Henry Noble History of Dentistry Research Group

Newsletter, April 2001

Robert the Bruce and Leprosy*

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The inspiration to write the review was the inspection of the most recent facial reconstruction of Robert the Bruce. This gave the impression of a fearsome, ruthless and cunning warlord: the type of individual required to defeat opposition in Scotland, keep Edward I at bay, and hammer his pleasant but less effective son into the ground. Another feature was that loss of his upper incisors and associated alveolar maxillary bone indicated that he might have suffered from leprosy, a condition rare among medieval royalty.

There has always been some doubt as to whether Bruce, who died in 1329, did suffer from leprosy. Pearson[1], for example, has suggested that his condition could have resulted from "sporadic syphilis", which in the Middle Ages was commonly confused with leprosy. While no direct analysis of his skeletal remains has been carried out to establish unequivocally that he suffered from leprosy, there is evidence in favour of this from the analysis of what is believed to be the extremely accurate plaster of paris cast of his skull and mandible prepared by W. Scoular when Bruce's skeleton was formally exhumed in 1819. This took place in the presence of the King's Remembrancer, Sir Henry Jardine, several Barons of the Exchequer, Dr Alexander Monro tertius , Professor of Anatomy at Edinburgh University and His Majesty's first Physician for Scotland, and other gentlemen of science. The contemporary description of the exhumation, and the events that led up to it, are described by Jardine[2].

Two views of the cast in the Anatomy Museum at Edinburgh University. While the two upper canine teeth are still present, the upper incisor teeth are missing, as is the left zygomatic arch.

During 1817, the Magistrates of the Burgh of Dunfermline resoved to build a new church, as the parish church that occupied the nave of the ancient cathedral was in ruins and could no longer be used as a place of worship.

During clearance of the site the workmen came by accident on what appeared to be a royal tomb. This was located at the very centre of the ancient cathedral in front of where the high altar had formerly stood, and was protected by two large stones, a headstone and a much larger stone (six feet in length) into which six iron rings had been fixed by lead. When these stones were removed, they found the complete skeletal remains of an individual entirely enclosed in two layers of lead, with what remained of an embroidered linen cloth shroud over it, the fine linen material being interwoven with threads of gold. Over the head of the individual, the lead was formed into the shape of a crude crown. The find was reported to their Lordships, who directed the Sheriff to secure the tomb.

In the following year the tomb was opened in the presence of the King's Remembrancer and the other witnesses indicated above. The lead was in a poorer state than when observed the previous year, and the lead crown was missing, having been removed by spectators when the tomb was first opened. The lead covering the head was sawn off to isolate the skull and mandible. According to Jardine:

The whole teeth under the jaw were entire and in their places, but there were four or five in the upper jaw wanting, with a considerable fracture of the jaw bone in front, evidently occasioned by a blow, which the King is supposed to have received in one of the many extraordinary adventures to which he was exposed in the early part of his life.[3]

After drawing attention to the excellent state of preservation of the other components of the skeleton, and noting that all the soft tissues had entirely disappeared, Jardine drew particular attention to the appearance of the sternum. This:

. . . had been sawed asunder longitudinally from top to bottom – the most satisfactory evidence that it was the body of King Robert Bruce; as it proved beyond doubt that it had taken place prior to his internment, in order to get at the heart, which . . . he had directed to be carried by Douglas to the Holy Land, and which the ignorance of the anatomists of those days had made them perform, in order to comply with their Sovereign's last commands.[4]

Several weeks after the skeleton had been minutely examined and appropriate measures taken, it was wrapped up again in lead coverings and the whole deposited in a large lead coffin. Into the latter molten pitch was first poured to a depth of about four inches, and then a selection of contemporary articles placed within the coffin, including five books, two of which were the 1714 edition of Barbour's *Life of Bruce*[5] and Kerr's *History of Scotland*[6], and seven gold and nine silver coins. Gregory had recommended that Bruce's remains be embedded in pitch "to preserve his remains from further decay".[7] The vault was then closed, initially with bricks and mortar, and sealed with about two inches of molten pitch into which was inscribed, "King Robert the Bruce, 1329–1819". According to Jardine "the sides of the vault were then built up with bricks, the whole arched over, and a strong stone, 18 inches thick, was built all around the brick arch".[8]

Among the appendices to Jardine's volume are: Anatomical remarks on the skull, by Robert Liston, Esq., Surgeon; and Phrenological remarks on the development of the brain, as indicated by the skull, by George Combe, Esq., to which is added 'extracts from *Illustrations of Phrenology*, by G. S. Mackenzie, Bart,[9] relative to the skull of King Robert the Bruce'. What is particularly curious is that despite the fact that Drs Monro *tertius* and Gregory were the only medical men amongst the distinguished gathering who were named, the only anatomical account that appears in Jardine's Report was provided by Liston, whose knowledge of the anatomical features of the skull would, in the normal course of events, be expected to be less than that of the Edinburgh Professor of Anatomy.

Liston's description of the skull and mandible, published in Appendix A, is extremely brief. While it draws attention to the massiveness of the mandible, the fact that the sites of all muscle insertions were particularly marked, and that "There is a kind of mark on the right side of the sagittal suture, most probably the consequence of a severe injury, and of subsequent exfoliation", he makes no mention of the "considerable fracture of the jawbone" as noted by Jardine; nor does he mention that a plaster of paris cast was made of the skull, should further craniometric measurements need to be made on the skull.

It is also of interest that a considerable portion of the left zygomatic arch is missing from the cast. According to Pearson "The cast lacks the left zygomatic ridge, whether broken off in the skull or more recently from the cast is not clear."[10] As a detailed analysis of the cast strongly suggests that this deficiency was present when the cast was made, and the two ends of the arch appear to show evidence of healing, it is particularly curious that this feature had not been observed by Jardine, or mentioned by Liston. As there appears to be no obvious signs of the "considerable fracture of the jaw bone in front" as described by Jardine, the possibility exists that he may have, in error, been describing the damage to the left zygomatic arch rather than to the mandible. It is possible that this occurred either because he was relying on his memory when he made this observation, or because he was unfamiliar with the anatomical terminology.

Pearson, in his account of the isolation of the skeleton of Bruce, drew attention to the fact that others present also published contemporary accounts of the event, but it is of interest that sections from these were not included in Jardine's definitive Report. Jardine also published a separate account of the events in the *Transactions of the Society of Antiquaries of Scotland*[11] which included an additional engraving entitled "Body of King Robert the Bruce after removing the leaden covering". This engraving is very naively delineated, but is of interest because it shows evidence of pre-maxillary erosion, and absence of the upper incisor teeth. This does not appear to agree with Gregory's account, which strongly suggests that these teeth were present up to the time that the cast was made. Gregory had stated that "two or three of his teeth, which were very entire" were nevertheless "so loose that they came out on taking a cast . . . of his skull, and one, or perhaps more, of his smaller bones were stolen".[12]

What is even more curious is that George Combe was requested to provide "phrenological remarks" and that these were included in Jardine's book as an appendix, along with an extract from Mackenzie's *Illustrations of Phrenology*. It is unclear whether Combe analysed Bruce's skull or the cast that had been prepared by Scoular. No measurements were provided in this analysis. Another phrenological report on the cast was subsequently prepared by William Scott, but this was not published until 1824, when it appeared in the *Transactions of the Phrenological Society*, this being the earliest of the journals published by the Edinburgh Phrenological Society. A perusal of both Combe's and Mackenzie's observations would seem to indicate that, while they were full of phrenological terms, they were clearly either consciously or subconsciously based on earlier accounts of Bruce's personality. The fact that these reports were included in Jardine's book strongly suggests the seriousness with which the phrenological findings were taken at the time.

Because of the very serious doubts that have been raised during the present century regarding Bruce's leprosy, the plaster of paris cast provides the key to all subsequent observations on Bruce's clinical condition, whether he had leprosy or otherwise, and for this reason it is relevant to briefly discuss its provenance. All available evidence suggests that the original copy of the cast is now located in the Anatomy Museum, University of Edinburgh. This cast was found at Canaan Lodge, the residence of Dr Gregory, by Dr T. Burn Murdoch and presented by Mrs Leith, Dr Gregory's grand-niece, through him to the Anatomy Museum.

There are a considerable number of copies of the cast, four of which are still located in the Anatomy Department. Three are believed to be based on Gregory's copy, which has significantly sharper features than the others. It is this latter cast that was used by the sculptor Mr C. d'O. Pilkington Jackson, assisted by the then Professor of Anatomy, G. J. Romanes, to produce the portrait head of Bruce that was displayed in the Royal Scottish Academy in 1958.

A copy of the bust was purchased by the Henderson Trustees from the sculptor, and this is also now displayed in the Anatomy Museum. The same sculptor produced an equestrian statue of Bruce, on a "heroic" scale, the previous year. This is now located at Bannockburn. More recently, Gregory's cast of the skull has formed the basis of a clay reconstruction prepared along similar lines to those used to reconstruct the facial features of George

Buchanan,[13] and a computer-aided reconstruction has also been prepared by Professor Vanesis of the Forensic Medicine Department of the University of Glasgow.

While Pearson was of the view that the cast displayed evidence of "sporadic syphilis", Moller-Christiansen,[14] an authority on the osteological appearance of leprosy, claimed that it showed all the features of *facies leprosa,* and not those of *calvaria syphilitica*(syphylitic osteitis). According to the latter authors, the cast displays "antemortem loss of the central and right lateral incisors, and possibly the left lateral incisor". Similar features were displayed in other cases of this condition discussed in their article. The authors continue:

There are no signs of loss of teeth caused by trauma *in vivo*. But the most important component of the *facies leprosa,* the inflammatory changes in the hard palate, cannot be verified in this case because the plaster cast does not show the hard palate, and so does not allow investigation. The diagnosis must therefore be: The plaster cast of Robert the Bruce shows clear signs of *facies leprosa*, but to be one hundred percent sure of the diagnosis of leprosy, we would have to unearth his skeleton once more and make a proper examination.

In his analysis of the prevalence of leprosy in England and Ireland in antiquity, MacArthur[15] makes no mention of Robert the Bruce. He emphasized the difficulty of making a firm diagnosis of this condition due to the scanty clinical information provided at that time, particularly because of the extreme difficulty of distinguishing it from the numerous skin conditions that were commonly encountered in the Middle Ages. There can be no doubt that this condition[16] existed at the time, only that its prevalence was exaggerated because of ignorance, not helped by numerous biblical references, the majority of which probably did not refer to this condition.

The first mention of the possibility that Bruce might have suffered from leprosy appears in the *Chronicon de Lanercost,* a general history of England and Scotland from 1210 to 1346 which has been attributed to an unknown Fransiscan friar at Carlisle. This states that Bruce deputed the command of the army during the Weardale campaign in 1327 "because he had become leprous".[17] According to MacArthur "Bruce was absent from the Weardale expedition not through leprosy, or any other disease, but because he had gone to Ireland in an attempt to create a diversion there".[18] This information is confirmed from two contemporary state papers located in the Public Record Office that bear directly on his whereabouts at that time.

It is probably relevant to note that none of the three of his comrades who lived and served with him, John of Fordun, John Barbour and Andrew Wyntoun, make any mention of his having leprosy. In addition to suggesting that Bruce’s symptoms might have been due to "sporadic syphilis", Pearson was of the view that the peculiarities of his upper jaw might have been secondary to a war-time injury. In a footnote the additional suggestion is made that we should consider Raynaud’s disease as another possibility resulting from his lying in the damp, and that his symptoms just possibly might be confused with leprosy.[19]

An analysis of the contemporary evidence by MacArthur[20] suggests that Bruce did not in fact suffer from leprosy. While Bruce was despised by his English and Scottish enemies, as well as by the Pope, none could find words vile enough to describe him. Of the terms used, and most these days would be considered unprintable, it is curious that he was never referred to as a "leper", as this was probably the most offensive term available at that time. This alone very strongly suggests that there was probably no contemporary evidence that he suffered from this condition.

References

Selected references are given in abbreviated form and have been renumbered to correspond to the condensed text.

1 Pearson K. King Robert the Bruce, 1274–1329. His skull and portraiture. *Biometrika* 1924: **16**:252–72.

2 Jardine H. *Report to the Right Hon. The Chief Baron, and the Hon. The Barons of His Majesty's Court of Exchequer of Scotland, by the King's Remembrancer, Relative to the Tomb of King Robert the Bruce, and the Cathedral Church of Dunfermline.* Edinburgh, 1821.

3 *Ibid*. p.36

4 *Ibid*. p.37

5 Barbour J. *The life and acts of the most victorious conquerer Robert Bruce of Scotland. Wherein also are contained the martiall deeds of the valiant Princes: Edward Bruce, Sir James Douglass, Earl Thomas Randall, Walter Stewart, and others*. Edinburgh, 1648.

6 Kerr, R. *History of Scotland during the reign of Robert 1 Sirnamed the Bruce.* In two volumes. Edinburgh, 1811

7 Gregory J. Exhumation and re-interment of Robert Bruce. *Quarterly Journal of Science, Literature, and Arts* 1820; **9**:138–142. (This item is signed "G" and is said to have been written by Gregory.)

8 Jardine, p. 43.

9 Mackenzie GS. *Illustrations of Phrenology.* Edinburgh, 1820: 241–5.

10 Pearson, p.264.

11 Jardine H. Extracts from the Report made by Henry Jardine, Esquire, His Majesty's Remembrancer in Exchequer, relative to the tomb of King Robert Bruce, and the Church of Dunfermline. *Transactions of the Society of Antiquaries of Scotland* 1820:**2** (Part 1):435–55.

12 Gregory, p.142.

13 Kaufman MH, Hill B, MacLeod RI. Reconstruction of the facial features of George Buchanan: tutor of James V1 and founder of the Tounis College of

Edinburgh. *Proceedings of the Royal College of Physicians of Edinburgh* 1996; **26:** 272–81**.**
14 Moller-Christiansen V, Inkster RG. Cases of leprosy and syphilis in the osteological collection of the Department of Anatomy, University of Edinburgh, with a note on the skull of King Robert the Bruce. *Danish Medical Bulletin* 1965; **12**:11–8.

15 MacArthur W. Some notes on old time leprosy in England and Ireland. *Journal of the Royal Army Medical Corps* 1926; **45:** 410–22.

16 MacArthur W. Some notes on old time leprosy: the case of King Robert the Bruce. *Journal of the Royal Army Medical Corps* 1926;**46:** 323.

17 *Ibid*. pp. 324–5.

18 *Ibid*. p.322.

19. Pearson, p.266.

20. MacArthur, pp. 329–330.

Footnote: Bruce, leprosy, and the historians

. . . Bruce on his burial bed
Where he lies white as may
With wars and leprosy . . .

These lines from Edwin Muir's poem "Scotland's Winter" reflect the popular belief that Bruce had leprosy, but historians have tended to be sceptical. Pearson and MacArthur, quoted above, set the tone for later scholarly comment. Geoffrey W.S. Barrow, for example, has pointed out in his authoritative study of Bruce[1] that there is no sign of any attempt in the king's last years to segregate him, even moderately, from the company of friends, family, courtiers or foreign diplomats.

Current work in medical history lends support to this scepticism, although less importance is attached to the absence of segregation. In a paper read earlier this year at a History of Medicine seminar at Glasgow University, Dr Carole Rawcliffe,[2] Reader in medical history at the University of East Anglia, demonstrated that as far as Anglo-Norman times are concerned the segregation of lepers is largely a myth. By Bruce's day, she commented to the Newsletter, attitudes were becoming tougher, so that some degree of segregation would have been expected if Bruce had really suffered from leprosy, but it is principally for other reasons that she is convinced that he did not have the disease. Dr Rawcliffe cites Bruce's pilgrimage to Whithorn, made only a few months before his death, which would hardly have been possible for someone in the last stages of leprosy. The physicians of the day, she added, were more competent than is sometimes assumed and would have been capable of differentiating leprosy from other diseases; moreover there is no evidence that the king's apothecaries prepared such appropriate remedies

as mercury. Bruce's weak and wasted condition were, Dr Rawcliffe suggested, consistent with motor neurone disease or perhaps a stroke (a possibility also discussed by Caroline Bingham in her recent biography of Bruce).

For all these reasons Dr Rawcliffe believes that the leprosy label was probably "an English canard" and points out that Robert I was not the only king to be wrongly described as leprous – another was Henry IV, who is now known to have died of heart disease.

Glasgow's Bruce

A poor copy of a cast of Bruce's skull is part of the Cleland Collection in the Anatomy Museum in the University of Glasgow. According to Dr Dorothy Lunt, who has examined at least 100 skulls of Danish lepers, the features of this cast are consistent with facies leprosa, but the poor quality of the cast together with the impossibility of examining the nasal floor, as commented on by Moller-Christiansen et al., renders it impossible to reach a firm conclusion. Loss of the anterior maxillary bone and teeth resulting from the activity of souvenir hunters is an equal possibility.

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References

1 Geoffrey W.S. Barrow, *Robert Bruce and the Community of theRealm of Scotland* (3rd ed.), Edinburgh, 1988.

2 Forthcoming publication: "Learning to love the leper: aspects of institutional charity in Anglo-Norman England", *Anglo-Norman Studies*, 23, 2001.