

THE SCOTTISH SOCIETY OF THE HISTORY OF MEDICINE

REPORT OF PROCEEDINGS Session 1975-76

The Society had another successful session with excellent attendances and fruitful discussions following the papers delivered. While only two full meetings were held, at Glasgow and Stirling respectively, a special one was arranged, limited to thirty members, for a visit to an internationally known firm of bookbinders at Falkirk in October 1975.

At the invitation of the Director of the Royal Scottish Museum, Edinburgh, the Society joined forces with the Museum in organizing a symposium, 'The early years of the Edinburgh Medical School' to coincide with the celebrations in connexion with the 250th anniversary of the foundation of the Faculty of Medicine at the University of Edinburgh. The symposium replaced the usual summer meeting.

SPECIAL MEETING AT FALKIRK

At the suggestion of Mr. Phillip Harris, F.R.C.S., and the kind invitation of Mr. H. M. Dunn, owner and managing director of Messrs. Dunn and Wilson, Bookbinders, Falkirk, a small party of members met at the firm's Bellevue Bindery on 18 October 1975. Talks were given by Mr. Dunn and members of his staff on 'The art of refurbishing rare and antiquarian books', and thereafter the party took advantage of the opportunity of seeing something of the art and craft of restoration work. The visit proved a rewarding and very worthwhile experience. Hospitality was generously provided by Mr. Dunn.

THE TWENTY-SEVENTH ANNUAL GENERAL MEETING AND EIGHTIETH ORDINARY MEETING

The Society held the Annual General Meeting and the subsequent Ordinary Meeting at the invitation of Professor J. M. A. Lenihan at the Department of Clinical Physics and Bio-Engineering of the West of Scotland Health Boards at 11 West Graham Street, Glasgow, on 8 November 1975.

At the Ordinary Meeting which was preceded by lunch and the Annual General Meeting, Professor Lenihan read a paper entitled:

HAIR AND HISTORY

The following is a summary of the paper.

Recent advances in analytical chemistry have made hair a material of considerable value to archaeologists and historians. Hair is an important route of excretion for arsenic and for many metals, which become firmly bound in protein structures. Consequently the chemical analysis of hair gives useful information on internal and

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external contamination by non-essential metals, such as lead, mercury and cadmium, which may be absorbed through food or from the environment.

The study of hair as a mirror of the environment began about twenty years ago and was first practised on a large scale in Glasgow, using the technique of neutron activation analysis. This technique involves the identification and measurement of the complex pattern of short-lived radioactivity induced by bombardment of a small sample of material by neutrons in a nuclear reactor. The induced radioactivity is highly specific of the elements contributing to it; the technique is a sophisticated version of the flame test familiar to students of chemistry.

An important feature of activation analysis is its extraordinary sensitivity—often a million times better than the traditional methods of wet chemistry. With this capability (and with more recent techniques such as atomic absorption spectrophotometry which offer comparable sensitivities) a great deal of interesting information is now within the reach of the analyst.

Fortunately hair is a material which, if stored in reasonably good conditions, deteriorates little with the passage of time. Hair which has been buried under the ground does not survive for long unless it is in a sealed container, but a great deal of hair is kept above ground for various reasons.

The estimation of arsenic in human hair is a typical problem tackled by activation analysis. The analytical techniques in use until quite recently required a gram of hair for this estimation; activation analysis, as developed by Dr. Hamilton Smith of Glasgow, allows accurate determination of the arsenic content of a one-millimetre length of a single hair. The technique was used in a number of clinical investigations before it came to public notice in the early 1960s as a result of Dr. Smith's investigations on Napoleon's hair. It had been suggested that the emperor was poisoned while in custody on St. Helena. Many authentic samples of his hair taken during the years 1816–1821 became available for analysis. All showed arsenic levels considerably higher than would be expected in an unexposed person today but there was no convincing evidence of administration with homicidal intent. On the contrary, sectional analysis (millimetre by millimetre) of the hair showed a distribution characteristic of regular administration at the moderate levels compatible with therapeutic practice of the early nineteenth century.

King Charles II was an amateur alchemist and spent much time on the distillation of mercury. In response to a suggestion (based on the study of his clinical history) that he died of mercury poisoning, a small sample of the king's hair was found to contain mercury at a level of 54 ppm—about twenty times that which would be found in an unexposed person today.

Analysis of a sample of Robert Burns's hair showed a mercury level of 8 ppm, suggesting that he had, as one of his biographers observed, taken mercurials for medicinal reasons.

Other recent work in Glasgow has included the study of medieval hair (found, rather surprisingly, to be heavily contaminated with mercury) and Roman hair. An extensive study of eighteenth- and nineteenth-century hair is now in progress to assess levels of environmental contamination (internal and external) in earlier times. Preliminary results show that, contrary to popular belief, the internal environment is now

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considerably cleaner than it was. This change is presumably influenced by the declining use of arsenic, mercury and lead in medical practice. Zinc levels in hair are now significantly higher than in the nineteenth century—possibly reflecting improvements in nutrition.

The analysis of hair for heavy metals is being exploited also in the interests of occupationally exposed groups, including dentists (who absorb great amounts of mercury) and industrial workers handling mercury, arsenic and other potentially toxic metals. Measurement of lead in hair also gives useful information about environmental contamination in relation to water supplies and industrial activity.

An exhibition of items relevant to Professor Lenihan's paper was on view in the Department.

THE EIGHTY-FIRST ORDINARY MEETING

This meeting was held on 28 February 1976, at the University of Stirling. The speaker was Professor R. H. Campbell of the Chair of Economic History at the University and he chose as the title of his paper, 'Diet and the historian'. A wide-ranging address, it did not lend itself to summarizing which would in any way do justice to the speaker.

THE SYMPOSIUM

As already indicated, the Symposium was organized jointly by the Royal Scottish Museum and the Society to coincide with the opening of a special exhibition in the Museum, 'Edinburgh and Medicine', and with other activities associated with the celebrations of the 250th Anniversary of the foundation of the Faculty of Medicine of the University of Edinburgh.

Held in the Lecture Hall of the Museum on 26 June 1976, a distinguished panel of speakers from the United Kingdom, New Zealand, Holland and the United States took part, chairmen at the three sessions representing both the Museum and the Society. The *Proceedings* of the meeting have now been published by the Royal Scottish Museum, Edinburgh.

C. G. Drummond, *President*
H. P. Tait, *Vice-President*