

CLAY 'FIGURINES' FROM THE RIET RIVER: A CASE OF NATURAL SITE FORMATION*

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ABSTRACT

A concentration of vitrified clay objects resembling the baked hut rubble on Late Iron Age living sites was examined. The feature was excavated and analysed and led to the conclusion that the occurrence was the result of the spontaneous burning of plant material accumulated by floods. These clusters were fired by natural combustion and produced the cinder 'slag' and peculiar moulded clay objects. The paper aims to put the occurrence on record and to render a word of caution to researchers when accounting for slag from Iron Age archaeological sites.

INTRODUCTION

Type R or Khoi settlements along the Riet River between Jacobsdal and Koffiefontein in the south-western Free State, dating from the 16th-19th centuries, have been described by Maggs (1971, 1976) and Humphreys (1973). The area is also known for its abundance of early Khoi burials (cf. Van Riet Lowe 1929, 1931; Wells & Gear 1931; Humphreys 1970; Humphreys & Maggs 1970).

During excessive rains in February 1988 and again at the beginning of 1989, human skeletal remains were exposed by flood waters at Pramberg on the banks of the Riet River near Jacobsdal. These exposures were reported to the National Museum, Bloemfontein, leading to rescue excavations in September 1988 and March 1989 (Brink *et al.* 1992).

In search of further occurrences of exposed skeletal material, the south bank of the River was examined for several kilometres upstream from Pramberg towards Koffiefontein. Although no burials were found during the fieldwork, it was alarming to witness the amount of flood damage to the stone-walled settlements. Various sites were severely disrupted, while others were almost totally covered by the alluvial deposit.

A concentration of baked clay and 'slag' was discovered a few kilometres down stream from the Pramberg burials. The feature resembled the remains of a hut or lelapa wall such as characterise the Iron Age settlements on the Highveld (cf. Maggs 1976, Dreyer 1992). This presumption was supported by the recording of Type R stone-walled settlements in the area and on the farm Pramberg in particular (Humphreys 1972:21).

It was decided to investigate the occurrence for possible human occupation. The investigation included an

excavation at the spot and an analysis of the 'slag'. A visual comparison of the clay objects with a cross-section of the reeds from the river bed was also done. This paper describes the finds in general and considers the significance of the burnt clay objects.

THE SITE

The site containing the burials is located on the farm Pramberg 15, about 24 km south of the town of Jacobsdal (2924BB). The farm borders on the Riet River, and the conical hill, Pramberg (29.13.38S. 24.46.52E.), adjacent to the River, forms a very prominent landmark in the area. On the west bank of the Riet River another range runs from Pramberg parallel to the river downstream in an easterly direction (Fig. 1).

The geology of the area has been discussed by Humphreys (1972). The environment consists mainly of layers of the Ecce and Dwyka Series of the Karoo system which are overlaid here by the Ventersdorp System. Exposed dolerite dykes and sills which intruded into the softer sedimentary layers of the Karoo System produced the many characteristic dolerite ridges and koppies of this region (Fig. 2).

The Riet River derives its name from the abundance of reeds, mainly *Phragmites australis*, which flourish along its banks. The area forms part of the false upper Karoo vegetation (Veld Type 36, Acocks 1988). Intruding *Acacia* species are found along the banks of the Riet River and on the flood plains near the stream bed. Large bundles of driftwood and reeds were accumulated by the floods against the vegetation and barbed wire fences. Several converging dongas were scoured into the slope towards the river bed (Brink *et al.* 1992).

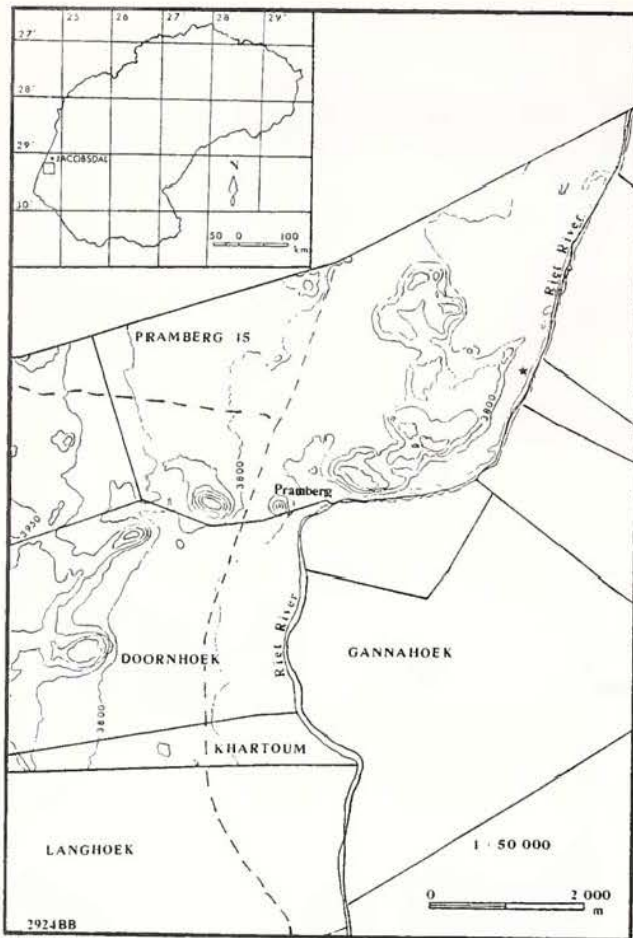


Fig. 1. Location of the site.

FEATURE

About 4 km downstream from Pramberg a concentration of burnt clay and vitrified 'slag' was found on the surface at the foot of the range about 150 m from the river bed (Fig. 3). The debris was spread out evenly in a half circle of about 2,5 m diameter. The accumulation consisted of unidentified baked clay objects and nodules of porous, vitrified clay (Fig. 4) resembling slag (Friede & Steele 1980). The whole feature looked like the remains and debris of structures of human occupation which were described by Maggs (1976) and Dreyer (1992) dating from the Late Iron Age. Chunks of charcoal and pieces of burnt twigs and branches were strewn about. A few Later Stone Age flakes and the odd tool of lydianite or indurated shale and agate were scattered in the donga nearby. Of particular interest were two rather large side scrapers (measuring 8 x 7 cm & 6 x 4 cm) with secondary retouch. The highly contaminated state of the deposit was clear and disputed any significance in the presence of these flakes. They were, therefore, not collected. No potsherds or any other cultural material were found on the surface.

INVESTIGATION METHODS

Although none of the previous surveys (Maggs 1971, Humphreys 1973) recorded pastoral settlements on the



Fig. 2. View from the top of Pramberg along the Riet River. Previously described human remains were recovered from the area in the foreground. The present site is located near the river to the far right.



Fig. 3. General view from the ridge. The river is marked by the row of tall trees, while the arrow (centre) indicates the locality of the clay finds.



Fig. 4. Burnt vitrified clay on the surface.

1 km of the river in association with the dolerite actual flood plain, some settlements were in fact within outcrops which characterise the area (Humphreys 1988). In view of this it was decided to treat the occurrence with caution. It was argued that the river could have altered or widened its course somewhat during the floods, distorting the actual evidence of events regarding the feature. The occurrence was seemingly out of context, but it was

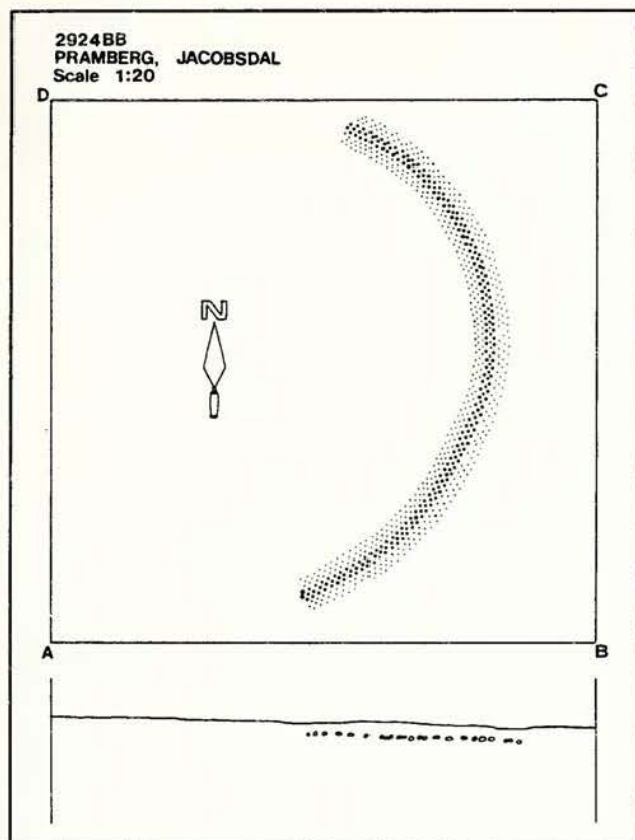


Fig. 5. Plan and profile of the excavated feature.

nevertheless investigated to ascertain its possible relationship.

A 3 m² square was plotted over the burnt clay feature selected to include the biggest concentration of visible 'slag' and clay objects. The deposit was excavated in 5 cm arbitrary layers. The second layer was eventually abandoned due to the rapid decrease in material until it became totally sterile. The sandy deposit was easily removed and was sifted as a single unit. Ashy burnt soil and clay objects were concentrated towards the centre of the square to about 5cm below the surface. No further material was found in what appeared to be a sterile alluvial deposit without any stratigraphy (Fig. 5).

Many of the clay objects are cylindrical or halfmoon shaped. Faint grooves in parallel lines on the ventral surface produce a moulded appearance. The objects were compared to sections of reeds (*Phragmites sp.*) recovered from the immediate vicinity (Fig. 6).

Other clay objects are of no particular uniform shape or size. They have a porous texture (Fig. 6) and are very light in mass. These vitrified chunks resemble cinders from the fused residue of burnt organic materials. The vitrification and bubbly texture of the cinders could indicate that a relatively high temperature was reached over a short period of time. The cinders could be either iron-free or with a low iron content (Friede *et al.* 1981). An analysis of the 'slag' was done at the Geology Department, University of the Orange Free State, Bloemfontein. The results are given below (Table 1).



Fig. 6. Some of the burnt clay objects exhibited together with reeds and cinders. Note how the 'figurine' fits into the reed mould.

The findings compare favourably with analysis of cattle byre deposits and iron slag remains from various other Iron Age sites (Dreyer 1992:325). Although the same high silica content is shown, there is neither further evidence of the presence of metal-working nor historical proof or any other indication of iron-working communities in the area. The close resemblance in the results brings doubt to the presumption of metal slag from many Later Iron Age sites on the Highveld (*cf.* Dreyer 1992:320).

Table 1. SLAG ANALYSIS

Main components		Trace elements parts/million	
SiO ₂	70,37%	Rb	95
TiO ₂	1,01	Sr	217
Al ₂ O ₃	14,06	Y	31
Fe ₂ O ₃	5,24	Zr	409
MnO	0,12	Nb	13
MgO	1,84	Cu	36
CaO	2,90	Zn	40
Na ₂ O	1,59	Ni	46
K ₂ O	2,40	Co	20
P ₂ O ₅	0,14	Cr	138
H ₂ O	0,16	V	123
LOI	0,06		

DISCUSSION AND CONCLUSION

With regards to the 18th-19th century occupation of the sites along the Riet River, there is clear evidence of trade and cultural contact with Tswana groups to the north since about 1500 (Humphreys 1988). This perception and the social and cultural interaction within the area suggested the possible presence of structures of perishable materials as used by Sotho/Tswana peoples during the Iron Age (Maggs 1976, Dreyer 1992).

The origin of the 'slag' concentrations became clear after the archaeological investigation gave proof of the absence of any human involvement in the manufacturing of these objects. Further indications of iron-smelting or smithing were likewise not found. No correlation with cultural remains from Type R could be made, although stone walls at Pramberg have been classified as part of the Type R settlement layout (Humphreys 1972).

Even though the burnt clay objects and vitrified nodules at Pramberg superficially resemble clay objects and slag associated with human activity, the origin due to natural causes could be explained satisfactorily in this case. It is presumed that sludge penetrated cracks in the reeds, filling the centre of the internodes almost to capacity before they were fired, thus producing the moulded clay objects.

A bundle of debris which obstructed the gateway of a fence nearby was deliberately set alight by the landowner. The residue of this fired bundle produced moulded objects and cinders exactly resembling the finds from the excavation. Veld fires of this kind during the time after the floods were confirmed by the owner of the farm. Several other concentrations of burnt clay were later found some distance away from the River.

The present experiment seems to support Friede's (1981:39) word of caution to scientists in the interpretation of slag occurrences at Iron Age archaeological sites. Not all surface slag finds endorse the interpretation of being proof of prehistoric iron-working. Supporting evidence for iron-smelting in the form of tuyère fragments, pieces of ore and furnace remains should be present to justify the claim.

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REFERENCES

- Brink, J.S., Dreyer, J.J.B. & Loubser, J.H.N. 1992. Rescue excavations at Pramberg, Jacobsdal, south-western Orange Free State. *Southern African Field Archaeology* 1:54-60.
- Dreyer, J.J.B. 1992. The Iron Age archaeology of Doornpoort, Winburg, Orange Free State. *Bloemfontein: Navorsing van die Nasionale Museum* 8(7):261-390.
- Friede, H.M. & Steel, R.H. 1980. Experimental burning of traditional Nguni huts. *African Studies* 39(2):175-181.
- Friede, H.M., Hejja, A.A. & Koursaris, A. 1981. Archaeo-metalurgical studies of Iron smelting slags from prehistoric sites in Southern Africa. *Journal South Africa Institute of Mining and Metallurgy* 82:38-49.
- Humphreys, A.J.B. 1970. The remains from Koffiefontein burials excavated by W. Fowler and preserved in the McGregor Museum, Kimberley. *South African Archaeological Bulletin* 25:104-115.
- Humphreys, A.J.B. 1972. The Type R settlements in the context of the later prehistory and early history of the Riet River valley. Unpublished M.A. thesis: University of Cape Town.
- Humphreys, A.J.B. 1973. A report on excavations carried out on a Type R settlement unit (Khartoum I) in the Jacobsdal district, O.F.S. *Annals of the Cape Provincial Museums* 9:123-157.
- Humphreys, A.J.B. 1974. Note on a date for a burial from the Riet River. *South African Journal of Science* 70(9):271.
- Humphreys, A.J.B. 1988. A prehistoric frontier in the northern Cape and western Orange Free State: Archaeological evidence in interaction and ideological change. *Kronos* 13: 3-13.
- Humphreys, A.J.B. & Maggs, T.M. 1970. Further graves and cultural material from the banks of the Riet River. *South African Archaeological Bulletin* 25:116-126.
- Maggs, T.M. 1971. Pastoral settlements on the Riet River. *South African Archaeological Bulletin* 26:37-63.
- Maggs, T.M. 1976. Iron Age communities of the southern highveld. *Pietermaritzburg: Natal Museum*.
- Van Riet Lowe, C. 1929. The Stone Age cultures of South Africa. *Cape Town: Annals of the South African Museum* 27.
- Van Riet Lowe, C. 1931. Early graves in the Riet River valley. *South African Journal of Science* 28:430-434.
- Wells, L.H. & Gear, H.S. 1931. Skeletal material from early graves in the Riet River valley. *South African Journal of Science* 28:435-443.