

THE SCOTTISH SOCIETY OF THE HISTORY OF MEDICINE

REPORT OF PROCEEDINGS Session 1979–80

The Society has again had a successful session. Membership has been well maintained and the meetings enthusiastically supported. Two meetings were held in Glasgow, and the third was a joint one with members of the Pybus Club of Newcastle upon Tyne.

THE THIRTY-FIRST ANNUAL GENERAL MEETING AND NINETY-FOURTH ORDINARY MEETING

The Thirty-First Annual General Meeting was held in the Department of Pathology of the Royal Infirmary of Glasgow on 17 November 1979. The Ninety-Fourth Ordinary Meeting, which immediately followed, centred on an exhibition of Listeriana established in the Department in 1923. Professor Donald Campbell of the Chair of Anaesthesia set the scene by describing some aspects of the Royal Infirmary and of Glasgow in earlier days. Mr. Donald F. Hay, for over fifty years the mentor of visitors to the Listerian Collection, presented a brief background to the various exhibits.¹

Professor Campbell's paper was entitled:

THE ROYAL INFIRMARY AND OLD GLASGOW

It is interesting to consider, as a background to the foundation of the Glasgow Royal Infirmary, some of the history of the surrounding area, mainly the Barony of Glasgow, and mention a few of the distinguished men associated with the city, the university, and the hospital.

The birth of the city may be traced to the foundation by St. Mungo, or Kentigern, of his monastic community on the banks of the Molendinar burn in 543. It may be fanciful, and there is no real supporting evidence, to suggest that, like other religious communities, this supplied some primitive medical attention to the local population. If so, it is likely that some form of medical care has continued unbroken on the present site for over 1400 years! The old St. Nicholas Hospital (the Provand's Lordship), the oldest building in the city still extant, was founded primarily to care for orphans and the aged, but some of the work carried out there in the fifteenth century would now be considered to be socio-medical.

It is certain, however, that burghers of the city met in the Tontine Hotel in Argyle Street to open a subscription list which led to the building and opening of the Royal Infirmary on its present site in 1792. It was a fine building, designed by the Adams brothers, and lasted till the present building was erected at the turn of the nineteenth century. At the time of the foundation of the Infirmary the population it was designed

¹ Donald F. Hay, *Lister at the Royal*, Glasgow, University of Glasgow Press, 1977, pp. 11–18.

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to serve stood at about 62,000. It now serves, along with its associated hospitals, around 250,000.

By the middle of the eighteenth century Glasgow showed distinct signs of social improvement, enterprise, culture, and even luxury. The university (founded 1451) in particular fostered the intellectual life of the city, much neglected since the decline of the cathedral as a centre of learning following the Reformation. Over four hundred students attended the university, quite a large number for that time. About half were from England and Ireland, where the universities were closed to dissenters. Men of learning from the Glasgow district were actively involved in the foundation of many institutions abroad, notably the universities of Princeton (John Witherspoon (1722–1794)) and McGill (James McGill, M.A. Glasgow (1744–1813)).

Amid all the signs of progress, within the city lived a man whose genius was to have world-wide repercussions. James Watt (1736–1819) came from Greenock, and he was employed as a mechanic. The Corporation of Hammermen would not permit him to set up in business because he was neither the son of a burgher nor apprenticed to a citizen. The college professors, however, showed rare good sense and allowed him to set up his workshop within the university, where he made, among other things, scientific and medical instruments. His shop was frequented by students who lent him books, and by professors like Robert Simson (1687–1768), Adam Smith (1723–1790), William Cullen (1710–1790), and Joseph Black (1728–1799), who discussed with him the scientific questions of the day.

Dr. John Moore (1729–1802), a physician with considerable literary ability, lived in the Trongate at this time. He was the father of the hero of Coruña, Sir John Moore (1761–1809), and his younger brother, James Carrick Moore (1763–1834), became a noted surgeon. Incidentally, Sir John Moore's statue was the first of many to be erected in George Square, and is cast from the brass of melted-down cannon from Coruña.

Thomas Campbell (1777–1844), the poet, was born nearby in Nicholas Street (behind the Provand's Lordship), and entered the university at the age of twelve at the time the Royal Infirmary was founded. He later became Lord Rector of the university on three successive occasions. Other men of letters walked the High Street and attended the university at this time, notably James Boswell (1740–1795), and Tobias Smollett (1721–1771), who served his apprenticeship as a surgeon in Glasgow, being at one time illustrator in the department of anatomy in the university. He translated and published the first edition in English of Cervantes' *Don Quixote* in 1755.

The Old University stood for over four hundred years on College Street, the continuation of High Street. It was a beautiful building and precinct, with the sacred Molendinar flowing through the College Green's spacious lawns on its way from Hoganfield Loch to the Clyde. The Hunterian Museum, one of the finest buildings in Glasgow, stood within the grounds. The gift of Dr. William Hunter, it contained exhibits comprising the best contemporary collection in Europe and a library of over 12,000 volumes.

Dr. Cleghorn of Shawfield was a lecturer in chemistry at the university at the turn of the century. He became the first physician in charge of the asylum for lunatics

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opened in Parliamentary Road, near the Royal Infirmary, in 1814. His portrait by Sir Henry Raeburn now hangs in Gartnavel Hospital.

The students in Glasgow seem to have participated only to a limited extent in resurrectionist activities. Nevertheless, under the bold leadership of Mr. Granville Sharp Pattison (1791–1851), a lecturer on anatomy and surgery in the Andersonian School, they drew lots in secret to rob graves in the surrounding churchyards, usually the Ramshorn Kirk nearby. Matters came to a climax when they robbed the grave of a well-known merchant's wife, a Mrs. McAlister. An enraged mob attacked the university in High Street, and parts of the body were discovered. Pattison and three students were brought to trial before the High Court at Edinburgh in 1814. They were acquitted, but feelings ran so high in the city that Pattison was forced to go to America, where he eventually became an eminent surgeon and professor of anatomy.

The Royal Infirmary had an unusual origin in that it was initiated not by medical men but by the Professor of Logic at the University, George Jardine (1742–1827), who was also its first secretary. The original list of subscribers still exists. By this time the Glasgow Medical School proper was firmly established, largely through the efforts of William Cullen and his pupil, Joseph Black, before both went to Edinburgh.

A point of interest regarding the present hospital building is the small obelisk in the car park facing Cathedral Square. It marks the site of the Bishop's Palace and the ancient Castle of Glasgow. During the War of Independence, this was the last English stronghold in the area, defended by Sir Henry Percy, 1st baron of Alwick (1272?–1315). Sir William Wallace (1274?–1305) with three hundred cavalry, at the battle on High Street known as the Bell o' the Brae, overthrew the garrison of over a thousand men and sank his huge sword in Percy's head – not the last severe head injury to occur on the doorstep of the Glasgow Royal Infirmary, which has now the busiest casualty department in the United Kingdom!

THE NINETY-FIFTH ORDINARY MEETING

This meeting was held in the Royal Beatson Memorial Hospital, Glasgow, on 19 April 1980, when papers were presented by Drs. R. H. Nuttall and John Paul. Dr. Nuttall's paper was entitled:

THE EARLY SCOTTISH MICROSCOPES

Scottish microscope manufacturers and microscopists have taken an important part in the development and application of the instrument, particularly in the nineteenth century. Opticians such as Alexander Adie of Edinburgh were then making instruments comparable with those made in London, while medical men such as John Hughes Bennett (1812–1875) and John Goodsir (1814–1867) were in the forefront of medical microscopical research. In applied microscopy Henry Witham's work on geological microscopy was a vital initial step in the development of petrology. It is appropriate, therefore, that the Royal Scottish Museum in Edinburgh should have a representative collection of microscopes which well illustrates the development of the instrument.

In the seventeenth century microscope manufacture in Britain was confined to the

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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.¹ 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.

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

THE NINETY-SIXTH ORDINARY MEETING

The members met with those from the Pybus Club of Newcastle upon Tyne for a joint meeting at Close House, near Wylam, on 7 June 1980. Papers were read by Mr. W. A. Campbell of the Department of Inorganic Chemistry, University of Newcastle upon Tyne, and Dr. Alastair H. B. Masson.

Mr. Campbell's paper was entitled:

THE HISTORY OF THE CHEMICAL DETECTION OF POISONS

In the seventeenth century even learned men believed in a bizarre folklore of poisoning, in which powdered emerald was a universal antidote and unicorn's horn an infallible detector of poison. When Richard Weston was tried in 1616 for the murder of Sir Thomas Overbury by means of arsenic and mercury, the jury was warned not to expect proof of the identity of the poisons.

Chemical tests were first admitted as evidence in 1752 in the trial of Mary Blandy, accused of poisoning her father with arsenic. For the next eighty years arsenic was recognized, if at all, by the garlic odour on heating with charcoal and by precipitation reactions which were not specific. James Marsh (1794–1846) of Woolwich published his reduction test for arsenic in 1836, believing it to be so simple that anyone could use it without chemical training.² Marsh's test achieved notoriety in 1840 when M. J. B. Orfila (1787–1853) used it in the trial of Marie Lafarge in Paris. Contradictory results were obtained, probably due to contaminated reagents, and confidence in the test was shaken.

Hugo Reinsch's test (1841), in which a stain of arsenic was deposited on copper from hydrochloric acid solution, yielded similarly unsatisfactory results at the trial of Thomas Smethurst in 1859. This time failure was traced to interference by potassium chlorate in a cough medicine. Courts became reluctant to admit chemical evidence (often given by medical men), and as late as 1889 the judge at the trial of Mrs. Maybrick remarked, "one has to take a great deal of the scum from the testimony of skilled witnesses." Yet all the metallic poisons could then be identified unequivocally if care was taken to eliminate organic matter.

Separation was crucially important when the poison was organic. Pure alkaloids appeared in the 1820s and attracted the professional poisoner; soon commercial preparations of strychnine were sold for killing vermin. Most alkaloids were white powders giving characteristic colours with salts of metals in concentrated acids. These tests were adequate for pure compounds, but organic impurities from food or tissues interfered. The separation process invented by Jean-Servais Stas in 1852 and refined by Isaac Otto gave satisfactory results if followed meticulously. But when William Palmer, the Rugeley poisoner, was tried in 1856, in spite of strong circumstantial evidence that strychnine had been administered, none was detected; and at the Lamson trial in 1882 the only evidence for aconitine was the numbing effect on the tongue.

The science of qualitative organic analysis was slow to develop. Although M. E. Chevreul (1787–1889) had used melting points to characterize fatty acids in 1813,

² James Marsh, 'Account of a method of separating small quantities of arsenic from substances with which it may be mixed', *Edinb. new phil. J.*, 1836, **21**: 229–236.

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melting point tables in book form did not appear until 1899. F. F. Runge, C. F. Schönbein, and C. F. Goppelsroeder had separated coloured substances on blotting paper in the 1850s, but paper chromatography was not employed seriously until 1944. Finally, the application of electronic engineering to absorption spectroscopy from 1950 placed the identification of organic poisons on a firm scientific basis.

Dr. Masson then read his paper on

THE CRIMINAL USE OF ANAESTHETICS

Part of this paper has been published,³ and will be followed by further parts.

Sir Charles Illingworth, *President*
N. H. Gordon, *Honorary Secretary*
H. P. Tait, *Editor, Report of Proceedings*

³ A. H. B. Masson, 'Crime and anaesthesia – robbery', *Hist. Med.*, 1980, **8**: 18–19, 32.