ARCHAEOLOGICAL MITIGATION FOR THE RHINO ANDALUSITE MINE, THABAZIMBI

A Phase II report prepared for Rhino Minerals

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INTRODUCTION

The Rhino Andalusite Mine is located a few kilometres southwest of Thabazimbi, on the edge of the Bushveld Igneous Complex. This area is known for its iron ore, and Iron Age sites are common. Consequently, as part of their Environmental Management Programme, the Mine commissioned Archaeological Resources Management (ARM) to survey the area for sites of archaeological interest before a new phase of mining began. The reports (Huffman 2004, 2005) recommended the mitigation of two sites: first, an Early Iron Age village (2427CB18) that yielded a fragment of a ceramic mask; and secondly, a Late Iron Age complex of homesteads with two iron furnaces (2427CB14). The team also mapped the 'ancient working' (Figure 1).

ARM implemented the mitigations between the 16th and 23rd of April, 2005, and again on the 11th of May 2005. The Mine provided labour on both occasions.

As a Phase II report, we present sufficient detail to gauge the research potential of the excavated artefacts in conjunction with their archaeological context. The artefacts and documentation are thus available for research in the future.

THE INVESTIGATIONS

SITE 2427CB18

The Early Iron Age village (24 42 11S 27 16 56E) lay in a zone of red colluvial and alluvial soil next to a small stream that flows between two ironstone ridges (Figure 2). Mine activity had exposed grain bin supports and scatters of Happy Rest pottery, including the ceramic mask. Because most topsoil was gone, our excavations focused on individual features (Figure 3). Midden deposits were sieved.

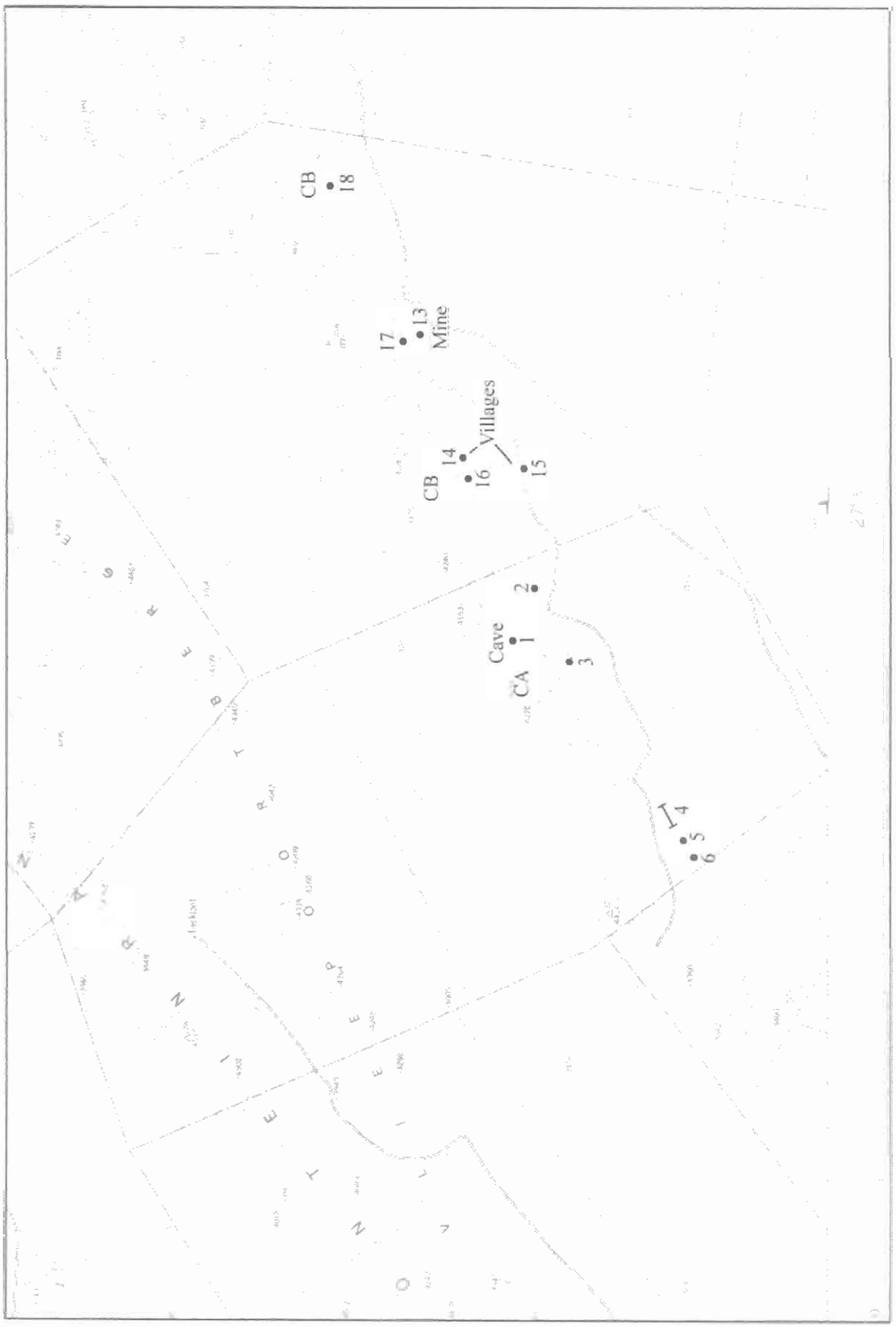

Figure 1. Map showing location of sites CB14 and CB18. From the 1:50 000 map 2427 CB.

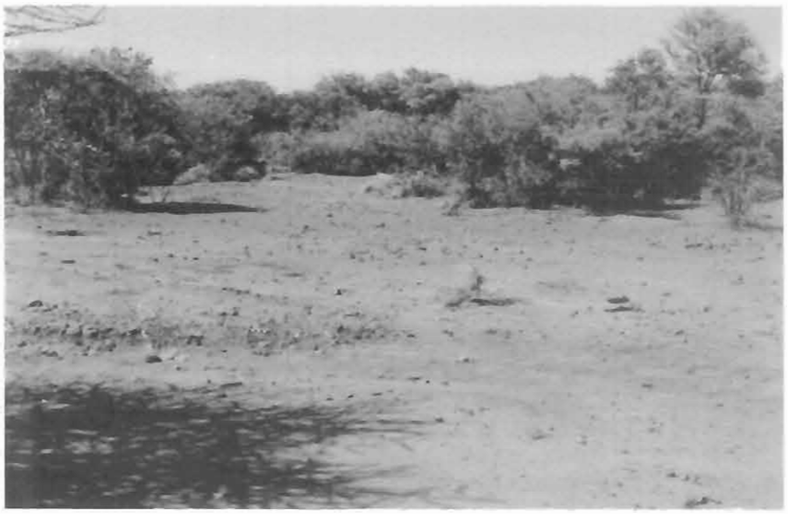

Figure 2. General view of CB18 looking east.

Figure 3. Plan of site 2427 CB18.

Excavations

Trench I

The excavation team placed two 2 x 2m squares over the remains of a collapsed grain bin (Figures 4 & 5). Three rows of upright stones, about 1.25m apart, protruded through thick daga (a mud mixture) flooring about 14cm thick and 4m in diameter. The shape of the actual bin is unknown. One ceramic jar with multiple bands in the neck lay under the daga flooring. There were three other potsherds and some charcoal. Sterile red soil lay underneath.

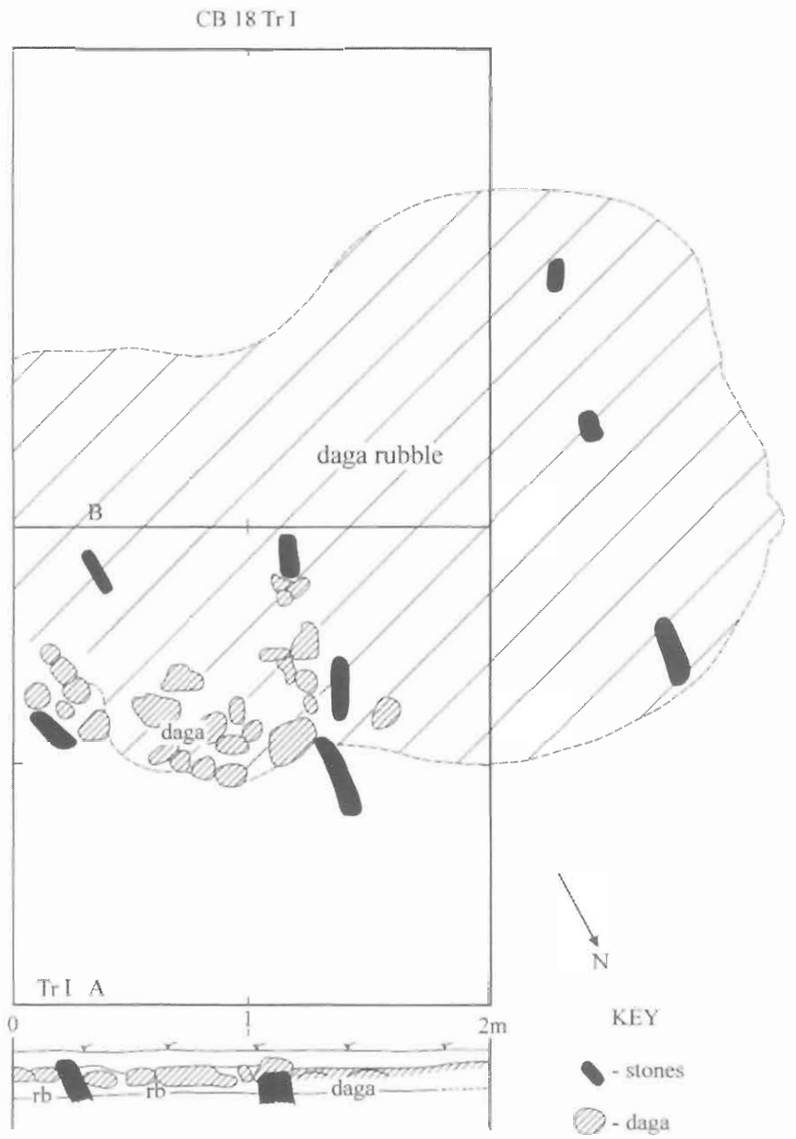

Figure 4. Plan of Trench I.

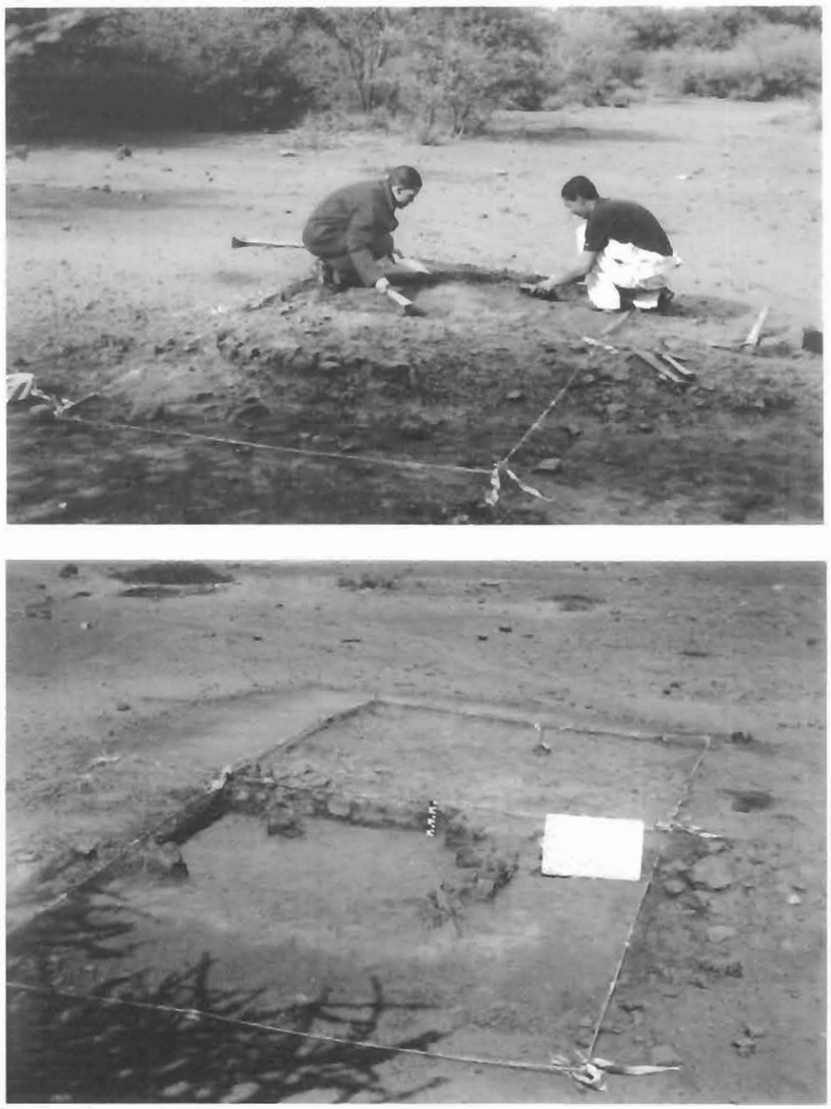

Figure 5. CB18: Trench I, collapsed grain bin.

Trench II

The team placed four 2 x 2m squares over the area that yielded the ceramic mask (Figures 6 & 7). The excavations uncovered a midden deposit (a purposeful rubbish dump), which contained some bone and daga lumps and much pottery (Table 1). Unfortunately, there were no other mask fragments.

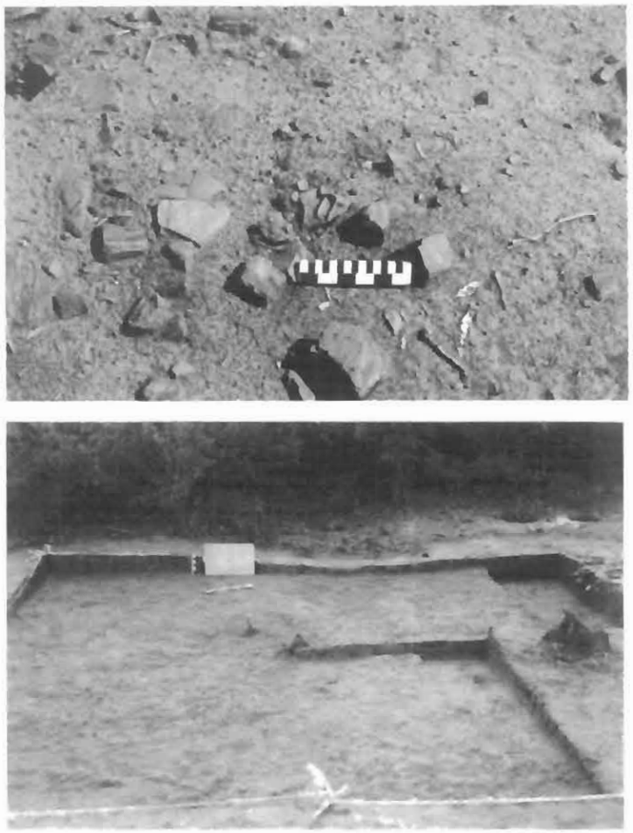

Figure 6. CB18 (top): head fragment *in situ*; (bottom) Trench II midden.

Figure 7. Ceramic Mask found in Trench II.

Table 1. Artefacts in Trench II midden.

			Pottery			Bone	Stone	Shell	Daga	Plant
	Plain		Dec		Rims					
		Rim	N/S	Body						
A	86	2	3		1	x		x	68	Marula nuts
B	242	14	5		2	9,some burnt	1sibelo		155	
C	51		3		1				148	
Pit C	12		1						44	
D	158	7	13	1 - boss	5	9 2 teeth	1soapstone 1 LSA		202	

The artefact horizon, marking the midden, varied from 4cm at the eastern, down slope side to 21cm in Square C at the top. The soil colour was a uniform red-brown. The northern edge of Square C cut through a shallow pit full of rocks (Figure 8). About one half the pit (15 x 75cm) contained some 56 stones of medium size. Sterile red soil lay underneath.

Figure 8. CB18: stone-filled pit, Trench II C.

Trench III

A small cluster of stones (40 x 40cm) appeared in Trench III. This cluster filled another shallow pit, about 15cm deep below the present surface level (psl). The pit yielded the following artefacts:

30 stones
1 upper grinding stone for sorghum
16 plain potsherds
1 decorated sherd
1 reconstructable pot

Trench IV

Another shallow pit appeared on the eastern edge of Trench IV Square A (Figure 9). This pit was discovered on the last day and was not excavated further.

Figure 9. CB 18: stone-filled pit, Trench IV A.

The pit was located at the bottom edge of another midden marked by a concentration of pottery, micaceous schist (sibelo), grooved stone for sharpening bone points and other artefacts (Table 2). The artefact horizon varied from about 10cm deep in the down slope portion of Square B to 20cm below psl in Square A, near the shallow pit. The artefacts lay in a red-brown matrix on top of sterile red soil. Charcoal from Square A has been radiocarbon dated to 1550 ± 80 BP (Pta 9546), which calibrates to a calendar date of AD 450-640.

Table 2. Artefacts in Trench IV.

			Pots			Bone	Stone	Shell	Daga
	Plain		Decorated		Rims				
		Rims	N/S	Body					
B	192	11	13	1 boss 1 disc	7	5	1groove 1 ugs 4sebilo 3 chips		
A	565	12	21	1 boss	8	1		1	5

* ugs=upper grind stone for sorghum

We collected a large amount of material from the general surface for several meters around this midden. It was labelled Area 4. The Area 4 collection includes grooved sharpening stones, sibelo and much pottery. Some of this material has probably washed down slope from the original site of deposition.

The Area 4 midden lay up slope of the grain bin in Trench I. The remains of another grain bin stood about 2m north and up slope, while a third stood about 10m away to the northeast (Figure 3).

Trench VI

Thick daga blocks marking another grain bin lay exposed down slope of the Trench II midden. The daga blocks covered most of a 2m square to a depth of 10cm below psl (Figures 10 & 11). One decorated rim sherd and 19 plain sherds lay among the daga. Sterile red soil lay under the daga horizon.

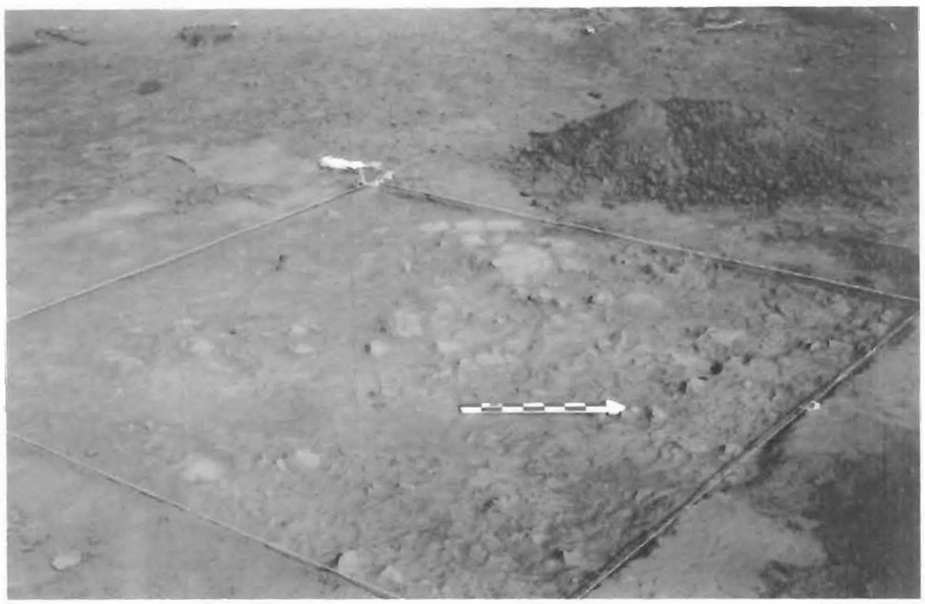

Figure 10. CB 18: grain bin rubble in Trench VI.

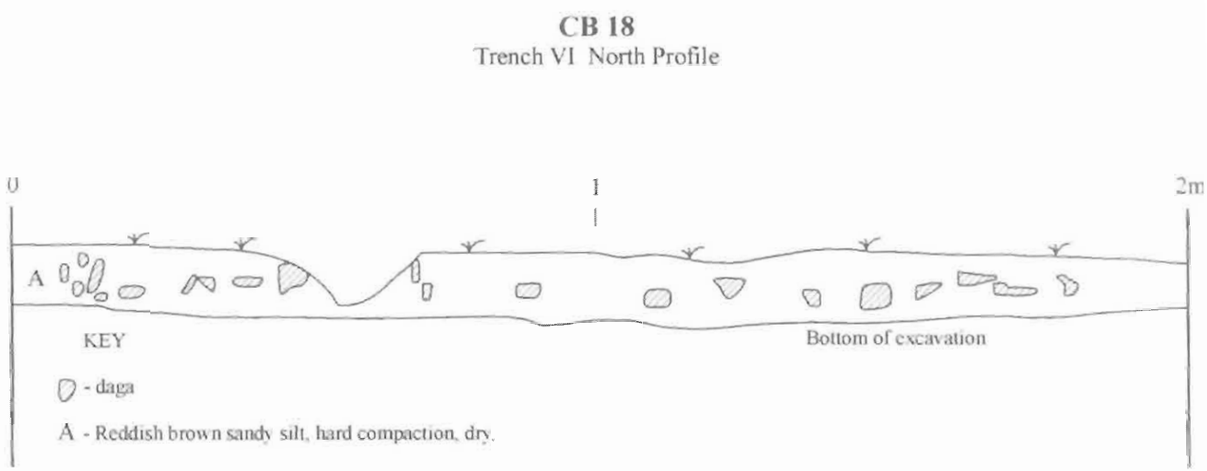

Figure 11. North section of Trench VI.

Trench V

Other grain bins and middens lay exposed at the southern edge of the village (Figure 3). One 2m square just east of a ceramic scatter clarified the stratigraphy in this zone. An original walking surface laid 5 to 7cm below psl (Figure 12). The red-brown soil above contained the following artefacts:

29 plain sherds
1 decorated rim
7 decorated neck/body sherds
1 undecorated rim
1 LSA scrapper
282 daga fragments

Some daga fragments bore pole impressions, but they appear not to mark the original location of a grain bin or house: the structure instead probably stood in the near vicinity.

Figure 12. CB18: prehistoric walking surface in Trench V A.

Shovel Tests

To establish the stratigraphy and to search for other features, the team dug two lines of small test pits, about 5m apart, starting at Trench VI. These test pits showed that the red-brown village horizon varied from 8 to 11cm below psl (depths marked individually on Figure 3). Daga lumps occurred in two, and sterile red soil lay underneath red-brown in all tests. In two cases termites created a darker zone between the red-brown horizon and sterile sub soil.

Finds

The investigations, particularly the middens, yielded a representative sample of pottery. The assemblage includes upright jars with hatched rims and multiple bands in the neck (Figure 13). This combination is diagnostic of the *Happy Rest facies* of the **KALUNDU TRADITION**. A few flared jars are decorated with a band of punctates on the rim (Figure 14), diagnostic of the *Mzonjani facies* of **UREWE**.

Figure 13. Happy Rest pottery at CB18.

Figure 14. Mzonjani pottery at CB18.

Preliminary Discussion

Happy Rest and *Mzonjani* pottery form part of two Traditions that represent the spread of mixed farmers into southern Africa during the Early Iron Age (Figure 15). Elsewhere, for example at Klein Africa (Prinsloo 1974), *Mzonjani* pottery is somewhat earlier. The Rhino village is important because it provides evidence for early interaction. Later, by the 8th and 9th centuries, the two merged to form new facies.

The ceramic mask from Trench II is an example of what has become known as a 'Lydenburg Head'. The first examples were found at a site near Lydenburg (Inskeep & Maggs 1975; Evers 1982) that contained an Mzonjani level underneath a Doornkop horizon (Whitelaw 1996). *Doornkop* is a later facies evolved from *Mzonjani* and *Happy Rest*. A stylistic analysis showed that the masks belonged to the Doornkop horizon, and thus dated to the 8th –10th centuries (Whitelaw 1996). The masks probably represented spirits that were propitiated during initiation ceremonies (Maggs & Davison 1981) controlled by chiefs. The Rhino mask

is earlier than Lydenburg and shows that this type of sculpture was a custom of Kalundu people.

The Rhino village also provides early evidence for settlement organization. The most common organization in South Africa is known as the Central Cattle Pattern (Huffman 1986). The diagnostic features include a central male zone incorporating cattle kraals, long-term storage pits, a men's court, iron smithing area and the graves of men related by blood; all surrounded by an outer female residential zone incorporating houses, raised grain bins, shallow pits for short-term storage and the graves of women and their children. This pattern is the result of a specific worldview associated with Eastern Bantu speaking people who are patrilineal (descent through the father), prefer cattle for bridewealth (lobola), have male hereditary leadership and a positive view of the role of ancestors in daily life (Kuper 1982).

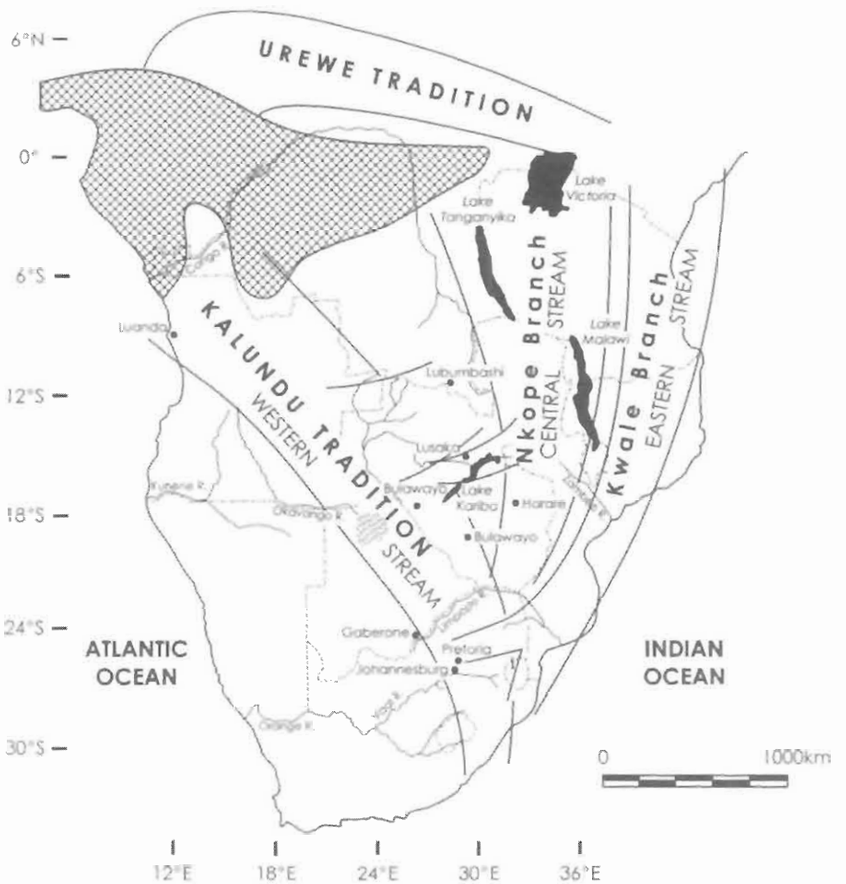

Figure 15. Distribution of ceramic Traditions marking the Early Iron Age spread of Bantu-speaking agriculturalists.

At the Rhino village, the team investigated only the outer female residential zone. The grain bins here are typical of remains from other Early Iron Age sites, such as Broederstroom near Pretoria (Mason 1981; Huffman 1993). Typically, rows of upright stones formed the support for a thick daga floor that in turn supported the actual granary. The floor was raised off the ground to allow air to circulate underneath, helping to keep the produce dry. Often the floor and supports are all that remain, and the shape of the actual granary is unknown. Generally, the granary either had multiple rooms for different produce, or several small granaries served this purpose.

In some rural places today food is also stored in underground pits dug in the grain bin area. Usually, the produce stored in this way consists of underground plants, such as sweet potatoes and ground beans. The pits are poorly sealed so that the first rains wash soil inside, causing the tubers and seeds to sprout, and these are planted for the new season. Today these pits are only used for one season and then filled to prevent people and animals from injuring themselves. The pits at the Rhino site conform to this pattern. In addition to the Rhino site, storage pits in the grain bin area are on record for a few other Early Iron Age sites, such as KwaGandaganda (Whitelaw 1994) in KwaZulu-Natal and Middle Iron Age sites in the Limpopo basin.

The middens at the back among the grain bins are another point of interest. This location is on record for other settlements from the Early Iron Age to at least the 16th century. Presumably, each household had their own dumping place. The ceramic scatter west of Trench V may not be *in situ*. If it is eliminated, then there appears to have been at least six households in this area of the village. These six households form an arc that may well define the radius of the settlement. If daga and pottery on the east side of the main mine road is part of the same village, then this settlement was some 150m across. This is considerably larger than any one unit at Broederstroom but about the same as KwaGandaganda. This large size, as well as the ceramic mask, suggests that the Rhino village was home to a chief.

SITE 2427CB14

The CB14 complex is one of many Late Iron Age homesteads spread along the southern slopes of the ironstone range on the farms Buffelsfontein 353 KQ and Tygerkloof 354 KQ, west of CB18. Dichrostachys shrubs (sickle bush) dominate the slopes, forming dense thickets. As a secondary species, this bush is an ecological indicator of old human land use, and its dominance here is significant.

The CB14 complex (24 42 55S 27 15 18E) includes at least three homesteads marked by hut remains, middens and pottery (Figure 16). A road cutting had exposed the daga rubble of House 3, while erosion uncovered other houses and two furnaces. Maize grindstones (Figure 17) and Moloko pottery, made by Sotho-Tswana people, appeared to be associated. The team excavated various features to verify the association, and to recover charcoal for radiocarbon dating. To control the horizontal distribution of surface artefacts, the lower area was labelled 14A and the upper area 14B. A midden to the east was labelled Area 14C.

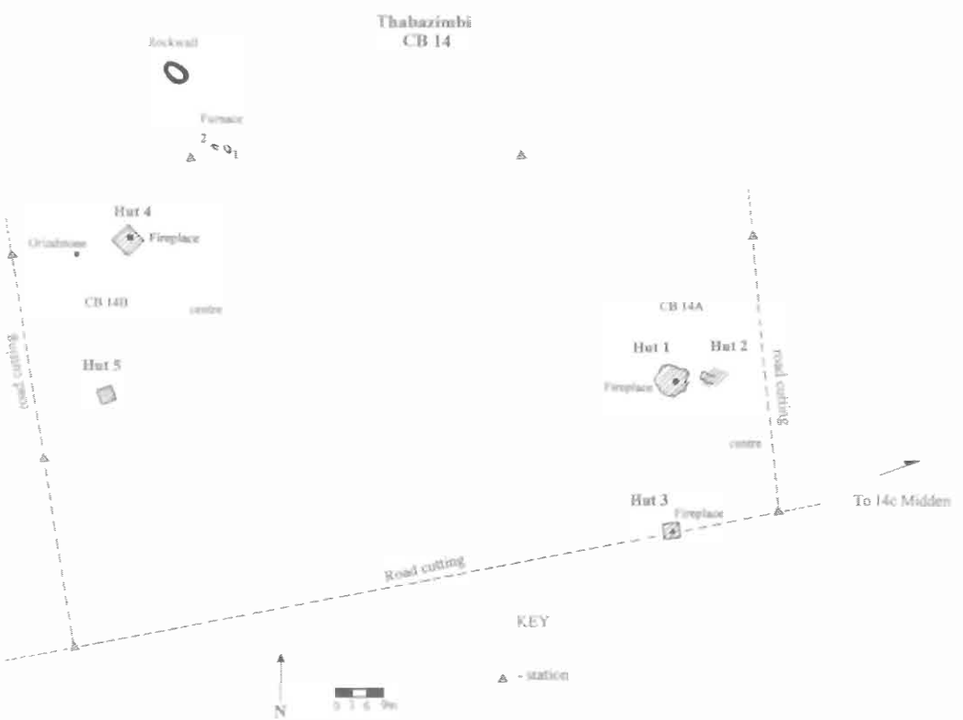

Figure 16. Plan of site CB14 complex.

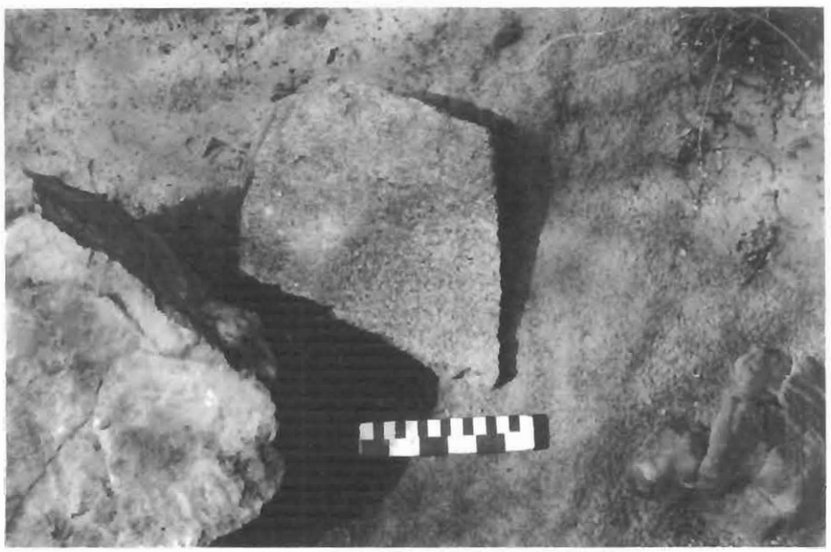

Figure 17. CB14: maize grindstone near House 1.

Excavations

Houses 1-4

When discovered, House 1 was a compact circle of burnt daga, about 2.7m in diameter, standing above the present eroded surface (Figure 18). This house was excavated as a single feature. The daga floor underneath had a central fireplace with two stones, and a raised bench marked the back (Figures 19-20). One upper grindstone sat on the bench while a decorated bowl (PC 1) lay broken on the floor (Figure 21). A few fragments of a plain jar were found in an ashy deposit near the fireplace. Charcoal from House 1 has been radiocarbon dated to 320 ± 40 BP (Pta 9547), which calibrates to a calendar age of AD 1535-1660.

Figure 18. CB14: House 1 before excavation.

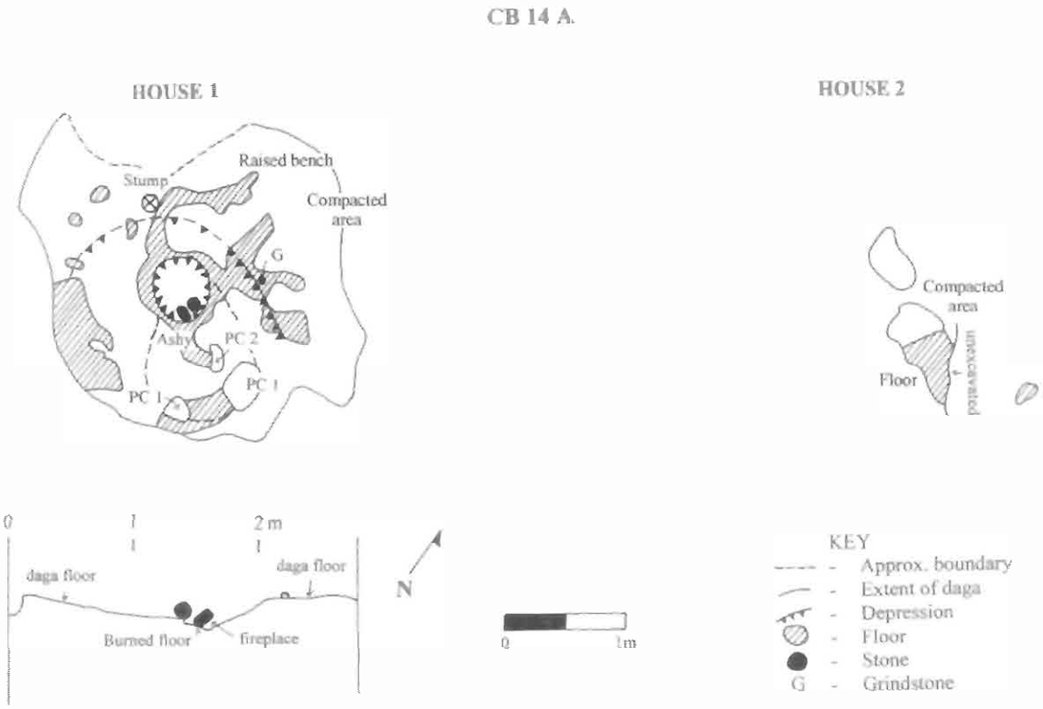

Figure 19. Plan of CB14A.

Figure 20. CB14A: House 1 after excavation. Note central fireplace.

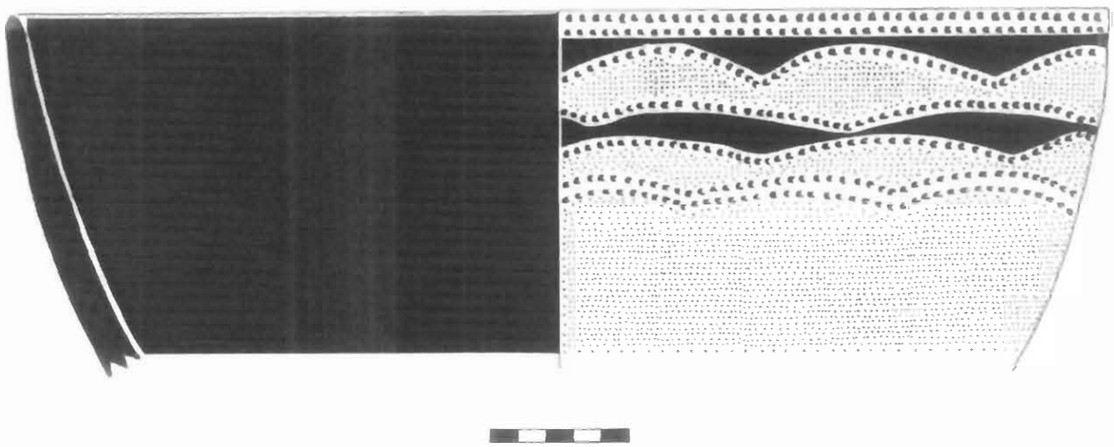

Figure 21. Decorated bowl, PC 1.

Only a small portion of House 2 was exposed. Fragments of floor here also stood above ground on a compact pedestal. The remainder extended under a deep bank of soil and vegetation, which we did not excavate. One decorated jar and the base of a decorated bowl lay on the floor.

The road for the central drill line exposed daga rubble overlying House 3. The team excavated this feature inside a 3 x 3m square. The smooth daga floor included a central fireplace and raised bench, about 50cm wide (Figures 22 & 23). Some 12 broken vessels lay on the floor, mostly around the bench (Figure 24).

Erosion had exposed at least two other houses in another cluster (14B) upslope and to the west (Figure 16). House 4 in this second cluster was at least 2.5m in diameter with a smooth daga floor underneath burnt daga rubble (Figures 25 & 26). It contained a central fireplace with three stones and a raised back area. Several broken vessels lay on the floor (Figure 27), along with at least three upper grindstones. Charcoal from here has been radiocarbon dated to 400 ± 10 BP (Pta 9543), which calibrates to a calendar age of AD 1505-1630.

All that remains of House 5 is a small portion of a daga floor underneath some stones on a raised pedestal.

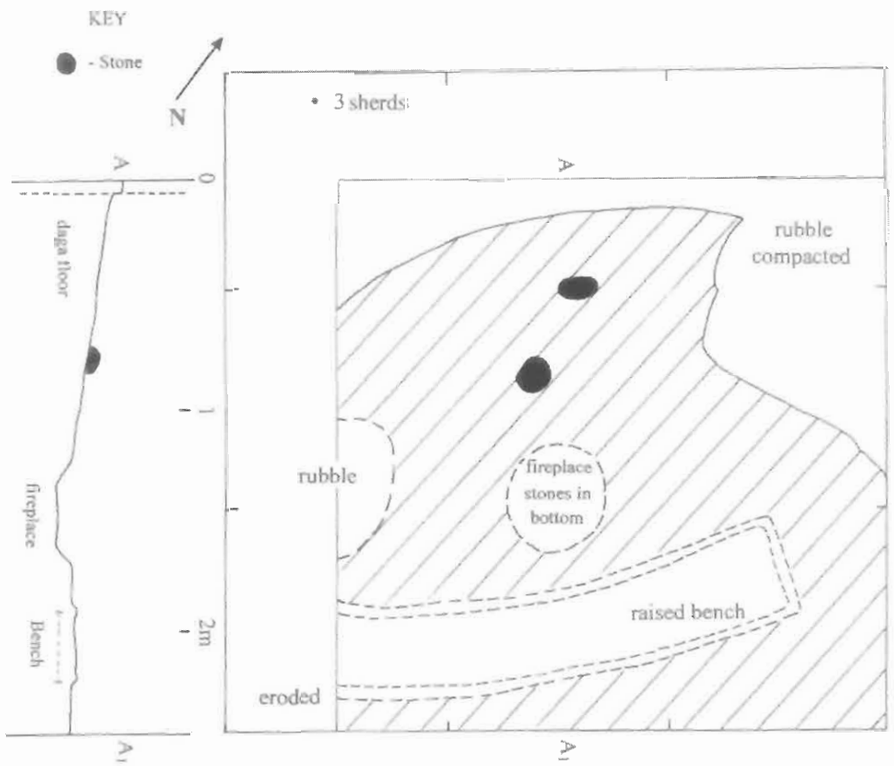

Figure 22. CB14A: plan and profile of House 3.

Figure 23. CB14A: House 3. Note raised bench and central fireplace.

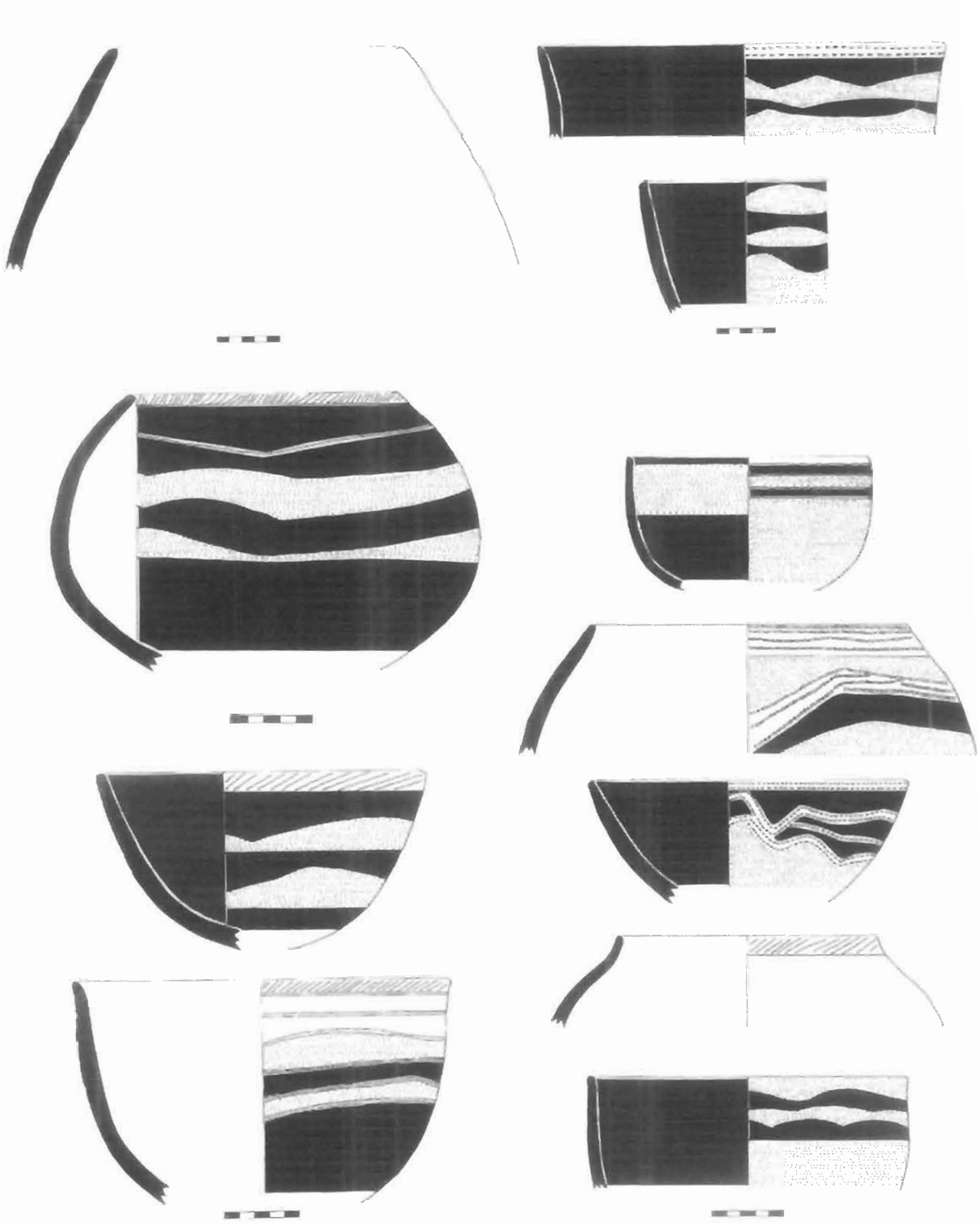

Figure 24. Pottery found on floor of House 3.

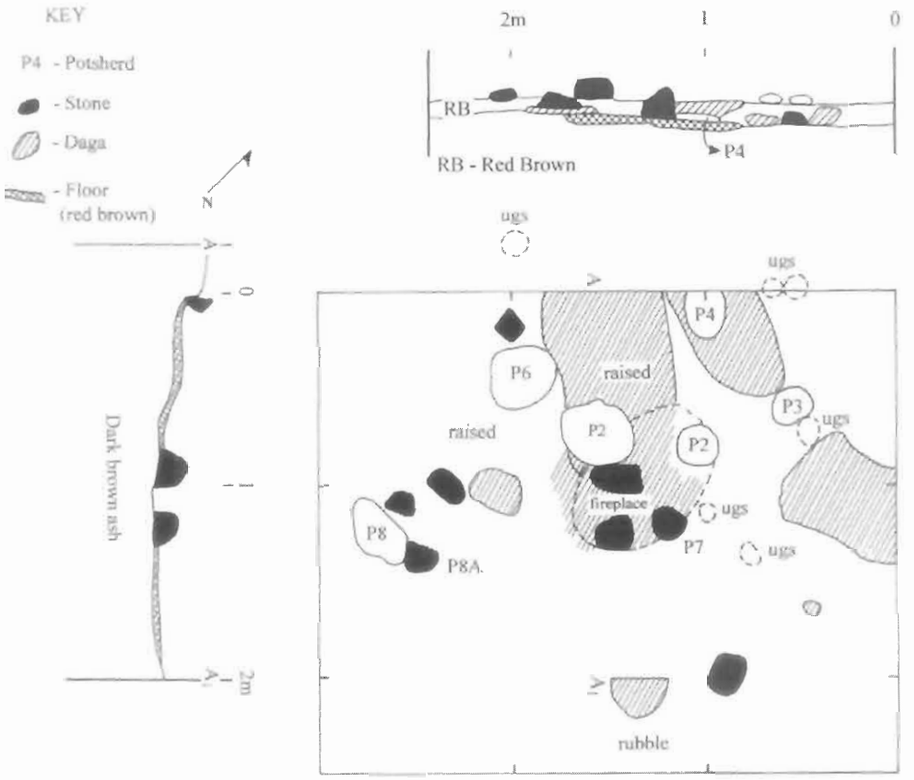

Figure 25. CB14B: plan, section and profile of House 4.

Figure 26. CB14B: House 4. Note central fireplace and broken pottery.

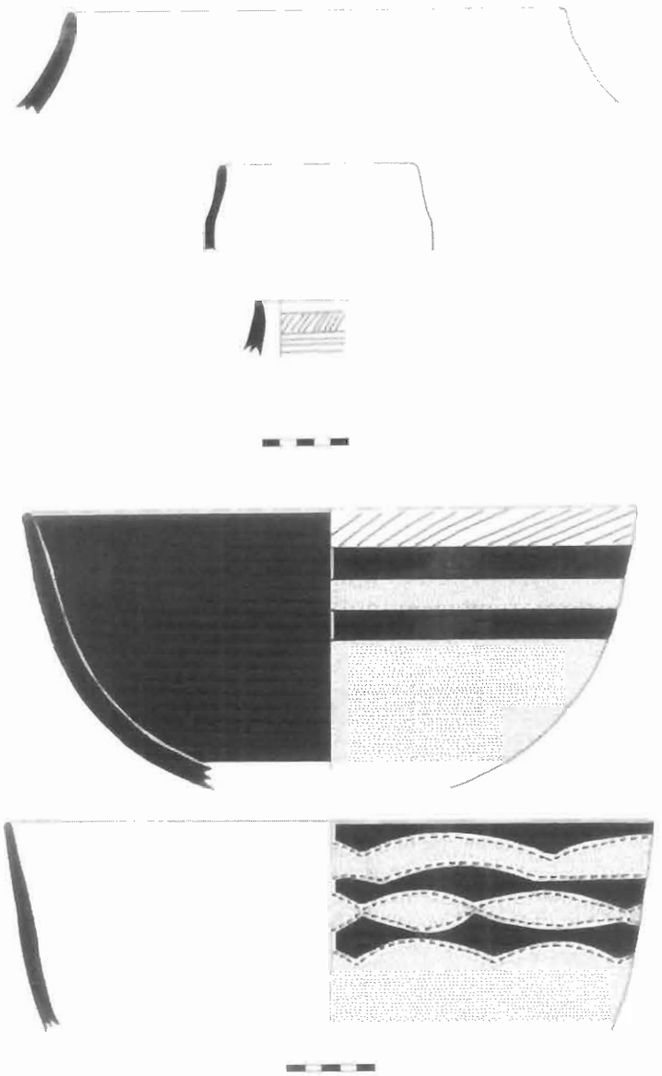

Figure 27. Pottery on floor of House 4.

Furnaces

The remains of two furnaces stood upslope of the second house cluster. Furnace A, the best preserved, was about 60cm long and 45cm wide (Figures 28 & 29). The vitrified walls were some 5cm thick, and the bottom varied from 2 to 5cm, directly on stony bedrock. Medicine holes were not obvious in either. Charcoal from the interior of Furnace A yielded a radiocarbon date of 530 ± 25 BP (Pta 9545), calibrating to AD 1420-1435.

Small fragments of slag a few meters south probably mark a processing area (P on Figure 16).

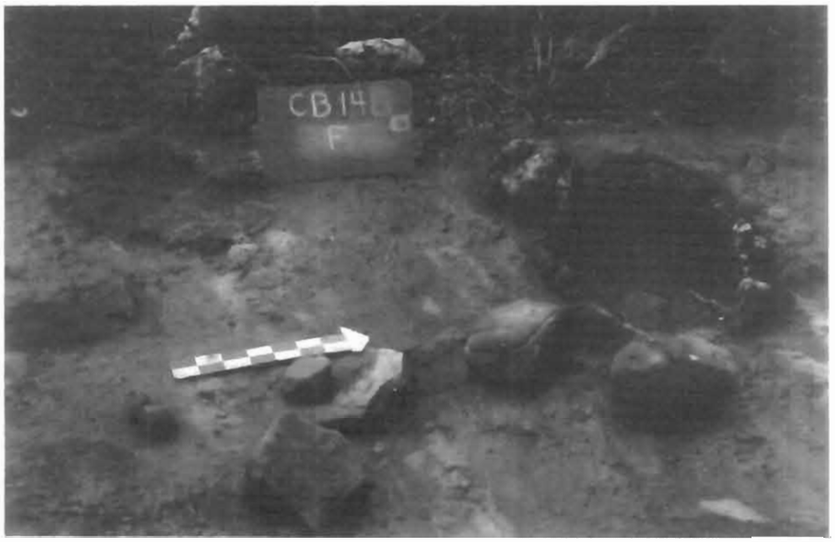

Figure 28. CB14: furnace.

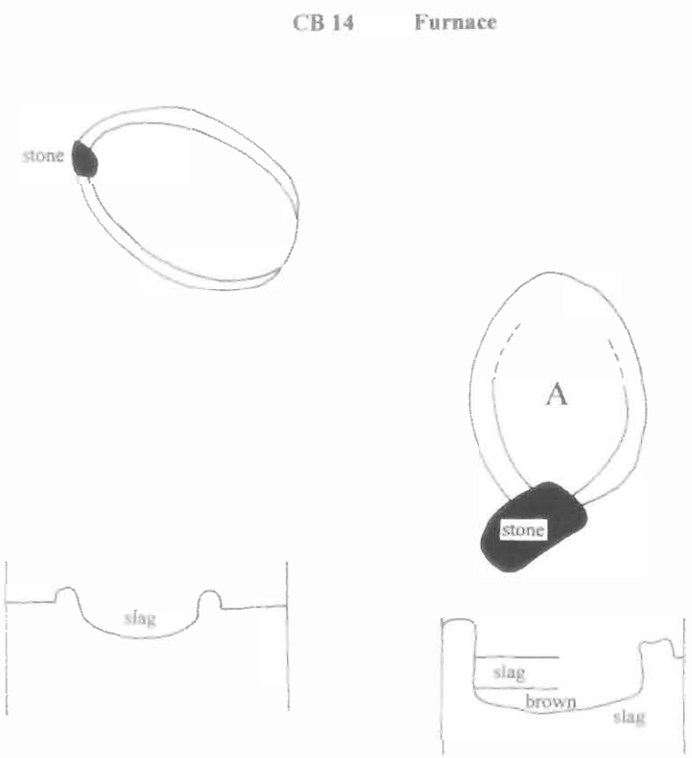

Figure 29. CB 14: plan, section and profile of furnaces.

Midden 14C

An ashy deposit next to a small erosion gully in Area C marked the location of a midden (Figure 30). A 1 x 2m trench yielded some metal slag and pottery (Figure 31). The intact deposit was about 10cm thick. The surface and excavated deposit contained the following artefacts:

16 plain sherds
2 decorated rims
2 decorated body sherds
2 burnished sherds
4 plain rims
slag

Figure 30. CB14 C: midden.

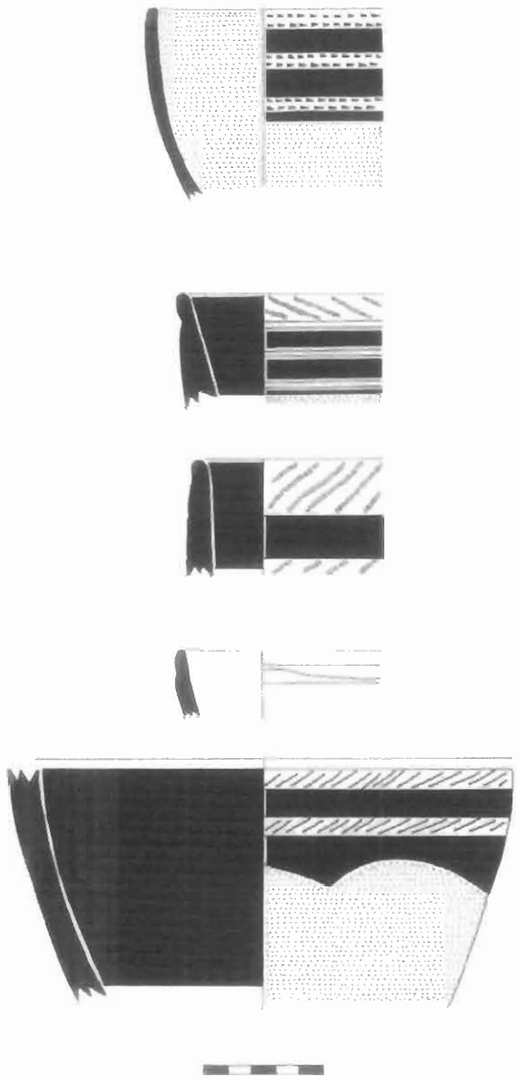

Figure 31. CB14C: pottery from midden.

Finds

The pottery from all three areas, and the surface, contained the same stylistic types. Bowls and beaker shapes decorated with alternating bands of colour separated by incision and punctates are particularly common. These combinations are diagnostic of the *Madikwe facies* of the Moloko cluster. The wide distribution of the same pottery shows that there was only one occupation phase at CB14.

Preliminary Discussion

This *Madikwe facies* is the product of Western Sotho-Tswana. Elsewhere, the pottery is dated to between AD 1500 and 1700 (Huffman 2002), and so the two dates from the houses are not unusual. The furnace date is older, but this is not surprising since old trees are often used to produce charcoal for smelting. The location of the furnaces upslope behind the settlement is typical of the Central Cattle Pattern, and the furnaces and houses are most probably contemporaneous.

The house remains are typical of the Central Cattle Pattern in that they had central fireplaces and there was a raised bench of some sort defining the back. Originally, three stones would have stabilized a cooking pot over the fire. Furthermore, the backbench was a place for storing pots, and this is where most vessels in House 3 and 4 were found. The orientations of the houses show that there were at least two centres. Incidentally, erosion had left the floors standing above the present surface because the foundations had been purposefully compacted.

Significantly, the excavations show that the maize grindstones were contemporaneous with the houses. One upper grindstone for processing maize lay on the floor of House 4, and lower grindstones were noted on the ground near House 4 and House 1. In general, lower maize grindstones were common on the site, including Area C.

SITE 2427CB13

Ancient Working

The ancient working (2427CB13) stretches from 24 42 42.9S 27 16 12.4E to 24 42 39.3S 27 15 56.3E (Figure 32) in an area characterized by a tufa deposit. A long open trench through the tufa extends from the road upslope for over 130m (Figure 33) to where it becomes an underground stope. At least three if not four vertical shafts provided ventilation.

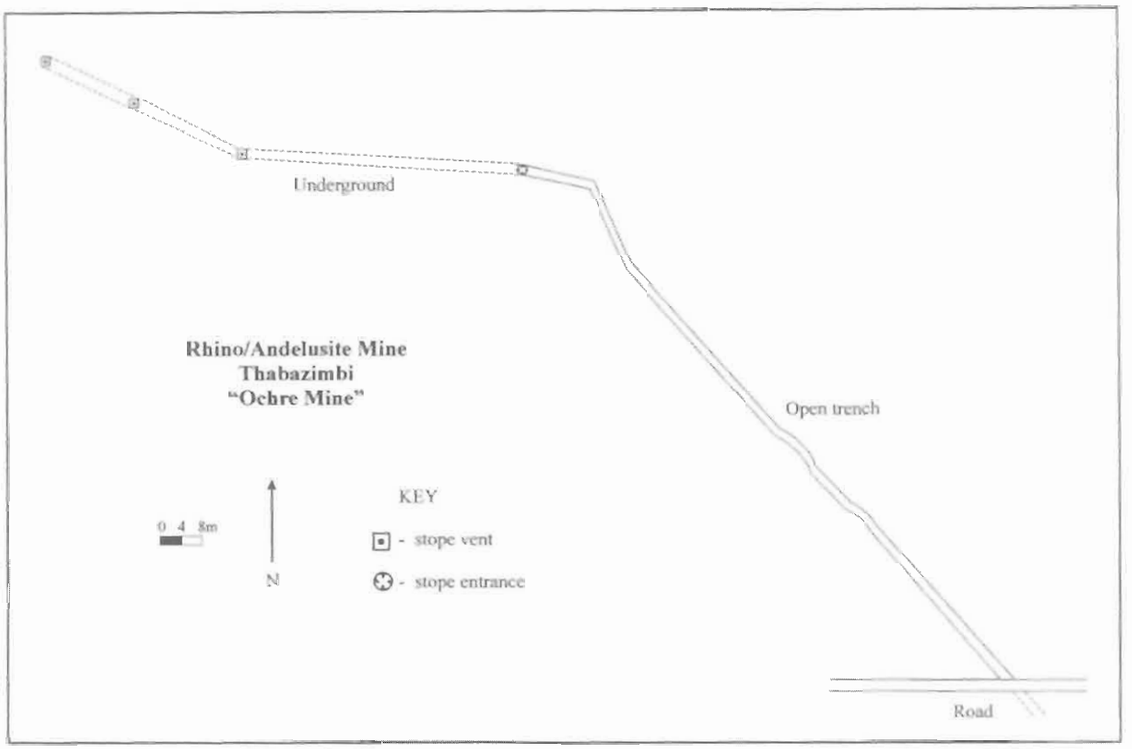

Figure 32. Plan of ochre mine.

Figure 33. Ochre mine: near beginning of open trench.

Poor quality ochre occurs in the spoil heaps along side the open trench. This suggests that the miners were after high-grade red ochre. If true, we can understand how an ochre seam could have formed: a fountain, causing the tufa, would have hydrated the slump of banded ironstone, creating a rich seam in its drainage channel. The mine probably follows the old channel. Presumably, the miners stopped at the eye of the fountain. To confirm this interpretation, the mine itself needs to be investigated.

The archaeological investigations only recorded two occupation periods in the area. As the distribution of *Dichrostachys* and large number of Late Iron Age settlements show, Sotho-Tswana people were the most likely miners.

DISCUSSION

The mine and Iron Age occupations are interrelated. Both Early and Late Iron Age people were attracted to the area because of relative fertile soils around the hills and river valleys, and because of the iron ore.

The relationship is even stronger for the ochre mine, maize grindstones and Madikwe settlements. At this point, the history of tin and bronze becomes important. Tin first occurs in southern Africa at Mapungubwe as an import from the Indian Ocean trade (Fouche 1937). At about AD 1300, Great Zimbabwe replaces Mapungubwe as the regional power. Many copper bangles found in the ruins are actually bronze (in Caton-Thompson 1931); and so, the knowledge of alloying had passed to indigenous metal workers by this time. Apparently, pre-colonial tin mines in Zimbabwe were all alluvial, for example Cornucopia near Rusape (Prendergast 1979), and they would have been exhausted fairly rapidly. Certainly, hundreds of dolly holes for milling ore are part of the Cornucopia Mine. Tin mining was contemporaneous with gold mining in Zimbabwe, and numerous 'ancient workings' are on record (Summers 1969). Many of these gold mines involved stopes and ventilation shafts. African miners used these techniques at Rooiberg, some 30km from Thabazimbi, to recover tin ore (Friede & Steel 1976). They may have already known about Rooiberg because copper had probably been mined from there at an earlier period (Grant *et al.* 1994). Presumably, miners exploited Rooiberg as the tin resources in Zimbabwe became depleted.

My excavation team uncovered a tin ingot from Great Zimbabwe that had a Rooiberg chemical signature (Grant 1995). The ingot probably dates to a late 16th century reoccupation.

Since Great Zimbabwe is some 700km from Rooiberg, trade over long distances was clearly possible.

Somewhat further away, people at Khami near present-day Bulawayo also traded for Rooiberg tin. An unusual plant distribution documents this trade. The Transvaal Red Balloon tree (*Erythrophysa transvaalensis*) grows in the Rooiberg-Thabazimbi area and almost nowhere else (Coates Palgrave 1977: 538). Its large flower yields large dark seeds that are sometimes used as spacers on necklaces. Someone wearing such a necklace probably helped to transport tin from Rooiberg because the plant now grows as an exotic at the Khami Ruins (C.Vernon pers. comm. 1975).

Significantly, Khami and Madikwe villages were contemporaneous, and Madikwe villages occur in the Rooiberg area, for example, alongside the Blaauwbank stream (Hall 1985) and under a later stonewalled settlement near Smelter's Kop (Mason 1986). Different stonewalling stands on Smelters' Kop itself, where tin was processed, and it probably dates to the late 17th and early 18th centuries. The most probable miners at Rooiberg during the earlier Khami period were therefore Sotho-Tswana people making *Madikwe* pottery.

The ceramic evidence shows that the Sotho-Tswana people living in CB14 were directly related to the miners at Rooiberg. It is reasonable to suppose that the local people probably employed the same mining techniques to recover the ochre. Ochre was in high demand. Among other uses, it was painted on pottery, on daga houses and on lapa walls. It probably had symbolic value as well.

Trade connections have a bearing on the presence of maize. In addition to the Zimbabwe culture area, tin was traded to Tsonga-speaking people around Maputo before the arrival of the Portuguese (Friede & Steel 1976). Maize came to the Maputo area sometime after the mid 16th century through Portuguese trade with the New World. According to oral tradition (P. Bonner, pers. comm.. 2006), it was first used in northern KwaZulu-Natal as a medicine before it became a grain crop in the late 18th-early 19th centuries. Perhaps it first appeared in that area by the mid 18th century. Whatever the precise date in KwaZulu-Natal, it was grown in the Thabazimbi area by the mid 17th century, at least 100 years earlier. Because of the trade links for tin, maize may have even been traded into the Thabazimbi-Rooiberg area shortly after its introduction on the coast.

The mitigation measures, then, although limited, have yielded data of significance to early African history.

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