

Gray, Andrew

(1847–1925)

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Gray, Andrew (1847–1925), physicist, was born in the parish of Auchterderran, Fife, on 2 July 1847, the eldest son of John Gray, labourer, then farmer, of Lochgelly, Fife, and his wife, Margaret Wilson. He was educated at the local village school and later studied with private teachers in Edinburgh. His talent for mathematics was recognized and he was encouraged to enter the University of Glasgow in 1872 at the comparatively advanced age of twenty-five. He graduated MA with honours in mathematics and physics in 1876, winning prizes in natural philosophy (1874–5) and mathematics (1875–6). He was appointed, in 1874, private assistant and secretary to Sir William Thomson (later Lord Kelvin), professor of natural philosophy at Glasgow, and in 1880 he was made official assistant. He was Eglinton fellow in mathematics, 1876. In 1870 he married Ann Gordon; they had four sons and four daughters.

Gray became the foundation professor of physics in the University College of North Wales, Bangor, in 1884, and succeeded Kelvin as professor of natural philosophy at Glasgow in 1899, winning the chair against competition which included the young C. T. R. Wilson, and ushering in a period of undistinguished research in physics that lasted nearly fifty years. It would not be unfair to say that Gray dotted Kelvin's *is* and crossed his *ts*, and did little that was original. The splendid, but now lost, lecture theatre in Gray's 1907 Natural Philosophy Institute building (later the Kelvin building) was designed with Kelvin's expansive style in mind. Gray's major publications (*Absolute Measurements in Electricity and Magnetism*, 1883; *Theory and Practice of Absolute Measurements in Electricity and Magnetism*, vol. 1, 1888, vol. 2, 1893, new edn, 1921; and *Dynamics and Properties of Matter*, 1901) reflect Kelvin's interests of a decade or so earlier. The story may not be untrue that just after the Second World War a drawer in the natural philosophy department was found to contain shards of glass along with a note saying 'Glass broken by Lord Kelvin'. He published *The Scientific Work of Lord Kelvin* in 1908, the year following Kelvin's death, and organized the first of the historical collections of Kelvin apparatus and instruments to be preserved in the department. Yet his *Absolute Measurements in Electricity and Magnetism*, expanded in 1888, 'did much to make experimental electricity an exact science' (*Proceedings of the Royal Society of Edinburgh*, 375), and was very helpful to physicists in national laboratories when determining electrical standards. Another of Gray's notable contributions to the physical literature was his massive *Treatise on Gyrostatics and Rotational Motion* (1919). In this difficult subject he was reputed to have attained Dirac's ideal of understanding: he could say what would happen without actually solving the equations.

Gray's principal achievements were as an indefatigable teacher, including extension teaching, and university administrator. Where Kelvin might easily have fallen foul of modern teaching quality assessments, Gray's attention to detail, his advice and guidance to students, kindness, and pastoral care would have seen him through with flying colours. As a result the number of students taking the various natural philosophy classes in the university increased enormously, though few of them were inspired to greatness as many were by Kelvin's exciting but, for the ordinary student, execrable lectures. Gray reorganized the obsolete department he inherited at Glasgow, and founded the Natural Philosophy Institute in 1906, the largest building devoted to physics in Britain; by 1923 more than 600 students a year took laboratory courses there.

Gray was elected FRS (Edinburgh) in 1883 and served as a member of council (1903–6) and vice-president (1906–9); in 1896 he became FRS (London) and was awarded an honorary LLD by the University of Glasgow. He played a full part in the life of the university, serving as senate assessor on the university court (1904–12), and in the intellectual life of the city. He was president of the mathematical and physical section of the then extremely active Royal Philosophy Society of Glasgow in 1902–3 and was for some years a member of its council.

His organizational exertions on numerous committees during the First World War, the death of a son in 1915, and the demands of vastly increased student numbers after the war undermined Gray's already uncertain health and he resigned his chair in 1923. He died on 10 October 1925 at 15 Victoria Circus, Glasgow. He was survived by his wife. It was a source of satisfaction to him that James Gordon Gray, his second son, had renounced the engineering profession for physics and been appointed professor of applied physics at Glasgow.

Sources

- prize lists, matriculation records, U. Glas.
- Proceedings of the Royal Society of Edinburgh*, 45 (1924–5), 373–7
- Proceedings of the Royal Philosophical Society of Glasgow*, 54 (1925–6), 119
- A. R., *PRS*, 110A (1926), xvi–xix
- election certificate, RS
- b. cert.
- d. cert.
- CGPLA Eng. & Wales* (1926)

Archives

- U. Glas. L., letters
- CUL, corresp. with Lord Kelvin

Wealth at Death

£2781 6s. 7d.: confirmation, 11 Jan 1926, *CCI*