

The bones of the Anglo-Saxon bishop and saint, Chad

a scientific analysis

by Angela Boyle

This report details the analysis of a group of human bones believed to be those of the 7th-century missionary priest, Chad. The results of skeletal analysis and radiocarbon dating of the material are described and an interpretation offered. The possibility that at least some of the bones were indeed those of Chad has not been discounted.

The closure of St Chad's Cathedral for extensive repairs and restoration in 1992 provided an ideal opportunity for analysis of relics believed to be those of the Anglo-Saxon bishop and saint, Chad. In February 1995 the reliquary was taken down from its position above the high altar and its contents removed. The box contained five incomplete bones. A sixth bone was housed in a separate reliquary displayed on the altar of St Edward's side-chapel.

*Documentary background*¹

Most of what we know about Chad comes from *Bede's Ecclesiastical history of the English people* completed in AD 731 (Sherley-Price 1990). Bede does not give us Chad's date of birth but he provides a clue: he states that Chad spent part of his early life in Ireland with another youth called Egbert. Since Egbert died at the age of 90 in AD 729 he must have been born in AD 638 or 639 (Greenslade 1996, 3).

Chad had three brothers, one of whom, Cedd, became bishop of the East Saxons and, ultimately, Abbot of Lastingham where he died of plague in AD 664. Before his death Cedd nominated Chad as his successor. In AD 665 Wilfrid was chosen as Bishop of York and was consecrated in France where he remained for nearly three

years. Oswy, king of the Northumbrians, became increasingly unhappy at the prolonged absence of his bishop and appointed Chad in Wilfrid's place. Chad's consecration, carried out by two British bishops who adhered to Celtic rather than Roman traditions (forbidden at the Synod of Whitby in AD 664) was seen as irregular and on Wilfrid's return from France Chad was replaced and retired to the monastery at Lastingham (N Yorks).

In AD 669 Chad was consecrated as bishop of the Mercians and given the see of Lichfield (Staff). Chad died of plague on the 2 March AD 672 and was buried beside his cathedral of St Mary, which may have stood on part of the site of the present Lichfield Cathedral. Bede records that in December AD 700 Chad's bones were translated to the new church dedicated to St Peter, one of the earliest known translations of an English saint. There is archaeological evidence to suggest the existence of a church by the later 8th century on a site within the middle of the present cathedral (M Greenslade pers comm).

The cult of Chad soon became established and Bede states that many miracles occurred both in the new church and at the earlier burial place. St Chad's shrine is described by Bede as a wooden coffin in the shape of a little house with an aperture through which pilgrims could insert their

hands and take out a little of the dust. This dust was believed to have miraculous properties when mixed with water and drunk by the afflicted. A slab situated inside Lichfield Cathedral marks the spot of the saint's tomb and the shrine was located behind the High Altar, though only some of the relics were kept there. An arm was stored in a separate case to be taken out and kissed by pilgrims on St Chad's day (2 March). Other bones were kept in a portable shrine for carrying around the diocese on special occasions.

In the medieval period the cult of Chad was extremely popular. By 1176 the cathedral's endowments included a rent of 6 shillings for a light to be kept burning at the saint's shrine. A roll of the cathedral sacristy dating to 1335 shows Chad's relics divided into four groups: his head was in a painted wooden box, one of his arms in a reliquary, some of his bones in a portable shrine, and the rest in the main shrine. The skull of Chad and his right arm were stored in the Chapel of St Chad's head along with most of the cathedral's other relics. On feast days the skull would be removed from its box and displayed to pilgrims. The present whereabouts of both the skull and the right arm are unknown.

The first impact of the Reformation came in 1538 with Henry VIII's attack on pilgrimage

together with six unlabelled bones.

The rediscovery of the relics coincided with the beginning of the construction of St Chad's Cathedral in Birmingham. Having satisfied himself that the box contained the relics of St Chad, Archbishop Walsh of Birmingham decided to place it in the new cathedral. Immediately prior to transferral of the box a record of its contents was made. This stated that four of the bones, described as a left femur, two tibiae and a portion of a humerus 'belonged to one body and are reasonably supposed and piously believed to be the relics of St Chad' (Greenslade 1996, 18). The remaining two bones were described as a left femur from a smaller body and 'a tibia, evidently recent, probably belonging to a missionary priest or a modern saint' (*ibid* 18).

Fig 1 Chad 1–3 (Photo: Michael Dudley)

shrines. Some at least of the relics of Chad were removed by Canon Arthur Dudley who entrusted them to two female relatives living in Russell Hall, Dudley. They subsequently handed the relics over to their friends Henry and William Hodgetts of High Arcal Farm in Woodsetton, Sedgely. The brothers divided the relics between them. On William's death Henry came into possession of them all. He related the story on his deathbed in 1651 to a Jesuit priest Peter Turner. Father Turner removed the six bones to a box and his account is published in the *Records of the English province of the Society of Jesus* (Foley 1875, III, 230–33). On Turner's death in 1655, the bones passed to John Leveson of Willenhall, near Wolverhampton. In 1658 the box was discovered by a party of soldiers who broke it open and carried off part of the relics, having first smashed one of the bones in two. In 1665 the remaining bones were transferred by another Jesuit into a box lined with silk. Sometime in the mid 18th century they passed into the keeping of the Fitzherbert family of Swynnerton. In 1839 the box was discovered at a chapel in a house known as Aston Hall (Staff) and was found to contain a number of bones labelled as belonging to saints

The reliquary

The 17th-century box, which conforms to the description given by the priest at Aston, Benjamin Holme, is velvet covered with a domed lid, a lock-plate, hinges and handles. The fabric is decorated with embroidered motifs and metal braid. A full report has been produced by Maria Hayward (1996) prior to conservation of the box for future museum display. The bones have been placed in a new box, made by Malcolm Spencer-Williams, an antique furniture restorer from Sutton Coldfield.

Skeletal analysis

Six bones all of which are human, were analysed. These are referred to in the text as Chad 1–6.

The reliquary contained five bones wrapped in two groups. Three bones were wrapped in a silk sheet tied by a ribbon (Fig 1). Chad 1 is the middle third of a long bone which probably represents a right adult femur. The proximal end has a horizontal cut mark which is modern in appearance. The bone is degraded and there is

possible evidence of animal gnawing on its surface. Chad 2 is a near-complete left adult femur with a gracile appearance. The bone ends are eroded and horizontal cut marks are apparent on the distal end. Chad 3 is a degraded adult right tibia with damaged ends (Fig 2). A small portion of the distal right fibula is fused to the tibia. There are indications of a possible cut mark on the fibula, though it does not appear to be particularly recent. The fibula shaft is a little thickened and it is just about possible to discern a cloaca or cavity on the underside of the fibula. A cloaca is an opening through newly formed bone which facilitates the escape of pus from a diseased area. It is likely that the fibula suffered a compound or open fracture. Fractures were rarely properly rested in the past and often would become weight-bearing prior to complete union of the broken ends.

A further two bones were wrapped

Fig 2 Detail of fused tibia and fibula (Photo: Michael Dudley)

in a separate sheet tied by a ribbon (Fig 3). A label attached to the ribbon bore the inscription '*ossa cujusdam ignoti*' (the bones of an unknown individual, probably written in the 19th century).

Table 1 Radiocarbon dates

Laboratory No	Sample No	Bone identification	Uncalibrated date	Calibrated (1 σ)	Calibrated (2 σ)
OxA-5563	Chad 1	right adult femur	1400 \pm 50 BP	605–665 AD	546–694 AD
OxA-5564	Chad 2	left adult femur	1435 \pm 50 BP	567–579 AD	531–675 AD
OxA-5565	Chad 3	right adult tibia and portion of right fibula (fused)	1430 \pm 50 BP	569–576 AD	543–678 AD
OxA-5854	Chad 4	left adult femur	1345 \pm 50 BP	640–720 AD	600–780 AD
OxA-5855	Chad 5	left adult tibia	1365 \pm 50 BP	632–679 AD	600–720 AD
OxA-5562	Chad 6	left adult tibia	1255 \pm 50 BP	677–801 AD	670–880 AD

Chad 4 is an incomplete left femur missing its distal end and with a damaged proximal end. There are signs of possible osteoarthritic degeneration of the femur head in the form of eburnation (polishing) and porosity. The second bone, Chad 5, a complete adult tibia, is extremely well preserved and does not appear to have suffered the same degree of surface degradation as the other bones examined. Chad 5 is the only complete bone and it was therefore possible to estimate the likely height of the individual at approximately 1.80m or 5' 9" (Trotter & Gleser 1952).

The final bone analysed (Chad 6) came from a reliquary on display in the Chapel of St Edward and is an incomplete adult left tibia. The proximal end of the tibia is missing, partly from erosion of the bone and partly from deliberate removal of a portion indicated by a relatively modern horizontal cut mark. The bone's degraded appearance suggests prolonged exposure and weathering.

Radiocarbon dating

Radiocarbon dating of the bones was undertaken by Dr Robert Housley and Dr Paul Pettitt at the Research Laboratory for Archaeology in Oxford.

Chad 1, 2 and 3 are, in radiocarbon terms, identical in age and osteologically could belong to a single individual. The dates suggest that the individual (or individuals) lived in the 6th or 7th century. Chad 4 and 5 are again identical in age and osteologically could belong to a single individual. This individual (or individuals) lived in the 7th or perhaps the 8th century. The date for Chad 6 indicates that this bone is unlikely to have been 7th-century in date and suggests rather that the individual lived sometime from the late 7th to the late 9th century. Although in radiocarbon terms Chad 1–5 could all represent a single individual, the presence of two left

femurs makes this osteologically impossible.

DNA

The viability of DNA analysis was explored with Dr Robert Hedges, but the likelihood of contamination from about 1300 years of handling meant such analysis was unlikely to be successful. It is possible that no trace of ancient DNA would survive at all. Even if contamination was limited and DNA survived, analysis would only have indicated how many individuals were represented.

Discussion and conclusions

At least two and possibly five individuals are represented by the bones housed in the reliquary and the radiocarbon dates indicate that each of them belonged to an individual who lived in the 7th century. The sixth bone tells a rather different story: it has been dated to the 8th or 9th century and therefore could not have belonged to either Chad or one of his contemporaries.

If we assume that one or more of the bones are indeed those of St Chad, we need to explain the presence of 'extra' bones which also date to the 7th century. The answer may be found in *Bede's Ecclesiastical history*. Chad was originally buried outside the church of St Mary prior

to being moved to the new church (probably on the site of the present-day Lichfield Cathedral) in AD 700. Unfortunately, Bede does not make clear whether Chad was buried in a coffin, although given his importance we might assume that he was. If so, it is perhaps less likely that the bones became mixed when they were disinterred. The likelihood of a group of bones of identical date (in radiocarbon terms) coming together at a later stage is slim. Alternatively, if Chad was not buried in a coffin it is quite possible that, in moving his remains, the bones of other individuals were disturbed and became mixed with those of the saint. The 'extra' bones may therefore belong to contemporaries of Chad who were buried alongside him. It is not possible from the documentary sources to identify who these contemporaries might have been as they are only ever referred to as Chad's 'companions'.

The results of this analysis have implications for the wider study of

relics, in particular those comprising only fragmentary skeletons. Clearly in this case, the quality of the dates has not been affected by the treatment which the bones have received.

Individual bones in mixed contexts are therefore more likely to be worthy of dating than has previously been supposed. This suggestion remains valid despite the recent disappointing results obtained from the reputed bones of St David (Paul Pettitt pers comm), whose post-mortem history was not as closely documented as that of the relics purported to be St Chad.

Angela Boyle is a Research Officer and Osteologist at the Oxford Archaeological Unit. Her main interests lie in the field of burial archaeology and she is currently working on a doctorate at the Institute of Archaeology, UCL, the topic of which is Neolithic and Bronze Age burial practices of the Upper Thames Valley.

Notes

1. This section is based largely on the work of Michael Greenslade (1996) which the writer gratefully acknowledges.

Bibliography

- Boyle, A 1996 'Report on the bones kept in St Chad's Cathedral, Birmingham', in M Greenslade, 1996, 25–26
- Foley, H, 1875 *Records of the English province of the Society of Jesus, III*. The Manresa Press
- Greenslade, M, 1996 *St Chad of Lichfield and Birmingham*, Archdiocese Birm Hist Comm, 10. Stafford
- Hayward, M, 1996 'Report on the velvet covered box containing the bones', in M Greenslade, 1996, 26–28
- Hedges, R E M, Pettitt, P B *et al*, 1997 'Radiocarbon dates from the Oxford AMS System: *Archaeometry* Datelist 24', *Archaeometry*, 39, 2, 445–71
- Sherley-Price, L, 1990 *Bede. Ecclesiastical history of the English people*, trans L Sherley-Price, revised R E Latham. Penguin. 4th edn
- Trotter, M & Gleser, G C, 1952 'Estimation of stature from long bones of American Whites and Negroes', *Amer J Phys Anthropol*, 10, 463–514