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REPORT ON ISOLATED HUMAN REMAINS FROM K2, SOUTH AFRICA*

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ABSTRACT

The skeletal collection from the Mapungubwe complex of Iron Age sites is the largest of its kind in southern Africa. During recent excavations, the partial remains of at least three more individuals were unearthed in the main midden of K2. These comprised of cranial remains, and included a near complete cranium, a complete mandible, a fragmentary mandible and several broken teeth. There were no signs of a formal grave in the excavated area. Although normal taphonomic factors seem to be the most likely explanation for the discovery of partial skeletons, other factors such as rituals and warfare should be considered.

INTRODUCTION

The Mapungubwe complex of sites (AD 1000-1300), of which K2 forms a part, has been the focus of several studies involving human skeletons (*e.g.* Galloway 1937, 1959; Rightmire 1970; De Villiers 1979; Steyn 1994). At least 107 skeletons from K2 and Mapungubwe have already been unearthed during the several field work sessions since the 1930's (Steyn 1994). K2 skeletons have mostly been discovered in the midden which forms the central part of the site (Gardner 1963) (Fig. 1). Most of these were formal burials associated with broken pots, beads, and other items. When these were mapped, according to age and sex, no clear pattern emerged to indicate whether persons of a certain age or sex were buried in any specific area of the site (Steyn 1994).

During excavations conducted in 1995 on the main midden at K2, where it had apparently overflowed the previously existing cattle kraal (Fig. 1), cranial remains of at least two more individuals were discovered. These were, however, not formal burials, but were scattered in between the rest of the refuse found in the midden. The remains comprised of two mandibles and a cranium.

THE CRANIUM

The cranium (UP30) was found, upside down, in a dense animal bone concentration right next to a living floor (Fig. 2). It was about 10 cm. beneath the surface, in an apparently undisturbed deposit. Animal remains were mostly that of domesticated stock, mixed with potsherds and beads commonly found in the K2 midden. There were some disturbances, probably caused by burrowing animals, in the 2 x 2 m square that was dug, but careful excavations revealed these not to be in the vicinity of the skull.

The cranium is relatively complete, although the skull base and occipital bone are fragmented (Fig. 3). Its general morphology is that of a female individual, with small mastoid processes, a vertical forehead, absence of supercilliary eminences and sharp superior orbital margins (Buikstra & Ubelaker 1994). The shape of the skull (cranial index 70.1) and nose (nasal index 61.8), as well as the degree of subnasal prognathism indicate an individual of South African Negroid origin (De Villiers 1968). Skull measurements and non-metric observations that were possible are shown in Tables 1 and 2.

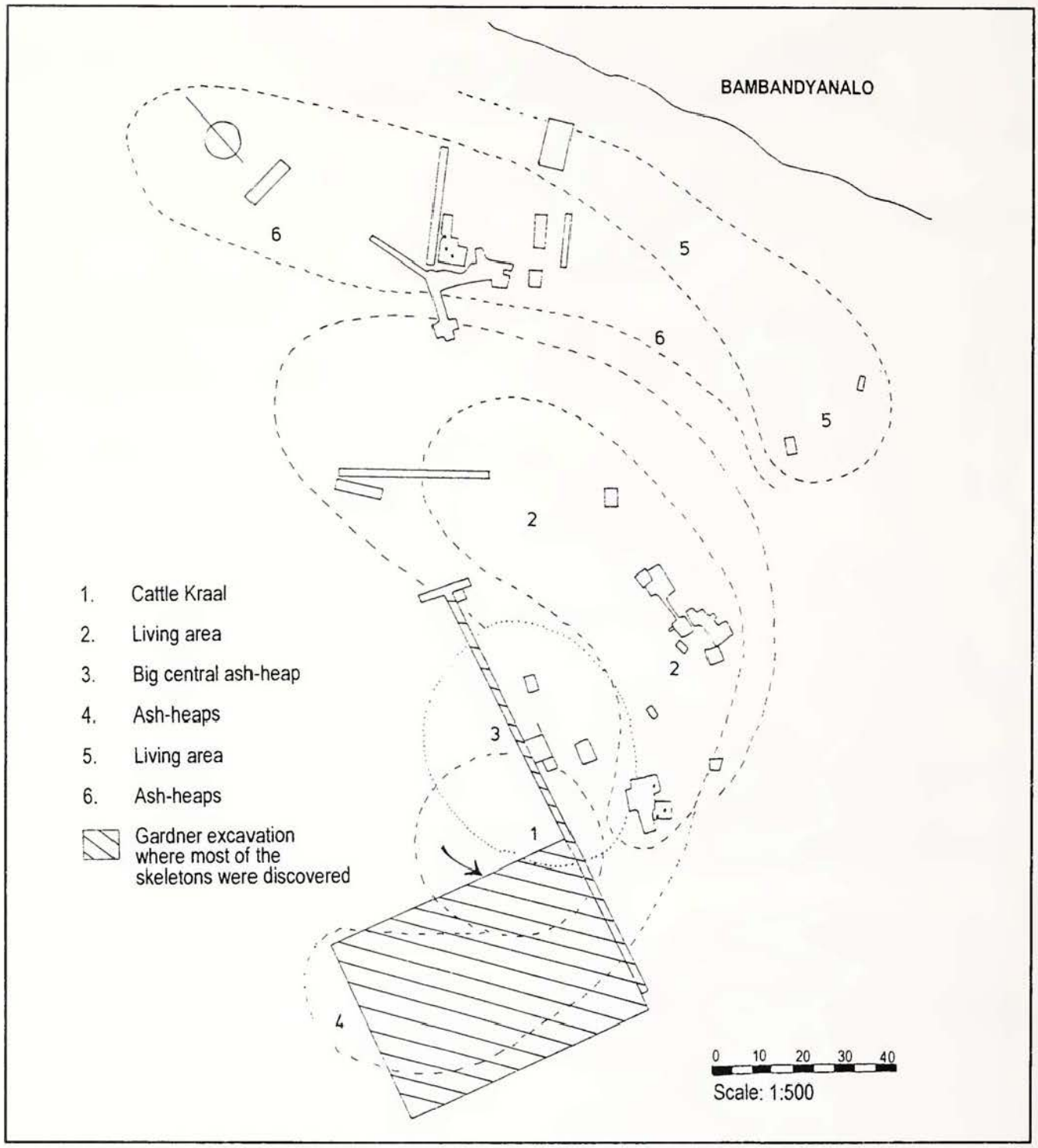

Fig. 1. Map of K2, with position of isolated human remains indicated (arrow). Original map taken from Eloff (1979).

Age determination is very difficult due to the absence of all post-cranial bones and incomplete teeth. All cranial sutures are, however, open and the few occlusal areas still present on the teeth are not too severely worn. This would indicate an age of about 30-50 years (Krogman & Iscan 1986).

The left zygoma is fractured, and the posterior part of the remaining bone gives the impression of a cut or hack injury (Fig. 4). The outer table of the bone is destroyed, and the remaining surface has striations, all running in the same direction. This surface was further investigated by means of scanning electron microscopy (SEM). A negative imprint of the bony surface was first made using Wacker silicone. From this a positive imprint was casted with Elastocil 1470 Araldite resin. The posterior part of the fractured zygomatic surface appeared rather smooth, with the anterior area more pitted, resembling the normal structure of bone (Fig. 5). Several experienced researchers at the Transvaal Museum were consulted, but all believed that the fracture was not due to gnawing

Table 1. Measurements of skull UP30 (in mm).

Maximum cranial length (L)	±184,0
Maximum cranial breadth (B)	129,0
Least frontal breadth (B^1)	97,5
Horizontal perimeter (U)	505,0
Transverse arc (Q)	284,0
Frontal sagittal arc (S_1)	128,0
Parietal sagittal arc (S_2)	122,0
Frontal sagittal chord (S^1_1)	109,0
Parietal sagittal chord (S^1_2)	110,0
Upper facial height (G^1)	65,2
Bimaxillary breadth (GB)	99,0
Inter-orbital breadth (DC)	24,8
Orbital breadth (O_1)	39,4
Orbital height (O_2)	34,0
Nasal height (NH)	45,5
Nasal breadth (NB)	28,1
Maxillo-alveolar breadth (M61)	60,0
Palatal breadth (G^1_2)	38,1

Table 2. Non-metrical observations of UP30.

Metopism	none
Glabellar prominence	flat
Supercilliary eminences	absent
Ophryonic groove	absent
Sutures at pterion	H (rightside, no left
Horizontal parietal suture	absent
Inferior frontal eminence	bilateral, small
Mons temporosphenoidales	absent right (no left)
Post. root zygoma	delicate
Tympanic plate	moderate
Mastoid process	small
Supra-asterionic region	slight flattening
Cranial form	ovoid
Wormian bones	one at lambda
Post-coronal region	rounded
Interparietal region	slight grooving
Parietal foramina	absent
Zygomatic arch	phaenozygous
Foramen of Huschke	none
Shape of orbits	rectangular
Supra-orbital foramina	one right, left notch
Infra-orbital foramina	one right, (no left)
Position of nasion	superficial
Os japonicum	absent right (no left)
Torus palatinus	absent
Torus maxillaris	absent

animals. They were not, however, sure that it resulted from a cut or hack injury either. The possibility of natural breakage should thus strongly be considered.

MANDIBULAE

The first mandible is complete (UP31), and was probably that of a male individual, since it is very robust with inverted gonial angles and a square chin (Ferembach *et al.* 1980) (Fig. 6). The full set of permanent teeth had erupted, but tooth wear is slight indicating an age of about 25-35 years (Ferembach *et al.* 1980). It clearly does not belong to the skull UP30. Two complete and three broken molars are present, and there were no ante-mortem tooth losses. This mandible was also found in an inverted position about 90 cm from the skull, on the same level and at the outer edge of the bone concentration. Measurements for this mandible can be found in Table 3. Molar tooth measurements fall within the ranges of those from other K2 individuals, with the exception of the mesiodistal diameter of the third molar which is larger. This diameter is closer to that seen in the Mapungubwe individuals, although it should be kept in mind that the sample size is small (Steyn 1994).

Table 3. Measurements of mandible UP31 (in mm).

Max. condylar length (cyl)	23,9
Projective height left coronoid (crh)	66,5
Projective height left ramus (rl)	62,0
Min. ant-post width of left ramus (rb^1)	39,2
Projective length corpus (cpl)	94,5
Projective height corpus (m_2h)	29,7
Symphysial height (h_1)	33,2
Maximum bicondylar breadth (w_1)	117,5
Bicoronial breadth (crcr)	97,2
Bigonial breadth	97,7
Min. chord between mental foramina (zz)	50,5
Mandibular angle	105,5O°
Max. projective length of mandible (ml)	108,0

The second mandible (UP32) was discovered in the adjacent square, and is very fragmentary. It consists of a partial left mandibular ramus, with a few broken tooth roots. In the close vicinity at least three more fragmentary and one complete molar were discovered. These could not be positively linked to either of the mandibles.

DISCUSSION

Researchers from various sites have noted the presence of isolated human bones, for example in pots at Broederstroom (Mason 1986), or mixed with other deposits, *e.g.* at Wosi, (Van Schalkwyk 1994). Scattered human skeletal elements have previously been found at Greefswald/K2 from time to time. Gardner (1963:16) reported an isolated mandible discovered by Van Tonder in a test trench on K1. He also commented on the "lack of ceremonial burial of many of the skeletons" which he attributed to either warfare or reinterment. In his grave lists he often stated that there are "many bones missing", but it is impossible to say if this was the result of normal decay, post-depositional disturbances or poor excavation techniques.

Another incomplete burial, most probably the result of ritual behaviour, came from an overhanging rock close to K1 (Steyn 1995). Here an articulated skull, mandible and upper three cervical vertebrae were found in an upturned pot.

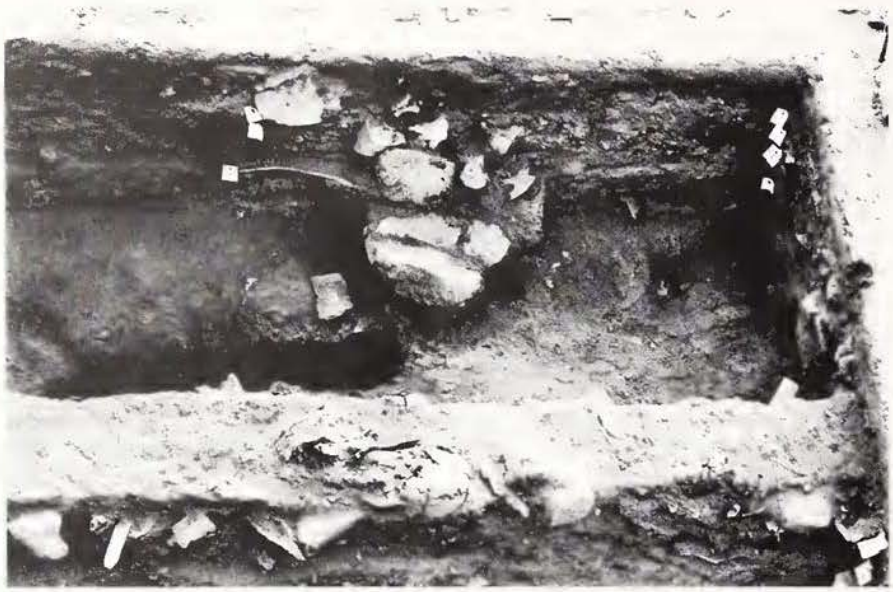

Fig. 2. Skull (1) in bone concentration, next to living area (4).

Fig. 3a. The skull (UP30) in anterior and right lateral view.

The most obvious explanation for the discovery of incomplete human remains is that the deposits had been disturbed by scavenging animals, but it seems curious that most of these finds, and particularly this find, comprised only cranial remains. Taphonomic studies have shown that cranial remains, and especially mandibles, are more often preserved than post cranial ones (Brain 1967, 1969, 1995). Brain studied the survival of goat bones found that any disproportions in the preservation of bones resulted from differential robusticity. Scavenging animals also seem to prefer feeding on the postcranials. It was found that when leopards feed on hyraxes, its body disappeared completely except for the skull which tended to have the occiput chewn away. The possibility that the disproportionate number of cranial remains found during the recent excavations resulted from normal taphonomic factors, should therefore strongly be considered. On the other hand it should be kept in mind that the K2 area was probably intensively occupied during that time period, and it is doubtful whether wild animals would come into an inhabited area. Since detailed excavations revealed no signs of later distur-bances, any scavenging on the remains would have had to take place shortly after the death of the individuals.

An investigation of situations where normal burials were not conducted, such as warfare, cannibalism, rituals or epidemics, needs to be undertaken. Although it is difficult to compare an Iron Age site with a MSA site, human skeletal remains from Klasies River also showed a "paucity of non-cranial" remains (Deacon 1995:127), and it has been suggested that the scratches on the frontal bone of one of the individuals may have been the result of cannibalism (White 1987). The Klasies River skeletal remains include about a dozen fragments of cranial vault, and only two post cranial pieces. Most of the remains are fragmentary, and some show evidence of burning and possible cutmarks. They were, like the reported remains from K2, also found in association with discarded food waste. According to Deacon the distinction between ritualism and cannibalism is not clear, and there might have been a component of both. Cannibalism seems unlikely in this context, and no cutmarks could be seen on any of the human bones from K2.

The reason for the differential preservation of cranial elements at K2 is therefore not clear at all, and only further excavation at this and other sites could help resolve this issue.

Fig. 3b. The skull (UP30) in right lateral view.

Fig. 4. Posterior part of the zygoma of UP30, showing a possible injury

Fig. 5. Scanning electron micrograph of zygomatic surface of P30.

Fig. 6. Mandible UP31.

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