

### *Short Articles*

London instrument trade; their products included the early tripod and Marshall microscopes made of leather and wood; though in the eighteenth century the principal material of construction was brass. In Scotland John Finlayson was probably the first maker of microscopes (1743), and his compound microscopes were followed by a unique group of brass or silver simple microscopes made by John Clark. His development of the simple microscope was important, for this instrument offered significant optical advantages over the compound microscope which led to its use for research. Early in the nineteenth century simple microscopes were being used by men such as William Sharpey (1802–1880) and Robert Brown (1773–1858); while in Edinburgh Alexander Adie, an instrument-maker working under the instruction of Sir David Brewster (1781–1868), was making simple microscopes fitted with jewel lenses. Adie was also the maker of a reflecting microscope – a design representing an attempt to improve the optical performance of the uncorrected compound microscope.

A breakthrough came with the introduction of achromatic microscope objectives in the years 1825–1850, and Alexander Adie was one of the first of the provincial opticians to sell instruments of this type, which had been initially developed in London and Paris. Some of Adie's instruments copied the designs developed in Paris, though in addition many such microscopes were imported, particularly for medical use. Scottish microscopists also used instruments made by the London opticians. Notable examples of surviving London-made microscopes from this period are the Ross stand used by Balfour which is in the Royal Scottish Museum, and that made by Smith and Beck for Joseph Lister, now in Glasgow's Hunterian Museum.

This last instrument, made in 1842, clearly illustrates the progress made in instrument design in the previous few years: for it has a curved Lister limb, substage condenser, and numerous accessories, as well as greatly improved optics. It is possible to assess the performance of the newly introduced achromatic objectives of this period by the measurement of their Optical Transfer Function. This procedure, which compares the contrast inherent in a test target with that in the image formed by the optics, shows that objectives of moderate apertures, such as were used by Lister for his early researches, have an optical performance nearly equal to that of modern objectives of equivalent aperture. Such data serve to demonstrate the significance of the optical improvement achieved in the early nineteenth century, and further emphasize that instruments preserved in museums are important for our understanding of the development of science and medicine.

Dr. Paul spoke on:

#### SIR GEORGE BEATSON AND THE ROYAL BEATSON MEMORIAL HOSPITAL

George Thomas Beatson (1848–1933) took his first medical degree in Edinburgh. Shortly after that he spent some time on an estate in the west of Scotland, where he started work on an M.D. thesis on the subject of lactation. Some of the experience and information he acquired suggested to him that there was a non-nervous connexion between the ovaries and the mammae. This experience in the late 1870s was to influence his thinking during the next quarter of a century.

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After taking his M.D., he went back to Edinburgh as Lister's house surgeon. He remained a great admirer of Lister and, when he moved to Glasgow, wrote a series of articles on the antiseptic method. He became an assistant to the Professor of Surgery in the Western Infirmary and also surgeon to out-patients.

In 1890 an organization called the Glasgow Cancer and Skin Institution acquired a house at 163 Hill Street which became the first Glasgow Cancer Hospital. The first surgeon, Dr. Hugh Murray, took a decidedly anti-surgical stance, but in 1893 substantial changes were made in the hospital staff which resulted in the appointment of Beatson as consulting surgeon, as well as a new consulting physician and an assistant surgeon. Dr. Murray resigned following these changes, and Beatson became surgeon to the hospital. In 1896 new premises were acquired at 132 Hill Street, which form the basis of the present Hospital.

In that year Beatson published in the *Lancet* his report of three patients with cancer of the breast whom he had treated by bilateral oophorectomy.<sup>1</sup> He cited as his reason for doing the operation his earlier thinking about the non-nervous connexion between the ovaries and the breasts. Although this work was followed up by many other surgeons, Beatson himself seems to have done very few operations of this kind subsequently.

He had a great interest in the Territorial Army and the St. Andrew's Ambulance Service. He was also instrumental in establishing the Scottish Red Cross. In recognition of these activities, he was knighted in 1907. He also received several honours, including the French Legion of Honour and the K.B.E., because of his distinguished service in the First World War.

The need for extended and improved hospital accommodation became apparent in the early 1900s. A campaign was mounted to raise money for this purpose, and also for the establishment of a research laboratory. The outcome was the rebuilding of the hospital which was re-opened in 1912 by Princess Louise as the Glasgow Royal Cancer Hospital. The first Director of Research was then appointed.

Research work lapsed during the First World War but was resumed again in the 1920s. Dr. Alexander Peacock was appointed Director in 1928 and recounts his recollection of being driven to the Royal Scottish Automobile Club by Beatson in his horse and carriage! Beatson was active in the cause of the voluntary hospitals throughout his life.

With the inception of the National Health Service in 1948, the hospital came under the Western Board of Management, and it was renamed the Royal Beatson Memorial Hospital in 1953. In 1967 the Research Laboratories were renamed the Beatson Institute for Cancer Research, which continued to occupy the upper floors of the hospital until 1977.

The hospital will soon be closing, but its memory will be perpetuated in the Glasgow Institute of Radiotherapeutics and the Beatson Institute for Cancer Research, while Beatson's name will always be associated with the role of endocrine glands in cancer.

<sup>1</sup> G. T. Beatson, 'Inoperable carcinoma of mamma', *Lancet*, 1896, ii: 104-107, 162-165.