracted by analytical processes. Especially elegant and original was his treatment of the theory of structures—for example, that of jointed frames, which was just then being worked up into the subject of graphical mechanics. In fact, these short works have lost none of their value from the lapse of time.

The subject of most of his original memoirs was that beautiful combination of geometry with the integral calculus to which has been given (perhaps by himself) the name of Local Probability. In these investigations the elegant geometrical touch which he had acquired in the Dublin school found full scope. The whole subject of Probabilities fascinated him, as it had fascinated the somewhat kindred mind of Pascal; and he always expressed high admiration for Laplace's great treatise. His own lucid and elegant exposition of the subject of Probability in the ninth edition of the "*Encyclopædia Britannica*" might well be recovered from oblivion, and should, in fact, survive as a classic on the subject.

When the Royal University of Ireland came into being in 1882, Crofton's services were obtained as one of the Fellows on the Catholic side. For some ten years following, the present writer had the advantage as an examiner colleague of sharing in his friendship and intellectual interests, and observing the subtle play of his mathematical tastes. Considerations of health led to the abandonment of this work, and the last twenty years of his life were spent in retirement.

Prof. Crofton had a large acquaintance with classical and general literature. This, in addition to a most amiable and kind-hearted disposition, endeared him greatly to those who had the privilege of his acquaintance.

He had two sons by his first marriage, one a Jesuit priest engaged in educational work, who has been active in the astronomical observatories of the Order; the other an officer of the Royal Engineers, who died of enteric in India before the age of twenty-one. His second wife survives him.

J. L.