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John Benjamin Dancer (1812-1887)

John Benjamin Dancer was one of Manchester's most important nineteenth century scientific instrument makers. He introduced photography to Manchester and invented the microphotograph. The Museum's collections include a variety of scientific instruments made by him.

Dancer was born in London in 1812. In 1835, John took over his father, Josiah's, instrument-making business. He continued in business in Liverpool until 1841, when he entered into partnership with A. Abraham, a scientific instrument maker of Lord Street, Liverpool. He moved to Manchester to establish a branch of the business as Abraham & Dancer at 13 Cross Street. The partnership ceased in 1845. Dancer continued in business under his own name until 1878 when part of the business was transferred to his daughters Elizabeth Eleanor and Anna Maria.

Dancer became well known for the quality of his microscopes and particularly for selling good-quality instruments at a relatively low price. He received several honours which reflected the high quality of his microscopes, including a prize medal at the International Exhibition in London. He was appointed Optician in Manchester to the Prince of Wales. Dancer also supplied apparatus, including a travelling microscope and thermometers, to James Prescott Joule in about 1844 for his work on the mechanical equivalent of heat. Joule described Dancer's thermometers as "the first which were made in England with any pretensions to accuracy". Dancer is perhaps best known for his photographic work, in particular on microphotography and the stereoscopic camera. He took the earliest known photograph of Manchester - showing the cutler's shop at 1 Market Street - in 1842.

In February 1852, Dancer produced his first microphotographs. These were tiny photographss on microscope slides, which were viewed through a microscope or viewer. They soon became very popular. Dancer produced photographs of many subjects including eminent scientists, religious texts and sights such as Niagara Falls. Dancer's friend, Sir David Brewster, exhibited some of the microphotographs in Florence and Rome and showed them to the Pope. At the London Exhibition of 1862, Dancer received an honourable mention for his invention. In Dancer's lifetime, this technology only had a novelty value, but microfilming, as it is now known, became commercially important in the twentieth century as a means of copying documents.

In 1853, Dancer produced the first binocular stereoscopic camera. It allowed both pictures to be taken simultaneously at the correct distance apart. He improved it and, three years later, took out a patent for it. This was the first time he had protected any of his inventions in this way.

He also made improvements to the magic lantern: in 1837, he used limelight, previously used in signalling, to increase the intensity of the illumination. This enabled a 15-ft (4.6-metre) wide image to be projected from the back of a large lecture hall. In his autobiography, Dancer claims to have been the first person to do this, but other people are known to have been working on similar improvements at the same time. Dancer continued making improvements to the magic lantern after his arrival in Manchester. He developed a new dissolving tap, which allowed one image to be faded into another. He also re-designed the optical systems so that the centres of both images were as near to each other as possible.

In the early 1850s, Dancer made the photographic lantern slides using the collodion process, which may have been the first made in this way. There is some debate about this, but he is known to have provided more than 30 photographic slides for an exhibition at the Mechanics Institute in January 1854. The quality of his photographs led to about 20 painted slides being discarded before the end of the show. In 1857, Dancer introduced the 'Fairy Fountain', a water show with scores of minor jets in a variety of forms and colours. This was an improved version of a luminous chromatic fountain - a single column of water - and proved very popular.

Dancer died in November 1887, while living with relatives in Birmingham. He was buried in Brooklands Cemetery in Sale, near Manchester. In 1960, the National Microfilm Association of the USA awarded the Dancer Pioneer Medal with the citation: "To John Benjamin Dancer, a man of strong character and immense energy; alert and practical, a skilled craftsman and manipulator; sympathetic, ever ready to help the youthful searcher, inventor of microphotography, the National Microfilm Association is proud to present this posthumous Medal of Meritorious Service to the microfilm industry."

For more information:

Read Wetton, Jenny. 'Scientific Instrument Making in Manchester 1790-1870', *Memoirs and Proceedings of the Manchester Literary and Philosophical Society* 130 (1990-91).

Wetton, Jenny. 'John Benjamin Dancer, Manchester Instrument Maker 1812-1887', *Bulletin of the Scientific Instrument Society* 29 (June 1991).

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