

## Human Skeletal Remains from Cheetup, Western Australia

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### Abstract

This paper describes Pleistocene human skeletal material from an excavation by M. Smith in 1979 at Cheetup, Western Australia. Recovered from a hearth now dated at over 12 000 BP, these remains include fire-damaged cranial, post-cranial, and dental fragments. Analysis of the material reveals that it represents a child, possibly female, 3-9 months of age at death. The source of the material and its condition are consistent with deliberate cremation.

### Background

The material described in this paper comes from Cheetup (33°52'S, 122°27'E), a rockshelter approximately 55 km E of Esperance, Western Australia (Figure 1). Excavated by M. Smith (1982), this site is listed in the catalogue of the Department of Aboriginal Sites, Western Australian Museum as W0594. These fragments (WAM registration number A23441) were recovered during the first season of excavation in 1979 at a depth of 7-33 cm in trench F12, spit 4, in a feature subsequently identified as a hearth. Radiocarbon dating of charred wood from this feature is  $12\ 845 \pm 310$  BP (GX-6604). Initial sorting by J. Balme of the bone fragments recovered, indicated the possibility of some being of human origin. The following paper confirms that preliminary identification, and describes the material in detail.

Previous descriptions of Australian Aboriginal skeletal material from Western Australia include three teeth and a pelvic fragment from Devil's Lair (Davies 1968, 1973; Freedman 1976; Allbrook 1976), a study of cranial morphometrics (Margetts and Freedman 1977), the Cossack material (Freedman and Lofgren 1979*a, b*), a study of odontometrics (Freedman and Lofgren 1981), middle ear ossicles (Blumer, Freedman and Lofgren 1982), and discrete non-metric cranial traits (Milne, Schmidt and Freedman [in press]). Because of the already known length of human occupation of Australia (> 40 000 BP, Jones 1979), as well as the

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considerable variation in form demonstrated by described material, there is particular importance in all discovered Pleistocene human skeletal material. Also, problems of regional variation in space and time require the close study of all available material so that existing models may be refined. This paper offers new data pertaining to these problems.

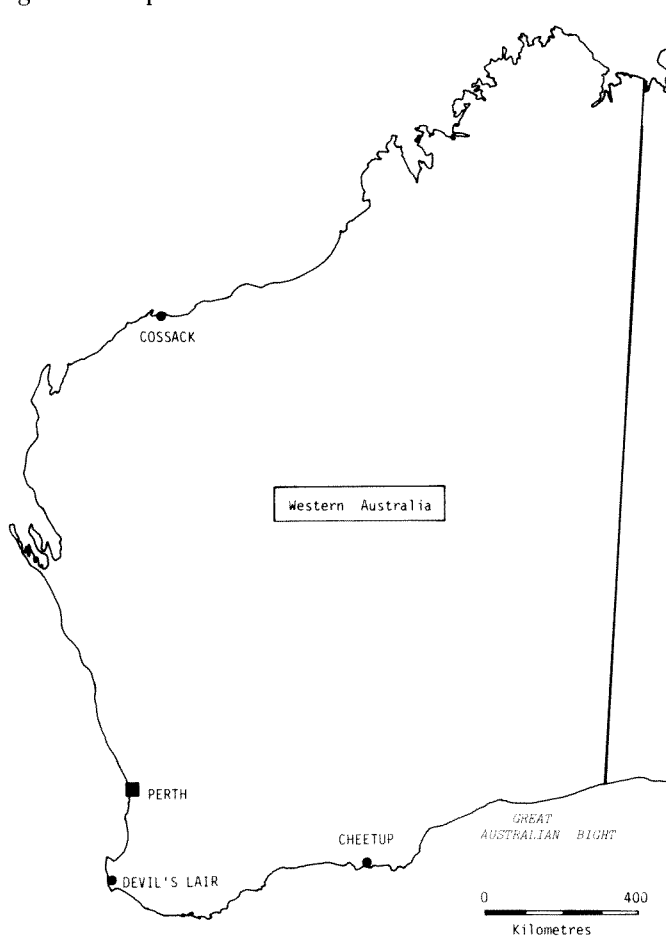


Figure 1 Location of Cheetup, W.A.

### Material

The fire-damaged skeletal remains recovered from this excavation include more than 100 small bone fragments, of which the largest piece is only 25 mm x 16 mm. The identifiable fragments are primarily from the skull vault, but 5 pieces of bone are clearly from the post-cranial skeleton, and there are parts of 6 teeth also present.

### Skull Bones

More than 60 small fragments of the cranial vault are present (Figure 2). Only 4 fragments are more than 15 mm x 10 mm, and no attempt has been made to reconstruct the vault. In most instances only a single table of bone (usually the outer) is present, but a few fragments include both tables and many of the others have some of the inner cancellous bone still attached. When both tables of bone are present, the thickness of the fragments vary from 1 mm to 1.5 mm, but it is not possible to identify the regions of the vault from which these fragments came.

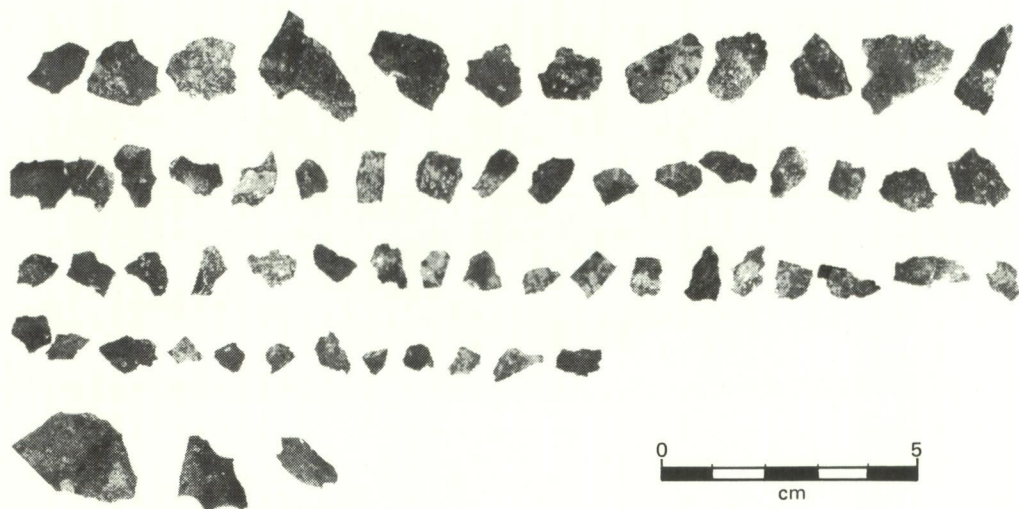


Figure 2 Cranial fragments, Cheetup, W.A.

### Small Unidentified Fragments of Bone

There are over 25 small slivers and thicker pieces of bone (Figure 3). Some of the thicker pieces could come from the cranial base or face. Only one piece of these is more than a fragment. That piece is about 25 mm x 16 mm and over 7 mm at its maximum thickness, and could be part of the mastoid region of a temporal bone. Some of the other fragments could be parts of post-cranial bones, particularly long bones.

### Post-cranial Bones

Of the 7 post-cranial fragments (Figure 4), 5 are identifiable. Three are proximal or distal parts of limb long bones. Two of these are probably the right and left proximal parts of the shafts of humeri (Figure 4A and B), the cross-sectional measurements of these pieces being approximately 7.8 mm x 9.1 mm

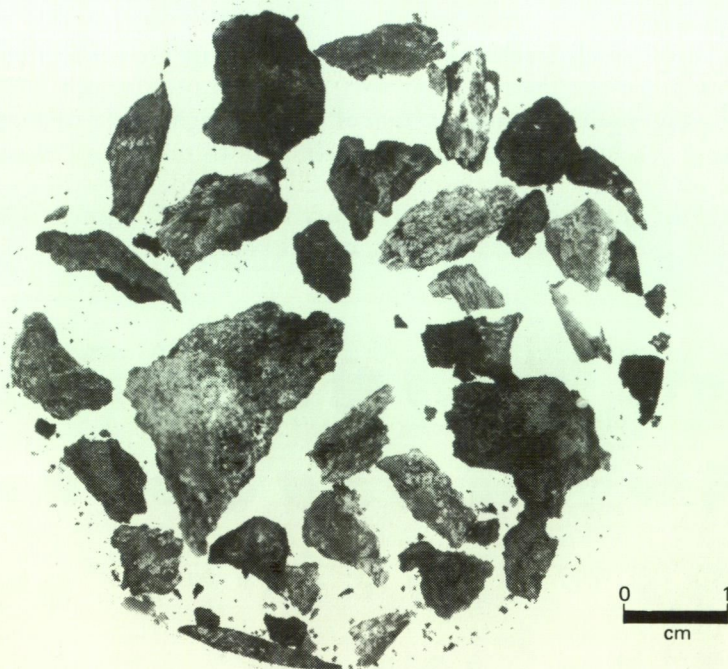


Figure 3 Unidentified fragments, Cheetup, W.A.

Table 1 Approximate dimensions of the Cheetup teeth, and comparisons with some other deciduous teeth mentioned in the text (in mm).

Tooth	Dimension	Cheetup	Devil's Lair	Mod. Aust. Ab. Means ‡	
				♀	♂
di <sup>1</sup>	height (crown)	7.2	—	—	—
	length (m-d)	6.0	7.0*	7.20	7.35
	breadth (b-l)	—	5.25*	5.30	5.47
di <sup>2</sup>	length (m-d)	—	6.0†	5.93	6.00
	dc	height (crown)	6.0	—	—
dm <sup>1</sup>	length (m-d)	5.7	—	6.16	6.31
	breadth (b-l)	5.2	—	5.84	6.05
	length (m-d)	7.0	—	7.28	7.55
	breadth (b-l)	8.0 (l & r)	—	8.77	9.07

\* Davies, P.L. (1968)

† Freedman, L. (1976)

‡ Margetts, B. and Brown, T. (1978)

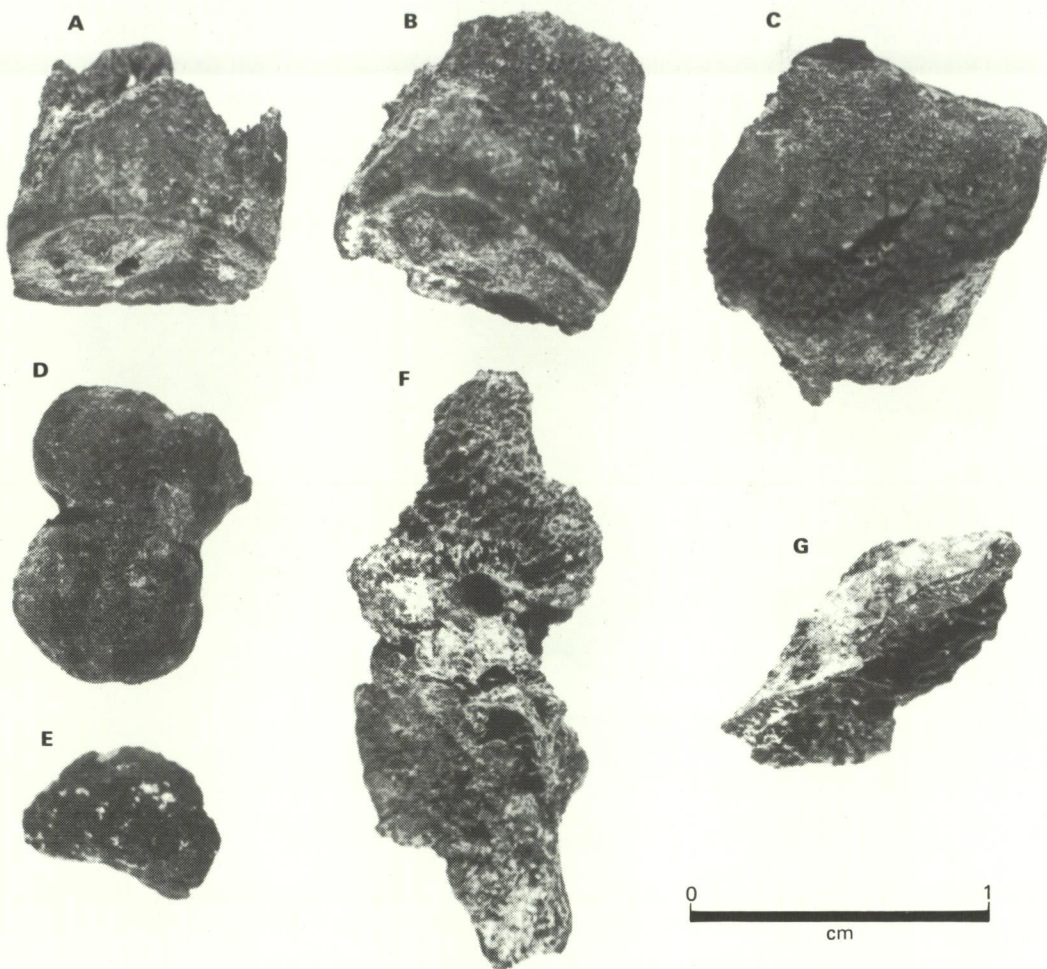


Figure 4 Post-cranial fragments, Cheetup, W.A. (see text for identifications).

and 7.5 mm x 9.1 mm. The third end fragment (Figure 4C) is damaged but might be the distal end of the shaft of a humerus. The fourth fragment (Figure 4D) is an epiphysis, probably from the distal end of a humerus and it measures about 10 mm x 7.5 mm. The fifth fragment (Figure 4E) is a small portion of the epiphysis of a long bone, but it is too small to be more specifically identified.

### Teeth

There are 6 individual teeth or parts of teeth present in the remains found. The specimens are all the unworn calcified crowns, or parts of crowns, of deciduous

teeth; no roots are present (Figure 5). The specimens include: (Figure 5A) the labial part of the crown of the right  $di^1$ ; (Figure 5B) the crown, probably of a  $\overline{dc}$ ; (Figure 5C and D) the whole left, and part of the right, crown of  $dm^1$ , (Figure 5E) part of the crown of a right  $dm_1$ , and (Figure 5F) another  $dm$  crown fragment, possibly the left  $dm_1$ . The approximate measurements of the teeth are given in Table 1.

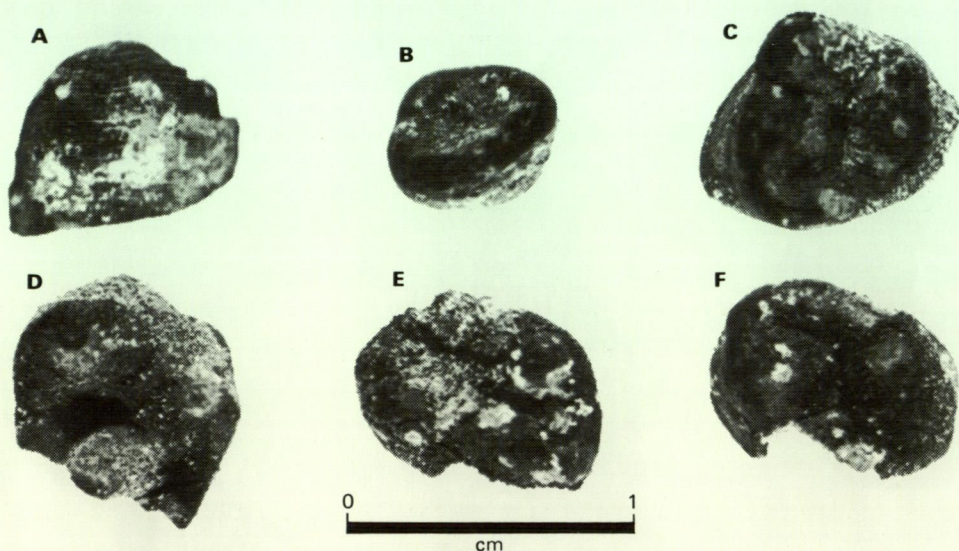


Figure 5 Deciduous teeth, Cheetup, W.A. (see text for identifications).

### Conclusions

The small size and partially charred condition of the bone fragments described make reconstruction and more extensive analysis impractical. The majority of the fragments are from the cranial vault and probably represent virtually the whole of that region. The few possible cranial base and face fragments are too small for any certain assignments to be made.

Of the post-cranial skeleton, only 5 identifiable fragments were found and these are the ends of long bones or their epiphyses. The coloration of these fragments suggests extensive charring much more so than does the condition of the skull fragments, in which the colour and damage suggest less exposure to heat. These differences may account for the paucity of post-cranial remains.

The 6 teeth and tooth fragments are all of deciduous teeth lacking roots. They show no obvious signs of attrition and it does not appear as if the roots had been formed. On the basis of the apparently unworn state and lack of roots of the teeth found, an approximate age of about 6 months would seem the most reasonable assessment, using the ossification data summarized by Gabriel (1965). In

view of individual variability and the fact that initially there would be little wear on the teeth, a range of 3-9 months of age is postulated. In view of these dimensions being smaller than even the female mean values of Margetts and Brown (1978), it is possible that the remains are those of a female child.

The location of the remains within a discrete feature identified as a hearth, and condition of the fragments of bone suggest some tentative conclusions. As with the Lake Mungo cremation (Bowler *et al.* 1970), the pyre did not entirely consume all bone fragments, and differential charring was the result. Charring is consistently more intense on external surfaces of individual fragments. While other explanations are possible for the presence and state of the remains, it appears most likely that the child was cremated as a complete and fully-fleshed cadaver.

### Acknowledgements

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