

THE SCOTTISH SOCIETY OF THE HISTORY OF MEDICINE

REPORT OF PROCEEDINGS

Session 1974–75

The Society continued its activities with steady support and interest as the attendances and discussions at the various meetings demonstrated. The usual three meetings were held, at Edinburgh, at Glasgow and at Elgin respectively, the latter being the first to have been held at the northern cathedral city.

THE TWENTY-SIXTH ANNUAL GENERAL MEETING AND SEVENTY-SEVENTH ORDINARY MEETING

The Society held the Annual General Meeting and the subsequent Ordinary Meeting in the Hall of the Scottish Branch of the Pharmaceutical Society of Great Britain at 36 York Place, Edinburgh, on 26 October 1974. Appropriately, Mr. Charles G. Drummond, F.P.S., was elected president, the first pharmacist member to hold that office. The subsequent Ordinary Meeting was a joint one with members of the Branch and it was an outstanding success. Two papers were read, by Mr. Drummond and Dr. William Cunningham respectively. The president's subject was:

ACCORDING TO THE ART

This paper was subsequently published in abridged form.¹

Dr. Cunningham's paper was entitled:

THE WORK OF TWO SCOTTISH MEDICAL GRADUATES IN THE CONTROL OF WOOLSORTERS' DISEASE

This paper describes briefly the work of two Scottish medical graduates, John Henry Bell and Frederick William Eurich, in the conquest of a former scourge of workers in the woollen industry, woolsorters' disease or pulmonary anthrax. Hunter in his classic modern work refers especially to the pioneer work of Eurich.¹ Bradford, the scene of their labours, rose from a small village to a large and prosperous city through its manufacturing and trading in wool, and good descriptions of it and its people may be found in the works of J. B. Priestley, one of Bradford's distinguished sons.

In earlier times woolsorting was considered a healthy occupation. Thackrah of Leeds² and James³ both considered it so. James commented on the number of healthy old men in this class. This was true until the middle of the nineteenth century when wool and hair from the East were introduced to the trade. Sudden fatalities began to occur among the woolsorters but for several reasons they did not attract special

¹ C. G. Drummond, 'According to the art', *Pharmaceutical Historian*, December, 1974, 4: No. 3, 2–4.

attention. The symptoms were often vague and varied. The sufferer might complain of tiredness, joint or chest pains, and continue at work; but died at home a few hours later. He was poorly paid and tried home remedies first, seeking medical aid as a last resort. The disease, therefore, was not recognized as an entity and deaths were certified as due to pneumonia, pulmonary embolism, aneurysm and other causes.

By the 1870s deaths from woolsorters' disease were increasing alarmingly with the expanding use of eastern wool and hair. The workers felt that there was an association between these, and concern and fear grew in the West Riding. It was the active breadwinners who were suddenly stricken, and when they died the workhouse was the only refuge for their dependants. But the times produced the man.

John Henry Bell, born at Bradford in 1832, of Scots parents, received his early education at Anwoth in Galloway and completed it at Bradford. Leaving school at fourteen, he served a six-year apprenticeship with a local doctor, and then became assistant to Dr. Braithwaite, a lecturer in the Leeds Medical School. He attended classes there, taking a high place in his year, and qualified M.R.C.S. and L.S.A. in 1857. He graduated M.D. at St. Andrews University in 1863. He practised in Bradford and was joint founder of the Royal Eye and Ear Hospital, being honorary surgeon there for forty years. It has been said that he was the first to describe nystagmus in miners and in cerebellar disease.^{4,5}

Bell became deeply concerned about the sudden deaths of young able-bodied men in the wool trade, many of whom were his patients. At first he thought that woolsorters' disease was due to germs produced by decomposing animal matter in the wool bales, but later Dr. John E. Eddison of Leeds, who had been visiting bacteriological laboratories in Europe, suggested to him that it might have some connexion with splenic fever of sheep and cattle, which the work of Davaine (1863) had indicated before being conclusively proved by Koch in 1877.⁶ Bell in 1879 inoculated animals with blood from a fatal case of woolsorters' disease. They all died, and he found the anthrax bacillus in their blood.⁷ He repeated these experiments in cases of both woolsorters' disease and malignant pustule and satisfied himself that both were due to the anthrax bacillus. Only a few of his colleagues supported his views, for most would not agree that there was such an association. However, Bell roused public attention when, in 1880, he certified the death of one of his patients as due to anthrax and added, "from his employer's neglect in not having the mohair he was sorting disinfected beforehand."⁸ The inquest created widespread public interest, for death was found to be due to, "blood poisoning, accidentally resulting from his employment sorting mohair." The jury made important recommendations based on Bell's preventive measures; that the wool be soaked in hot soapy water and sorted when damp, and washing facilities be provided for sorters. They hoped subsequent legislation would enforce preventive measures⁸ but, although no code of rules was officially introduced into Britain until 1897,⁹ workers, employers and the sanitary committee of Bradford Corporation voluntarily agreed to a code in 1884.¹⁰ Deaths from woolsorters' disease noticeably declined in the city thereafter. Bell's work was confirmed by three separate investigations by the Bradford Medico-Chirurgical Society, the Local Government Board, and the Board of Agriculture.¹¹

Bell recognized the existence of anthrax spores but did not realize how resistant they are to heat and other conditions. Deaths therefore still occurred and no further progress was made for some years. Meantime the second Scottish graduate, Frederick William Eurich, was appointed assistant physician to the Bradford Royal Eye and Ear Hospital in 1899. He and Bell became close friends. Bell thought highly of Eurich's keenness and ability and passed on to him his recorded case-notes on his retirement. In 1905, Eurich was appointed a member of the Anthrax Investigation Board for Bradford and district, conducting the medical and bacteriological work of the Board. He had to follow a long, hard, and dangerous path before he succeeded in making wool and hair safe from anthrax.

Eurich was born at Chemnitz in 1867. His family came to Bradford in 1875 and were naturalized in 1880. Eurich was educated at Bradford Grammar School and began medical studies at Edinburgh University in 1886, graduating with honours in 1891. He pursued postgraduate study in neurology under Erb and Weigert, but had to cut short his continental studies and return home when the firm employing his father failed. He took up the post of third physician and pathologist at Whittingham Asylum, near Preston, as the first suitable remunerative employment he could find. He thus gained considerable experience in mental disorders, but his interest in neurology remained and he wrote his M.D. thesis on "The neuroglia" which gained for him a gold medal. Commencing general practice in Bradford in 1896, he was appointed assistant physician at the Royal Eye and Ear Hospital and honorary assistant physician to the Royal Infirmary in 1899.

Dr. H. J. Campbell, senior physician at the Infirmary and professor of forensic medicine at Leeds, persuaded Eurich to assist him with classes there in 1900 and when Campbell retired in 1908, Eurich was appointed to his chair, which he held with distinction until 1932. He gave up general for consulting practice in 1907 on being appointed full physician at the Infirmary.

Eurich had been appointed bacteriologist to the city of Bradford in 1900 at a salary of £100 per annum and a grant of £150 to equip his laboratory, a corner of a classroom eight feet by ten feet with no direct daylight, in the Technical College, called by Eurich "the rathole". His work for the Anthrax Investigation Board began there in 1905 and it was 1917 before success crowned his efforts. Eurich was daily exposed to great risks over many years in pursuing his investigations. His only protection was a very primitive form of respirator containing a layer of absorbent cotton wool covering the nose and mouth. All instruments, shears and knives, were passed through the flame of a Bunsen burner. The table was washed down with a disinfectant and all dust burned. Yet, in spite of every care accidents can and do occur and, at a late stage with success near, blood heavily infected with anthrax splashed over Eurich's face. He washed it with formaldehyde solution and, hoping for the best, carried on working. Next day his temperature was 103°F but fortunately this was due to an attack of influenza.¹²

At first, employers sent him samples particularly of wool which had been handled by sorters who had developed anthrax, and cultures showed that dried blood and serum adherent to fibres carried the spores. After examining 1,400 samples he concluded that East Indian goat hair and East Indian cashmere and Egyptian wools

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were the worst offenders. How to render infected material harmless was the vital problem. Wet or dry heat, sufficient to kill the spores, damaged the wool irretrievably, while chemical disinfection had to kill all anthrax spores without harming the workers, and had to be economical in time and money. After many years of patient experiment, Eurich found that a two per cent solution of formaldehyde at 100°F killed all anthrax spores in thirty to thirty-five minutes. The process he developed may be summarized as follows:¹³ The opened bales were immersed in three consecutive baths: warm water and alkali to soften and gelatinize the clots; warm soapy water for the same purpose; formaldehyde in an enclosed chamber to disinfect the wool. The wool was passed through the baths and compressed by rollers between them to disperse air bubbles and break up clots, thus allowing the formaldehyde to act. Finally, a moving lattice carried the wool to a drying chamber. It remained there for two or three days, the formaldehyde still acting, so that all spores were killed. A large number of independent tests confirmed these findings, and in 1921 the Government Disinfecting Station was built¹⁴ capable of disinfecting ten to twelve million tons of wool per annum. Subsequent events speak for themselves. Human anthrax is now a rare condition and, during forty years of practice in Bradford I came into contact with two cases of malignant pustule. I never saw or heard of a case of pulmonary anthrax.

Eurich was held in the highest regard by his colleagues and by the people of Bradford and the West Riding. Naturally he was looked upon as the ultimate authority on anthrax. He was a skilled physician and able diagnostician in all branches of medicine, but particularly in neurology in which he had retained his early interest. He was kind and considerate to his patients and fellow men, always ready to praise the work of others but modest about his own achievements. He did fine work in forensic medicine at Leeds and took considerable interest in penal reform.¹⁵ When he retired in 1937 the local medical profession gave a dinner in his honour, the wool trade presented him with a handsome cheque, and the Textile Institute at Manchester awarded him their gold medal, but he received no recognition from his country or his city.

Such is a brief sketch of the work of Dr. J. Henry Bell who adds lustre to the roll of alumni at St. Andrews, and of Professor F. W. Eurich, whose great work should not be forgotten by the University of Edinburgh of which he was proud to be a graduate.

I am grateful to Mrs. Margaret Scrutton, daughter of Professor Eurich, for much helpful information about her father and for lending me a book of press cuttings from the *Bradford Observer*, 1878–1906, which had been compiled by Dr. Bell and given to Professor Eurich, from which I obtained much useful background information.

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9. Ministry of Labour, *Report of the committee of inquiry on anthrax*, London, H.M.S.O., 1959, Cmnd 846, p. 84.
10. 'Woolsorters' disease', *Lancet*, 1884, ii: 291.
11. Eurich, op. cit., note 8 above, p. 58.
12. Margaret Bligh, *Dr. Eurich of Bradford*, London, James Clarke, p. 162.
13. Eurich, op. cit., note 8 above, pp. 108–109.
14. Ministry of Labour, op. cit., note 9 above, p. 95.
15. Bligh, op. cit., note 12 above, pp. 170–184, 247–264.

THE SEVENTY-EIGHTH ORDINARY MEETING

The Seventy-Eighth Ordinary Meeting was held at the Royal College of Physicians and Surgeons of Glasgow on 7 March 1975, when Dr. A. T. Sandison spoke on:

DISEASES IN PRE-CONTACT AUSTRALIAN ABORIGINES

The following is a brief note on the substance of Dr. Sandison's paper.

The Australian aborigines probably entered that continent from South Asia at least 20,000 years ago. In isolation from the rest of mankind they developed an intimate relationship with their often harsh environment and a rich culture while their technology remained palaeolithic. A study of large numbers of pre-European contact skeletons showed evidence of congenital anomalies, trauma, including fractures, osteoarthritis, and an apparently geographically determined treponemal disease. Gross dental attrition (but *not* dental caries) was common.

THE SEVENTY-NINTH ORDINARY MEETING

Members and their guests met on 31 May 1975 at the Eight Acres Hotel, Elgin, where, after a reception by the local District Council, followed by lunch, they adjourned for the meeting which was held in the hotel for convenience. Two papers were presented, by Drs. John Gammie and J. C. M. MacDonald respectively. Dr. Gammie spoke on:

THE HISTORY OF ELGIN

This was a delightful, racy account of Elgin from early times. Dr. Gammie drew attention to the many historic buildings in the locality and recalled that it was in the Red Lion Hotel, one of the oldest buildings in Elgin, that Boswell and Samuel