

Scotsman Obituary, 7th November 1879.

#### THE LATE PROFESSOR CLERK MAXWELL

By the death of Mr. James Clerk Maxwell of Middlebie, Professor of Experimental Physics at Cambridge, which was briefly announced in yesterday's Scotsman, science has lost an ardent and successful inquirer, and Edinburgh a son of whose reputation she might justly be proud. Born in this city in 1831 (his father being one of the Clerks of Penicuik who afterwards assumed the name of Maxwell), young Maxwell received his early education at the Edinburgh Academy, under the rector-ship of Archdeacon Williams. After a successful course in that institution, he passed on to Edinburgh University, where his talents specially marked him out among his class-fellows, and he became a favourite student of Kelland and Forbes and Gregory, in whose laboratories he was a diligent worker. After graduation, he went to Cambridge in 1850, and entered as a student, of Peter's House; but after a term he migrated to Trinity, where he was greatly distinguished, as a mathematician.

In 1854 he stood Second Wrangler, and equal with the Senior Wrangler for the Smith Prize, the highest mathematical honour that Cambridge University has to give. In 1856 Mr. Clerk Maxwell was appointed to the Professorship of Natural Philosophy, in Marischal College, Aberdeen, and this post he retained till the fusion-of Marischal and King's Colleges, being afterwards, in 1860, chosen to fill the corresponding chair in King's College, London.

In 1871, the Senate of the University of Cambridge determined to establish a Chair of Experimental Physics, the chief business of which should be to apply and elucidate the laws of heat, electricity and magnetism. As the first occupant of this chair, Mr. Clerk Maxwell selected, and that appointment he held until his death.

It was under his charge that the great Cavendish Laboratory—the admiration and envy of scientific men—was completed by the Duke of Devonshire, who, it is said, with '*princely-munificence*', gave Mr. Clerk Maxwell *carte blanche* to procure for its thorough equipment whatever instruments and apparatus he thought necessary. The valuable MSS. of Henry Cavendish, after whom the Laboratory was named—papers which had been in possession of the Dukes of Devonshire—were, about the same time, placed in the hands of Mr. Clerk Maxwell; and it was but the other day that there was published under his direction a bulky volume, entitled "*The Electric Researches of Henry Cavendish*" which, by men working in this comparatively modern field of inquiry, is regarded as one of the most remarkable contributions to science that has seen the light for some time. In this book, as was pointed out in our review of it in Wednesday's Scotsman, Mr. Clerk Maxwell shows that Henry Cavendish anticipated many of the most remarkable discoveries of the present century.

As an original worker in regard to the subjects, for the elucidation of which his chair was founded, Mr. Clerk Maxwell held a high place in the estimation of the scientific world. Among the books he has produced are a remarkable little treatise on the "*Theory of Heat*" which has the reputation of being both original and profound; and a little work entitled "*Matter and Motion*" which is one of the ablest introductions to mechanics ever published. Curiously enough, this book was issued by the '*Society for the Diffusion of Christian Knowledge*'. Mr. Clerk Maxwell's most important work, however, was his treatise on electricity and magnetism, which has run through several editions.

The deceased Professor was a fellow of the Royal Societies of London and Edinburgh, and was a voluminous contributor to the transactions of these as well as other scientific societies. Although, comparatively speaking, one of the younger scientific men of the day, he had undoubtedly achieved for himself a place in the very foremost rank. In the originality, extent, and usefulness of his labours he was surpassed by few, if any, of his contemporaries. All his scientific work was characterised by an accuracy and penetration, rarely equalled. A bold, earnest investigator, everything he attempted had an air of novelty peculiar to himself, and this found its best justification in the large measure of success which crowned his efforts. He was recognised on the Continent, as in this country, as one of the foremost men of science that the century has produced.

Mr. Clerk Maxwell was married to a daughter of the late Principal Dewar, of Marischal College, by whom he is survived. It may be mentioned that when they founded the Chair of Experimental Physics, the Senate of the University of Cambridge stipulated that it should terminate with the tenure of office of the Professor first elected, "*unless the University, by grace of the Senate; should decide that the Professorship be continued.*"

Mr. Clerk Maxwell, taking up a task which Sir William Snow Harris was at one time understood to have undertaken, has in "*The Electric Researches of Henry Cavendish*" presented to the world a work of much interest to electricians. Henry Cavendish, son of Lord Charles Cavendish and grandson of the second Duke of Devonshire, was a man of singular capacity for scientific research and experiment. But while as an experimentalist he was of high eminence, his personal habits were such that the results he wrought on were seldom or never given to the public of the day. He had an air of timidity and reserve which has been described as verging on the ludicrous, and an illustration of this is afforded by his practice of ordering dinner by a note left on his hall table, the female servants being ordered to keep out of his sight on pain of dismissal. He died unmarried seventy years ago, leaving property approaching three-quarters of a million in value, and in his lifetime, considerable expenditure was made on the scientific research and experiment in which he delighted. While many of his contributions to clinical science became public in his lifetime, and have been preserved with a degree of loving regard through the labours of the Cavendish Society, his

electrical researches, described in a series of notes extending from 1771 to 1781, have been till now unpublished and almost unknown. It is the experience of nearly every branch of science that some of the greatest discoveries have been made by private students and that in too many cases they have failed to receive credit for their labours, through neglect of the needful publication of the results to which they have attained.

This is strikingly manifested in the case now under consideration, where it is shown by Mr. Clerk Maxwell that Henry Cavendish anticipated Faraday's discovery regarding the specific inductive capacity of different substances and measured its numerical value in several substances; while so early as 1781 he anticipated the law of electric resistance laid down by Ohm in 1827, and confirmed by the researches of the British Association Committee, given to the world in 1870.

While some of Mr. Cavendish's electric works were made known in his lifetime, such as his well-known paper on the torpedo (dynamo?), the world remained in general ignorance of the extreme value of the experiments now made public in this volume. In the introduction, it is shown by extracts from Lord Stanhope and Dr. Thomas Young that scientific men were in almost complete ignorance both of Mr. Cavendish's experiments in electricity and of the nature of the results he achieved. Indeed, we are indirectly furnished with an evidence that to this day the researches of this recluse of science are not fully appreciated; although Professor Chrystal, in his article "*Electricity*" in the ninth edition of the Encyclopaedia Britannica, shows a proper acquaintance with the researches of Cavendish, the writer of the biography in an earlier volume gives almost word for word references to Cavendish which are quoted by Mr. Clerk Maxwell as evidence of how little of the true value of these researches was formerly understood. The plan of the present volume is to give, in a series of 683 articles, the experiments as described in papers or separate notes by Cavendish himself, these being accompanied by several facsimiles of his drawings to show how rude and simple was the apparatus used in his experiments. In a series of notes, the editor elucidates many of the more interesting experiments, making the volume a repertory of information in which the early experiments of Cavendish are elucidated by comparison with the advanced knowledge of our own day.