

Report on skeleton recovered from dunes at Jeffreys Bay, September 2005

This skeleton was found by Mr Kobus Reichert eroding out of the sand dunes at Jeffreys Bay, locality 33° 58' 38" S 24° 58' 50" E (Figs 1 and 2). Mr Reichert reported that the rocks shown in Figs 1 and 2 may once have been part of a cairn on top of the grave, but deflation led to their settling directly on top of the skeleton. The skeleton was lying in a flexed position, on its right-hand side, with the feet towards the east (Fig. 3). The most visible remains were collected by the police; archaeologist Johan Binneman later sieved the sand around the location of the skeleton to recover more of the small bones. No grave goods were recovered. The local community met the police and the heritage authorities at the site, and indicated through their spokesperson, Chief Michael Williams, that they would like the skeleton to be studied, as reported below.

The skeletal remains consist of the cranium, mandible, and almost complete post-cranial skeleton. The left side of the skeleton is more sun-bleached, consistent with a burial position in which the body was laid on its right side. The morphology of the pelvis allows estimation of sex, although the individual was not yet fully grown. There is strong anterior curvature of the lower sacrum, the area of the ischial spine protrudes into the pelvic basin, and there is no pre-auricular sulcus. The sub-pubic angle is relatively narrow. The sciatic notch is not strongly masculine or feminine. Overall, this constellation of features (especially the curvature of the sacrum and the shape of the ischia) indicates that the individual was male.

Many of the long-bones have unfused epiphyses (all observations apply to both left and right sides, unless otherwise specified):

<i>Skeletal element</i>		<i>Condition in JB skeleton</i>	<i>Usually fuses at</i>
Clavicle	Medial end	Unfused	18-22
Scapula	Acromial process	Unfused	14-22
Humerus	Head	Unfused	14-21
	Trochlea	Fused	11-15
	Lateral epicondyle	Fused, line still visible	11-17
	Medial epicondyle	Unfused	15-18
Radius	Head	<i>Just</i> fused (left has come loose in box. Right still attached)	14-19
	Distal end	Unfused	16-20
Ulna	Distal end	Unfused	18-20
Ox coxae	Iliac crest	Unfused	17-20
	Ischial tuberosity	Unfused	17-22
Sacrum	S1-S2, S2-S3, S3-S5	Just fusing	ca 17 – early 20s
Femur	Head	Fused, line still visible	15-18
	Greater trochanter*	Fused, line still visible	16-18
	Lesser trochanter*	Fused, line still visible	15-17
	Distal end	Unfused	14-19
Tibia	Proximal end	Unfused	15-19
	Distal end	Difficult to see. Right-hand side broken, left very fragmentary. Small part of left that	14-18

Fibula	Distal end*	remains appears to be fused. Fused, line still visible	14-18
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* Right only; left broken

Ages are of initial union for males, from Table 16 in Ubelaker (1989) and Fig. 20 in Buikstra and Ubelaker (1994).

Overall, this pattern is consistent with an age of about 15-17 years at death.

There are three small sutural bones along the lambdoid suture (see Figs 4 & 5). These are of no significance in terms of the health of the individual, but they are of interest because they are under strong genetic control, so that skulls that show the same patterns of sutural bones may come from individuals who are related.

On the roofs of both orbits, there is slight *cribra orbitalia*: porous areas where the bone has been partially resorbed. It is very difficult to determine the cause of this condition, although it is known to be associated with anaemia, infectious disease, high parasite loads and/or other health challenges. On its own, however, it does not necessarily indicate severe health problems, especially very mild cases such as this one.

Examination of the dentition shows that the mandibular and maxillary third molars were still erupting, as expected for someone of this age. The other teeth are lightly worn. The tooth enamel is badly chipped, making precise description of tooth-wear difficult. Most teeth show islands of dentine; on the first molars, these have coalesced into larger exposures, although some occlusal enamel remains. Both maxillary and mandibular incisors and canines show heavy wear facets sloping sharply from the occlusal surfaces down the lingual aspects of the teeth. Some teeth (e.g. the mandibular left canine and maxillary right second incisor) have no enamel left on their lingual surfaces. This is an unusual wear pattern, and is likely to derive from use of the teeth for some non-dietary purpose. There is one carious lesion on the occlusal surface of the maxillary first left incisor (Fig. 6). This has penetrated right through the tooth, through the root, and has led to an abscess in the socket, opening into the base of the nasal aperture (Fig. 7). It is possible that the cause of death was septicaemia from this infection.

There is a roughly circular cavity approximately 8 mm in diameter and 7 mm deep (a cloaca?) on the centre of the distal articular surface of the right humerus (Figs 8 & 9). No abnormalities of the right radius or ulna are apparent. This is an unusual feature and it is not clear what caused it; it is possible that it was the site of an infection (could this be related to the dental abscess?)

A fragment of rib bone was taken for stable isotope analysis in the Archaeometry Laboratory at UCT, and assigned the number UCT 12558 in the Archaeometry Laboratory sample register. Collagen was extracted according to the methods described in Sealy (2006). The collagen yield was 26.2% and the atomic C:N ratio was 3.1. The latter measure, especially, indicates that the collagen was well-preserved, so that the results of the stable isotope analysis are likely to be reliable. The $\delta^{13}\text{C}$ value was -12.6‰ and the $\delta^{15}\text{N}$ value 11.3‰ . These results show that this

person is likely to have eaten a mixed diet incorporating both marine and terrestrial foods. More detailed interpretation will require comparison with a larger sample of individuals from this region.

A radiocarbon date was obtained from GeoChron Laboratories, measured on bone collagen from a sample of bone that included ribs and fibula. The result was GX-32519 540 ± 60 BP. When calibrated (i.e. converted to a calendar date) the most likely date is 1427 AD, with a 2 sigma range from 1317-1347, 1388-1485 AD (using the Southern Hemisphere calibration programme of the Pretoria radiocarbon laboratory).

In summary, therefore, it is possible to say that this skeleton is the remains of a young man who died about 600 years ago, at the age of approximately 15-17 years. He was generally in good health. There is clear evidence that he habitually used his front teeth for purposes other than biting into food; perhaps as an aid in some sort of craft activity. Although we cannot be certain why he died, it may have been as a consequence of a generalised infection that began in a cavity in one of his front teeth.

References:

Buikstra, J. and Ubelaker, D.H. 1994. *Standards for data collection from human skeletal remains*. Fayetteville, Arkansas: Arkansas Archeological Survey Research Series No. 44.

Sealy, J. 2006. Diet, mobility and settlement pattern among Holocene hunter-gatherers in southernmost Africa. *Current Anthropology* 47(4):

Ubelaker, D.H. 1989. *Human skeletal remains: excavation, analysis, interpretation*. 2nd ed. Washington D.C.: Taraxacum.

The police case number is CAS 332/09/05. Bone sampled and exported for dating in accordance with Permit no 80/05/11/010/51 issued on 25 November 2005 by Mrs Mary Leslie of the South African Heritage Resources Agency.



Fig. 1 (left): Grave site (Photo by Kobus Reichert)

Fig. 2 (right): Close up of grave (Photo by Kobus Reichert)



Fig. 3. Position of skeleton. Skull was found about two metres away, and has been replaced in approximately its original position. Top of skull lies towards the west, feet towards the east (Photo and information from Kobus Reichert)

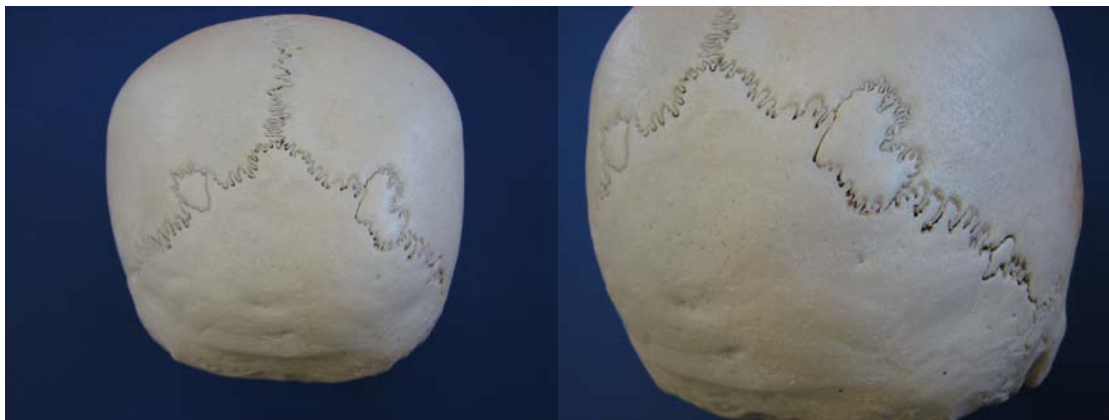


Fig. 4 (left): Occipital view of skull, showing sutural bones

Fig. 5 (right): Detail of right lambdoid suture



Fig. 6 (left): Occlusal view of palate, showing carious lesion in first left incisor. Right first incisor was lost post-mortem.

Fig. 7 (right): Frontal view of lower part of face, showing abscess at apex of root of first left incisor



Fig. 8 (left): Distal articular surface of left humerus, which is normal

Fig. 9 (right): Distal articular surface of right humerus, showing cavity

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